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10 CFR 50.90

JAF-19-0077

August 8, 2019

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

James A. FitzPatrick Nuclear Power Plant
Renewed Facility Operating License No. DPR-59
NRC Docket No. 50-333

Subject: License Amendment Request for Application of the Alternative Source Term for Calculating Loss-of-Coolant Accident Dose Consequences

References:
1. Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000
2. Letter from J. M. Whitman (U.S. Nuclear Regulatory Commission) to Technical Specifications Task Force, "Final Safety Evaluation of Technical Specifications Task Force Traveler TSTF-551, Revision 3, Revise Secondary Containment Surveillance Requirements (CAC No. MF5125)," dated September 21, 2017

The purpose of this letter is for Exelon Generation Company, LLC (EGC) to request Nuclear Regulatory Commission (NRC) approval for adopting the Alternative Source Term (AST), in accordance with 10 CFR 50.67, for use in calculating the Loss-of-Coolant Accident (LOCA) dose consequences at James A. FitzPatrick Nuclear Power Plant (JAFNPP).

Regulatory guidance for the implementation of the AST methodology is provided in Regulatory Guide (RG) 1.183 (Reference 1). This RG provides guidance to licensees of operating nuclear plants on acceptable applications of AST. The use of the AST changes only the regulatory assumptions regarding the analytical treatment of design basis radiological consequence analyses.

The AST analysis for JAFNPP was performed following the guidance in RG 1.183 and Standard Review Plan 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms." The analysis covers the LOCA. This License Amendment Request (LAR) for the LOCA is a full implementation scope application of the AST, as provided in RG 1.183, Section 1.2.1.

The proposed changes to the current licensing and design basis for JAFNPP include:

- Revisions to several Technical Specifications (TS) and associated Bases to reflect implementation of AST methodology.
- Deletion of the Main Steam Leakage Collection (MSLC) system TS and associated Bases.
- Revision to increase the allowable TS leakage for the Main Steam Isolation Valves (MSIVs).
- Revision of the Standby Liquid Control (SLC) system TS and associated Bases.
- Revision of the Ventilation Filter Testing Program (VFTP) TS.

In addition, the proposed change revises SR 3.6.4.1.1, "Secondary Containment," to address short-duration conditions during which the secondary containment pressure may not meet the SR pressure requirement. The proposed change is consistent with Technical Specifications Task Force Traveler (TSTF) 551, "Revise Secondary Containment Surveillance Requirements," Revision 3 (Reference 2), which was approved by the NRC on September 21, 2017. The proposed change adds a Note to SR 3.6.4.1.1 that allows the Secondary Containment vacuum limit to not be met for a short duration period provided an analysis demonstrates that one Standby Gas Treatment (SGT) subsystem remains capable of establishing the required Secondary Containment vacuum.

In conjunction with this LAR, JAFNPP is requesting that the NRC grant an exemption from: 1) the requirements of 10 CFR 50, Appendix J, Option B, Paragraph III.A to allow exclusion of the Main Steam Isolation Valve (MSIV) leakage from the overall integrated leakage rate measured when performing a Type A Test; and 2) the requirements of 10 CFR 50, Appendix J, Option B, Paragraph III.B, to allow exclusion of the MSIV leakage rate of the penetration valves subject to Type B and C tests.

Attachment 1 provides a description and assessment of the proposed changes, the No Significant Hazards Consideration evaluation pursuant to 10 CFR 50.90, and the environmental impact evaluation pursuant to 10 CFR 51.22. Attachment 2 describes the conformance of this LAR to RG 1.183. Attachment 3 provides the existing TS pages marked-up to show the proposed TS changes. Attachment 4 provides TS Bases pages marked up to show the associated TS Bases changes and is provided for information only. Attachments 5 and 6 provide the drawdown analysis and LOCA dose consequence analysis, respectively, that support the assessment of the proposed changes. Attachment 7 provides the proposed exemption to 10 CFR 50, Appendix J. Attachment 8 provides responses to the NRC questions on credit for the SLC system. Attachment 9 provides the Control Room atmospheric dispersion calculation.

The proposed change has been reviewed by the JAFNPP Plant Operations Review Committee, in accordance with the requirements of the EGC Quality Assurance Program.

EGC requests approval of the proposed license amendment by August 8, 2020. Once approved, the amendment shall be implemented within 60 days.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), a copy of this application, with attachments, is being provided to the designated State Officials.

There are no regulatory commitments contained in this submittal. Should you have any questions concerning this submittal, please contact Tom Loomis at (610) 765-5510.

I declare under penalty of perjury that the foregoing is true and correct. This statement was executed on the 8th day of August 2019.

Respectfully,

David T. Gudger
Senior Manager - Licensing
Exelon Generation Company, LLC

Attachments:

1. Assessment of the Proposed Change
2. Regulatory Guide 1.183 Conformance Matrix
3. Mark-Up of JAFNPP Technical Specifications Pages
4. Mark-Up of JAFNPP Technical Specifications Bases Pages
5. JAF-CALC-19-00001, Revision 0 - JAFNPP Secondary Containment Drawdown Analysis
6. JAF-CALC-19-00005, Revision 0 - JAFNPP Post-LOCA EAB, LPZ, and CR Dose - AST Analysis
7. Proposed Exemption to 10 CFR 50, Appendix J
8. Response to Standard NRC Questions Concerning Credit for Standby Liquid Control System
9. JAF-CALC-19-00004, Revision 0 - Control Room Atmospheric Dispersion for Turbine Building Release

cc: USNRC Region I, Regional Administrator
USNRC Senior Resident Inspector, JAFNPP
USNRC Senior Project Manager, JAFNPP
A. L. Peterson, NYSERDA

Attachment 1
Assessment of the Proposed Change

Subject: License Amendment Request for Application of the Alternative Source Term for Calculating Loss-of-Coolant Accident Dose Consequences

Attachment 1
Assessment of the Proposed Change

1.0 SUMMARY DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to the Technical Specifications (TS) for James A. FitzPatrick Nuclear Power Plant (JAFNPP).

The proposed amendment revises the radiological assessment calculational methodology for the Design Basis Accident (DBA) Loss-of-Coolant Accident (LOCA) at JAFNPP through application of the Alternative Source Term (AST), in accordance with the provisions of 10 CFR 50.67, "Accident source term." EGC requests the Nuclear Regulatory Commission (NRC) review and approval of the AST LOCA methodology for application to JAFNPP. This application represents a full scope implementation of AST, as provided for in Regulatory Guide (RG) 1.183 (Reference 6.1, Section 1.2.1), with exception that Technical Information Document (TID)-14844, "Calculation of Distance Factors for Power and Test Reactor Sites" (Reference 6.2), will continue to be used as the radiation dose basis for equipment qualification. The revised LOCA analysis employs the guidance provided in Regulatory Position 1.3 and Appendix A of RG 1.183.

The AST LOCA analysis for JAFNPP was performed following the guidance in Standard Review Plan 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms" (Reference 6.3), and 10 CFR 50.67. Attachment 2 of this License Amendment Request (LAR) provides an RG 1.183 conformance matrix. The LOCA AST dose calculation, upon which this LAR is based, is provided in Attachment 6. This calculation was developed using the NRC approved RADTRAD Version 3.03 software (Reference 6.4).

Approval of this LAR will replace the current design basis source term assumptions and radiological criteria for the LOCA radiological consequences. In accordance with the AST LOCA analysis results, revisions to the JAFNPP Technical Specifications (TS) and TS Bases are proposed based on the revised safety analysis assumptions for a postulated LOCA.

2.0 DETAILED DESCRIPTION

On December 23, 1999, the NRC published regulation 10 CFR 50.67 in the Federal Register. This regulation provides a mechanism for operating license holders to revise the current accident source term used in design-basis radiological analyses with an AST. Regulatory guidance for the implementation of AST is provided in RG 1.183 (Reference 6.1). RG 1.183 provides NRC-accepted guidance for application of AST. The use of AST changes only the regulatory assumptions regarding the analytical treatment of the DBAs.

The fission product release from the reactor core into the Primary Containment (Drywell) is referred to as the "source term," and it is characterized by the composition and magnitude of the radioactive material, the chemical and physical properties of the material, and the timing of the release from the reactor core as discussed in TID-14844 (Reference 6.2). Since the publication of TID-14844, significant advances have been made in understanding the composition and magnitude, chemical form, and timing of fission product releases from severe nuclear power plant accidents. Many of these insights developed out of the major research efforts started by the NRC and the nuclear industry after the accident at Three Mile Island. NUREG-1465 (Reference 6.5) was published in 1995 with revised ASTs for use in the licensing of future light water reactors (LWRs). The NRC, in 10 CFR 50.67, later allowed the use of the ASTs described in NUREG-1465 at operating plants. This NUREG represents the result of decades of research on fission product release and transport in LWRs under accident conditions. One of the major insights summarized in NUREG-1465 involves the timing and duration of fission product releases.

The requested license amendment involves a full-scope application of the AST, addressing the composition and magnitude of the radioactive material, its chemical and physical form, and the timing of its release as described in RG 1.183.

A limited alternative source term License Amendment was approved in an NRC Safety Evaluation Report dated September 12, 2002.

EGC has performed radiological consequence analysis of the LOCA to support full-scope implementation of AST. The implementation consisted of the following tasks:

- Identification of the AST based on plant-specific analysis of core fission product inventory
- Application of release fractions for the LOCA DBA that could potentially result in Control Room (CR) and offsite doses
- Analysis of the atmospheric dispersion for the radiological propagation pathways
- Calculation of fission product deposition rates and transport and removal mechanisms
- Calculation of offsite and Control Room personnel Total Effective Dose Equivalent (TEDE) doses
- Evaluation of Suppression Pool pH to ensure that the iodine deposited into the Suppression Pool during a DBA LOCA does not re-evolve and become airborne as elemental iodine.

EGC is requesting the use of AST for several areas of operational relief for systems used in the event of a DBA, and without crediting the use of certain previously assumed safety systems/functions.

The proposed changes to the current licensing basis for JAFNPP that are justified by the AST analysis include:

- Revisions to several Technical Specifications (TS) and associated Bases to reflect implementation of AST methodology.
- Deletion of the Main Steam Leakage Collection (MSLC) system TS and associated Bases.
- Revision to increase the allowable TS leakage for the Main Steam Isolation Valves (MSIVs).
- Revision of the Standby Liquid Control (SLC) system TS and associated Bases.
- Revision of the Ventilation Filter Testing Program (VFTP) TS.

2.1 Reason for the Proposed Change

The primary motivation for this amendment request is to incorporate a revised source term based on the Core Average Exposure (CAVEX). The CAVEX source term allows increased operational flexibility by bounding a range of core average exposures (GWd/MTU) and fuel enrichments. A second motivation for this amendment request is the increase in allowable MSIV leakage. The third reason for this amendment request is to remove the requirement for post-accident operation of the MSLC system. Refurbishment of an MSIV to meet the current SR 3.6.1.3.10 leakage rate limit is a labor intensive effort which results in a cumulative worker radiation dose and expenditure of resources. Increasing the MSIV leakage rate limit would significantly reduce the amount of rework on the MSIVs. The change would lower personnel radiation exposure and improve the overall performance integrity of the MSIVs by reducing the number of maintenance activities associated with restoring the leakage to an overly strict lower limit. Approval of this proposed change would also be an economic benefit to EGC in terms of direct costs and a reduction in outage activities.

2.2 Description of the Proposed Changes

The proposed revisions to the JAFNPP TS include:

Table of Contents

The Table of Contents is being revised to delete reference to the Main Steam Leakage Collection (MSLC) system.

TS 3.1.7, "Standby Liquid Control (SLC) System"

Added MODE 3 to the applicability statement and added the requirement to be in MODE 4 within 12 hours if a required action was not met.

This change is needed to support the use of the SLC system for buffering Suppression Pool pH as assumed in the LOCA analysis performed in support of this AST LAR (see Attachment 8).

TS 3.3.6.1-1, "Primary Containment Isolation Instrumentation"

Added MODE 3 to the applicable mode column for item d., “SLC System Initiation.”

This change is needed for the reason stated above for TS 3.1.7.

TS 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)"

Revised Surveillance Requirement (SR) 3.6.1.3.10 to increase the combined main steam line leakage rate from 46 standard cubic feet per hour (scfh) to 200 scfh when tested at greater than or equal to 25 psig. It is also revised to include a leakage limit of less than or equal to 100 scfh for a single main steam line when tested at greater than or equal to 25 psig.

The new allowable limit for the combined main steam leakage is a relaxation from the current requirements. The acceptability of this new limit is demonstrated in the supporting AST accident analysis. The resulting radiological consequences are within the applicable regulatory limits.

TS 3.6.1.8, "Main Steam Leakage Collection (MSLC) System"

This TS is deleted in its entirety.

This TS provided operability requirements for the MSLC system. This system is no longer credited for the mitigation of any DBA in the accident analyses performed in support of this AST LAR. Therefore, a TS requiring the operability of this system is no longer necessary and this deletion is consistent with the criteria of 10 CFR 50.36. The criteria given in 10 CFR 50.36.c.2 are addressed below:

Criterion 1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

> The JAFNPP MSLC system does not provide any detection of abnormal degradation of the reactor coolant pressure boundary.

Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

> The JAFNPP MSLC system does provide a process variable, design feature, or operating restriction that is an initial condition of a design basis accident.

Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

> The current JAFNPP MSLC system would be actuated following a DBA to mitigate the consequences of the accident by directing any MSIV leakage to the Standby Gas Treatment System. However, the revised LOCA analysis demonstrates that the offsite and onsite dose consequences following a design basis accident are acceptable and meet the requirements of 10 CFR 50.67 without operation of this system. Therefore, this TS can be deleted.

Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

> The revised LOCA analysis demonstrates that the offsite and onsite dose consequences of the design basis accident are acceptable and meet the requirements of 10 CFR 50.67 without operation of the MSLC system. Consequently, this system is not significant to the public health and safety and this TS can be deleted.

TS 3.6.4.1, "Secondary Containment"

The proposed change revises SR 3.6.4.1.1, "Secondary Containment," to address short-duration conditions during which the Secondary Containment pressure may not meet the Surveillance Requirement pressure requirement. The proposed change is consistent with Technical Specifications Task Force Traveler (TSTF) 551 (TSTF-551), "Revise Secondary Containment Surveillance Requirements," Revision 3, which was approved by the NRC on September 21, 2017 (Reference 6.23). The proposed change adds a Note to SR 3.6.4.1.1 that allows the Secondary Containment vacuum limit to not be met for a short duration period provided an analysis demonstrates that one Standby Gas Treatment (SGT) subsystem remains capable of establishing the required Secondary Containment vacuum. The portion of TSTF-551 that modifies SR 3.6.4.1.3 is also incorporated into the JAFNPP TS SR 3.6.4.1.3 and is included in this License Amendment Request.

TS 5.5.8.c, "Ventilation Filter Testing Program (VTFP)"

The proposed change will incorporate new testing requirements for the Standby Gas Treatment System (SGTS) and the Control Room Emergency Ventilation Air Supply System (CREVAS) charcoal adsorbers. This change is necessary to make the testing requirements consistent with the revised design basis analysis.

Attachment 3 contains a marked-up version of the JAFNPP TS showing the proposed changes.

Attachment 4 provides the marked-up TS Bases pages which are being submitted for information only.

3.0 TECHNICAL EVALUATION

3.1 Introduction

The Current Licensing Basis (CLB) LOCA analysis utilizes the guidance of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites" (Reference 6.2), thus, conversion to the AST methodology for the LOCA accident will require a license amendment. In accordance with RG 1.183, implementation of the AST methodology for the LOCA accident constitutes full implementation of the AST methodology and future revisions of other dose calculations (Control Rod Drop, Main Steam Line Break, etc.) will need to implement the AST methodology.

The LOCA analysis evaluates the Exclusion Area Boundary (EAB), Low Population Zone (LPZ), and Control Room (CR) doses for JAFNPP using the methodology of Regulatory Guide 1.183.

JAFNPP currently implements the AST methodology for the Fuel Handling Accident only.

3.2 Attributes of the JAFNPP AST

The JAFNPP AST is based on one major accident (i.e., LOCA), hypothesized for the purposes of design analysis or consideration of possible accidental events that could result in hazards not exceeded by those from other accidents considered credible. The AST LOCA analysis addresses events that involve a substantial meltdown of the core with the subsequent release of appreciable quantities of fission products, the times and rates of appearance of radioactive fission products released into containment, the types and quantities of the radioactive species released, and the chemical forms of iodine released.

3.2.1 Accident Source Term

The inventory of fission products in the reactor core that is available for release to the containment is based on the maximum full power operation of the core with bounding values for fuel enrichment and fuel burnup. The core power used in the analyses is 102% of the current licensed thermal power level (i.e., 102% x 2536 MWt). The period of irradiation is of sufficient duration to allow the activity of dose-significant radionuclides to reach equilibrium or to reach maximum values. The core inventory is based on a Core Average Exposure (CAVEX) isotopic inventory for average core exposure of 12 to 43 GWD/MTU.

3.2.2 Release Fractions

The core inventory release fractions, by radionuclide groups, for the gap release and early in-vessel damage phases for the DBA LOCA listed in Table 1 of RG 1.183 (Reference 6.1) for boiling water reactors (BWRs) are used. These fractions are applied to the equilibrium core inventory developed for JAFNPP.

3.3 Timing of Release Phases

Table 4 of RG 1.183 tabulates the onset and duration of each sequential release phase for DBA LOCAs. The specified onset is the time following the initiation of the accident (i.e., time = 0). The early in-vessel phase immediately follows the gap release phase. The activity released from the core during each release phase is conservatively modeled as increasing in a linear fashion over the duration of the phase. The JAFNPP AST analysis conservatively assumes releases during each phase occur at the beginning of the release phase.

3.4 Radionuclide Composition

The elements and radionuclide groups listed in Table 5 of RG 1.183 are used in the JAFNPP AST analysis.

3.5 Chemical Form

Of the radioiodine released from the Reactor Coolant System (RCS) to the containment in a postulated accident, which includes releases from the gap and the fuel pellets, 95% of the iodine released is assumed to be cesium iodide (CsI), 4.85% elemental iodine, and 0.15% organic iodide. With the exception of elemental and organic iodine and noble gases, fission products are assumed to be in particulate form. However, the transport of these iodine species following release from the fuel may affect these assumed fractions. The accident-specific descriptions that follow provide additional details.

3.6 Key AST Input Parameters

Key baseline parameters, associated changes in the LOCA analysis parameters, and associated license change objectives are summarized in Table 3.6-1.

Table 3.6-1

General AST Parameter or Method

Parameter	Pre-AST Value	AST Value	Comments
Core Power Level	2,535.8 MWt + 2% margin = 2586.52 MWt	2,536 MWt + 2% margin = 2586.7 MWt	Licensed power level unchanged (rounded up)
Primary Containment Leakage	1.5 wt%/day	1.5wt%/day	Pre-AST Primary Containment Leakage Included MSIV Leakage
MSIV Leak Rate	46 scfh at 25 psig	200 scfh at 25 psig, or 270 scfh at 45 psig	Total for all four main steam lines at accident pressure
MSIV Leakage Pathway	Routed by MSLC system to SGTS	Release to Turbine Building with release to environment as unfiltered ground level release	New χ/Q values established
Main Steam Line Aerosol Deposition Model	Not Applicable	20-group probabilistic distribution of aerosol settling velocity for MSIV leakage based on AEB 98-03 (Reference 6.6) and including RIS 2006-04 (Reference 6.7) guidance	
Portion of Main Steam Lines Credited for Aerosol Deposition	Not Applicable	Credited between the reactor pressure vessel (RPV) nozzle and turbine stop valve (TSV) for MSIV leakage	
Main Steam Line Elemental Removal Model	Not Applicable	Time and temperature dependent removal efficiency based on J. E. Cline methodology (Reference 6.8)	

Table 3.6-1 General AST Parameter or Method			
Reduction in Airborne Activity Inside Containment	Not Credited	Credit taken for Drywell sprays in the removal of aerosols and elemental iodine based on Standard Review Plan (SRP) 6.5.2 guidance	
Standby Gas Treatment Filtration	90% HEPA 90% Charcoal	97% HEPA 97% Charcoal	TS Penetration requirements modified accordingly
Control Room Intake Filtration	90% HEPA 90% Charcoal	97% HEPA 97% Charcoal	TS Penetration requirements modified accordingly

3.7 Atmospheric Dispersion Factors (χ/Q)

RG 1.183 regulatory position 5.3 states that "Atmospheric dispersion values (χ/Q) for the EAB, the LPZ, and the Control Room that were approved by the staff during initial facility licensing or in subsequent licensing proceedings may be used in performing the radiological analyses identified by this guide." In accordance with this guidance, atmospheric dispersion values (χ/Qs) for the EAB, the LPZ, and the Control Room that were previously approved by the Staff are used in the LOCA analysis. These atmospheric dispersion values were based on meteorological data from 1985-1992 and provided χ/Qs for stack releases and ground level releases from the Reactor Building. These analyses were based on the guidance of Regulatory Guides 1.111 and 1.145.

Because the MSIV ground level Turbine Building release is a new release pathway, new χ/Qs were developed for the Control Room and Technical Support Center (TSC) for this release pathway. This analysis used the meteorological data from 1985-1992 to maintain consistency with the other atmospheric dispersion calculations of record and used the ARCON96 computer code. The 1985-1992 meteorological data is the same data used in the limited scope Alternate Source Term license amendment for the Fuel Handling Accident which was previously approved by the NRC (Reference 6.19). A benchmark was performed comparing the meteorological data from 2014-2018 to the 1985-1992 data, which confirmed the 1985-1992 data is still representative of current site conditions and remains adequate for calculating atmospheric dispersion factors. The atmospheric dispersion factors were developed using the NRC sponsored computer code ARCON96 and the guidance from Regulatory Guide 1.194.

Details of the atmospheric dispersion factors calculated for the MSIV ground level Turbine Building release are provided in Attachment 9.

3.8 Offsite Dose Consequences

The following assumptions are used in determining the TEDE for the maximum exposed individual at EAB and LPZ locations.

- The offsite dose is determined as a TEDE, which is the sum of the Committed Effective Dose Equivalent (CEDE) from inhalation and the Deep Dose Equivalent (DDE) from external exposure from all radionuclides that are significant with regard to dose consequences and the released radioactivity. The RADTRAD computer code performs this summation to calculate the TEDE.
- The offsite dose analysis uses the CEDE Dose Conversion Factors (DCFs) for inhalation exposure. Table 2.1 of Federal Guidance Report 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion" (Reference 6.9) provides tables of conversion factors acceptable to the NRC. The factors in the column headed "effective" yield doses corresponding to the CEDE.
- Because RADTRAD calculates DDE using whole body submergence in a semi-infinite cloud with appropriate credit for attenuation by body tissue, the DDE can be assumed nominally equivalent to the Effective Dose Equivalent (EDE) from external exposure. Therefore, the offsite dose analysis uses EDE in lieu of DDE DCFs in determining external exposure. Table III.1 of Federal Guidance Report 12, "External Exposure to Radionuclides in Air, Water, and Soil" (Reference 6.10), provides external EDE conversion factors acceptable to the NRC. The factors in the column headed "effective" yield doses corresponding to the EDE.
- The maximum EAB TEDE for any two-hour period following the start of the radioactivity release is determined and used in determining compliance with the dose acceptance criteria in 10 CFR 50.67.
- TEDE is determined for the most limiting receptor at the outer boundary of the LPZ and is used in determining compliance with the dose criteria in 10 CFR 50.67.
- No correction is made for depletion of the effluent plume by deposition on the ground.

3.9 Control Room Dose Consequence

The following dose contributions were considered in determining the TEDE for maximum exposed individuals located in the CR:

- Contamination of the Control Room atmosphere by the filtered intake of radioactive material contained in the radioactive plume released from the facility.
- Contamination of the Control Room atmosphere by the unfiltered infiltration of airborne radioactive material from areas and structures adjacent to the Control Room envelope.
- Radiation shine from the external radioactive plume released from the facility (i.e., external airborne cloud).
- Radiation shine from radioactive material in the Reactor Building.
- Radiation shine from radioactive material in systems and components external to the Control Room envelope (e.g., radioactive material buildup on ventilation filters).

The radioactivity releases and radiation levels used for the Control Room dose are determined using the same source term, transport, and release assumptions used for determining the EAB and the LPZ TEDE values.

No credit for potassium iodide pills or respiratory protection is taken.

3.10 Environmental Qualification (EQ)

Regulatory Position 6 of RG 1.183 (Reference 6.1) states: "The NRC staff is assessing the effect of increased cesium releases on EQ doses to determine whether licensee action is warranted. Until such time as this generic issue is resolved, licensees may use either the AST or the TID-14844 assumptions for performing the required EQ analyses. However, no plant

modifications are required to address the impact of the difference in source term characteristics (i.e., AST vs. TID-14844) on EQ doses." This generic issue has been resolved in a memo dated April 30, 2001 (ADAMS Accession No. ML011210348) and in Supplement 25 to NUREG-0933, Generic Issue 187. These documents showed that exposure to containment atmosphere sources based on traditional source term methodology and AST methodology, produced similar integrated doses and that the integrated AST doses from exposure to post-LOCA sump fluid did not exceed those based on TID-14844 assumptions until 145 days after an event at a BWR. The NRC staff concluded in the memo and NUREG-0933 that there was no clear basis for back-fitting the requirement to modify the design basis for EQ to adopt the AST and there would be no discernable risk reduction associated with such a requirement. The staff also concluded that longer term equipment operability issues associated with severe fuel damage accidents (with which the AST is associated) could also be addressed under accident management or plant recovery actions as necessary. A 145-day plant recovery period provides time to bring in significant external resources to supplement installed plant equipment.

Additionally, qualification of safety-related equipment from the radiation environment resulting from a DBA LOCA will continue to be based on the original TID-14844 based accident treatment resulting from a DBA. This practice is recognized as acceptable because of the minimal public health and safety benefit and substantial cost of re-evaluation of radiation environment characterization with AST based assumptions of core releases and timing. The changes in plant parameters in the LOCA calculation do not impact conclusions reached or the general underlying parameters related to Primary Containment sources, Secondary Containment airborne sources, and engineered safety feature (ESF) piping sources.

For the above reasons, it is not necessary to revise the JAFNPP equipment qualification program to convert to alternative source term assumptions and the JAFNPP EQ Program will continue to be based on the TID-14844 assumptions and methodology.

The increased allowable MSIV leakage was evaluated for potential impacts to the radiation environments utilized in the EQ program and it was determined that this change does not impact the doses currently evaluated in the EQ program. However, a new EQ evaluation is required because the MSLC system is no longer credited to prevent leakage into the Turbine Building post-LOCA. Previously this leakage pathway was not considered because the MSLC system, as described in UFSAR Section 9.19, directed any MSIV leakage to the SGTS. The impact of this change to any safety-related equipment in the Turbine Building was evaluated and it was determined that there are no safety-related components in the Turbine Building that would need to be added to the EQ program due to elimination of credit of the MSLC system. This conclusion is based on specific dose analyses of the safety-related cables and components in the Turbine Building general area or Electrical Switchgear Bays that are required post-LOCA. This analysis determined that if the cables and components are required to perform a safety-related function in the post-LOCA environment, the post-LOCA Total Integrated Dose (TID) to these cables and components is less than 1E4 Rads, and therefore, the components are located in a mild radiation environment post-LOCA.

3.11 Loss of Coolant Accident

Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 defines LOCAs as those postulated accidents that result from a loss of coolant inventory at rates that exceed the capability of the reactor coolant makeup system. Leaks up to a double-ended rupture of the largest pipe of the RCS are included. The LOCA is a conservative surrogate accident that is intended to challenge selective aspects of the facility design. Analyses are performed using a spectrum of break sizes to evaluate fuel and Emergency Core Cooling

System (ECCS) performance. Regarding radiological consequences, a large-break LOCA is assumed as the design basis case for evaluating the performance of release mitigation systems and the containment and for evaluating the proposed siting of a facility.

The JAFNPP LOCA was analyzed using a conservative set of assumptions and as-built design input parameters compatible for AST and the TEDE dose criteria. The numeric values of the critical design inputs were conservatively selected to assure an appropriate prudent safety margin against unpredicted events in the course of an accident and to compensate for large uncertainties in facility parameters, accident progression, radioactive material transport, and atmospheric dispersion.

The design inputs used for the design analyses were extracted from JAFNPP licensing basis documents, Updated Final Safety Analysis Report (UFSAR) sections, existing calculations, design basis documents, and regulatory guidance documents. Key parameters used in the LOCA analysis are summarized in Table 3.11-1.

3.11.1 Recirculation Line Rupture Vs Main Steam Line Rupture

Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 defines LOCAs as those postulated accidents that result from a loss of coolant inventory at rates that exceed the capability of the reactor coolant makeup system. Leaks up to a double-ended rupture of the largest pipe of the reactor coolant system are included. The LOCA, as with all DBAs, is a conservative surrogate accident that is intended to challenge selective aspects of the facility design. With regard to radiological consequences, a large-break LOCA is assumed as the design basis case for evaluating the performance of release mitigation systems and the containment response. Therefore, a recirculation line rupture is considered as the initiating event rather than a main steam line rupture.

Per the JAFNPP FSAR Update, Section 6.5.3.1, the DBA LOCA is defined as the instantaneous guillotine rupture of the recirculation pipe with displacement of both ends so that blowdown occurs from both ends. This LOCA leads to a specific combination of dynamic, quasi-static, and static loads in time. The thermal transient due to other postulated events including the steam line break inside the Drywell does not impose maximum challenge to Drywell pressure boundary and fuel integrity. The DBA LOCA results in the maximum core damage and fission product releases as shown in the RG 1.183, Table 1. Therefore, a recirculation line rupture is considered to be the limiting event with respect to radiological consequences.

Table 3.11-1
LOCA AST Analysis Parameters

Design Input Parameter	**Value Assigned**	
Containment Leakage Model Parameters		
Source Term		
Thermal Power Level	2536 MWt 2,586.72 MWt (includes 2% margin) used in analysis	
Rod Average Limit	≤62 GWD/MTU; and <6.3 kW/ft for burnup >54 GWD/MTU	
Core Inventory	CAVEX Isotopic Core Inventory Co-58 & Co-60 activities are obtained from RADTRAD User's Manual, Table 1.4.3.2-3	
Radionuclide Composition		
Group	**Elements**	Reference
Noble Gases	Xe, Kr	RG 1.183, Regulatory Position (RGP) 3.4, Table 5
Halogens	I, Br	
Alkali Metals	Cs, Rb	
Tellurium Group	Te, Sb, Se, Ba, Sr	
Noble Metals	Ru, Rh, Pd, Mo, Tc, Co	
Lanthanides	La, Zr, Nd, Eu, Nb, Pm, Pr, Sm, Y, Cm, Am	
Cerium	Ce, Pu, Np	
BWR Core Inventory Fraction Released into Containment (RG 1.183, Table 1)		
Group	**Gap Release Phase**	**Early In-Vessel Release Phase**
Noble Gases	0.05	0.95
Halogens	0.05	0.25
Alkali Metals	0.05	0.20
Tellurium Metals	0.00	0.05
Ba, Sr	0.00	0.02
Noble Metals	0.00	0.0025
Cerium Group	0.00	0.0005
Lanthanides	0.00	0.0002
Timing of Release Phase (RG 1.183 Table 4)		
Phase	**Onset**	**Duration**
Gap Release	2 min	0.5 hr
Early In-Vessel Release	0.5 hr	1.5 hr
Iodine Chemical Form		

Design Input Parameter	**Value Assigned**	
Aerosol (CsI) Elemental Organic	95% 4.85% 0.15%	RG 1.183, RGP 3.5
Activity Transport in Primary Containment		
Drywell Air Volume	154,476 ft^3 (150,000 ft^3 used in analysis)	
Suppression Chamber (Torus) Air Space Volume	112,428 ft^3 (1.09E+05 ft^3 used in analysis)	
Drywell plus Suppression Chamber Free Air Volume	259,000 ft^3	150,000 ft^3 + 109,000 ft^3
Containment Elemental Iodine and Particulate (Aerosol) Spray Removal Model	Standard Review Plan 6.5.2	
Containment Elemental Iodine and Particulate (Aerosol) Deposition/Plateout	Not credited	
Reactor Building (Secondary Containment) Free Volume	2,373,660 ft^3 2,370,000 ft^3 used in analysis (50% = 1,185,000 ft^3)	
Containment Leak Rate into Reactor Building	1.5 v%/day (0 to 24 hours). 0.75 v%/day (1 day to 30 days)	
Fraction of Containment Leakage that Bypasses the Standby Gas Treatment System	100% during 17.2-minute drawdown period (20 minutes used in analysis) 0% (following 20-minute drawdown period)	
Fraction of Reactor Building Available for Mixing	0.5	
SGTS Exhaust Rate	6,000 cfm $\pm$ 10% (6,600 cfm conservatively used in analysis)	
SGTS Exhaust Charcoal and HEPA Filter Efficiencies		
Elemental Iodine	97% (for the combined charcoal adsorbers in series)	
Organic Iodide	97% (for the combined charcoal adsorbers in series)	
Particulate Aerosols	97%	
Drywell Spray Parameters		
Volumetric Flow Rate of the Spray Pump	5,600 gpm	
Spray Initiation Time	20 min	
Spray Termination Time	4 hr. (assumed)	
Elevation of Upper Drywell Spray Header	311' – 3"	
Elevation of Lower Drywell Spray Header	287' – 6"	
Elevation of Bottom of Drywell Floor	256' – 6"	
ESF Leakage Model Parameters		

Design Input Parameter	**Value Assigned**	
Torus (Suppression Pool) Water Volume	106,442 ft^3 Conservative value of 106,000 ft^3 is used in the analysis	
Suppression Pool Activity (RG 1.183, RGP A.5.1, A.5.3 & Table 1)		
Halogens	Gap release = 0.05	Early In-vessel release = 0.25
Timing of Release Phase (RG 1.183, Table 4)		
Phase	**Onset**	**Duration**
Gap Release	2 min	0.5 hr
Early In-Vessel Release	0.5 hr	1.5 hr
ESF Leakage Rate	5 gpm TS allowable leakage 10 gal/min (= 2 × 5 gal/min allowable leakage rate) 0-30 days used in analysis	
ESF Leakage Initiation Time and Duration	0 to 30 days	
Suppression Pool Scrubbing	Not credited	
Long-Term Suppression Pool Water pH	>7.0	
Fraction of Iodine in ESF Leakage that becomes Airborne	0.10	
Chemical Form of Iodine in ESF Leakage		
Elemental Organic	97% 3%	
Fraction of Reactor Building Available for ESF Leakage Mixing	0.5	
Percentage of ESF Leakage that is filtered by the SGTS	0% (during 17.2-minute drawdown period – 20-minutes used in analysis) 100% (following 20-minute drawdown period)	
MSIV Leakage Model Parameters		
Total MSIV Leak Rate Through All Four Lines	270 scfh @ 45.0 psi	
MSIV Leak Rate Through One Line with MSIV Failed	135 scfh @ 45.0 psi	
MSIV Leak Rate Through Intact Lines	135 scfh @ 45.0 psi	
MS Piping Parameters Diameter Wall Thickness	 24" 1.219"	
Corrosion Allowance for Steam Line	0.12"	
Main Steam Line seismic boundary	The main steam lines have been seismically analyzed up to the TSVs	
Control Room Model Parameters		
Control Room Pressure Boundary Envelope Free Volume	116,640 ft^3 (101,000 ft^3 used in analysis to maintain consistency with previous calculations)	

Design Input Parameter	**Value Assigned**
CREVAS Filtration System Actuation Time Following a LOCA	30 minutes
Control Room Normal Operation Outside Air Intake through manual damper 70DMPR-105	1,920 cfm +10% = 2,112 cfm used in analysis
Control Room Normal Operation Exhaust Flow	1,120 cfm +10% = 1,232 cfm used in analysis
Control Room Normal Operation Leakage (Exfiltration)	800 cfm +10% = 880 cfm used in analysis
Control Room Emergency Ventilation Mode Filtered Air Intake Rate	1,000 cfm ±10% 900 cfm conservatively used in analysis
Control Room Emergency Ventilation Mode Air Recirculation Rate Though Filters	0 cfm No recirculation filter provided
Control Room Unfiltered Intake During Emergency Ventilation Mode - Post DMPR-105 Closure	238 scfm (includes ingress/egress in-leakage of 10 cfm) 300 cfm assumed in analysis
Unfiltered Air In-leakage with Control Room Isolated and no MOV Failures in Emergency Ventilation Mode	100 cfm
Control Room Leakage (Exfiltration) Flow After Isolation	1,300 cfm

CREVAS Emergency Ventilation Mode Intake Charcoal and HEPA Filter Efficiencies	
Elemental Iodine	97% (for the combined charcoal adsorbers in series)
Organic Iodide	97% (for the combined charcoal adsorbers in series)
Particulate Aerosols	97%

Control Room χ/Qs for Containment & ESF Leakage Release Via SGTS Stack Release	
Time	χ/Q (sec/m^3)
0 - 8 hr. 8 - 24 hr. 24 - 96 hr. 96 - 720 hr.	9.26E-07 6.75E-07 3.39E-07 1.26E-07

Control Room χ/Qs for Containment & ESF Leakage Release before SGTS Operational (Reactor Building (RB) Release)	
Time	χ/Q (sec/m^3)
0 - 2 hr. 2 - 8 hr. 8 - 24 hr. 24 - 96 hr. 96 - 720 hr	3.52E-03 3.31E-03 1.43E-03 7.73E-04 6.07E-04

Control Room χ/Qs for MSIV Leakage Release (TB Release)	
Time	χ/Q (sec/m^3)
0 - 2 hr. 2 – 8 hr. 8 - 24 hr. 24 - 96 hr. 96 - 720 hr.	4.52E-03 3.33E-03 1.19E-03 8.27E-04 6.40E-04

Control Room Occupancy Factors (RG 1.183, RGP 4.2.6)		
Time (Hr.)	%	
0-24 24-96 96-720	100 60 40	RG 1.183, RGP 4.2.6
Control Room Breathing Rate	3.5E-04 m^3/sec	RG 1.183, RGP 4.2.6
Control Room χ/Qs For MSIV Leakage Release MSIV for External Cloud Dose		
Time (hour)	χ/Q (sec/m^3)	
0 - 2 hr. 2 – 8 hr. 8 - 24 hr. 24 - 96 hr. 96 - 720 hr.	4.52E-03 3.33E-03 1.19E-03 8.27E-04*0.6 = 4.96E-04 6.40E-04*0.4 = 2.56E-04	
Offsite Dose Receptor Release Model Parameters		
EAB χ/Qs for Containment & ESF Leakage Release Via SGTS Stack Release		
Time (hrs)	χ/Q (sec/m^3)	
0-720	5.24E-05	
EAB χ/Q for MSIV Leakage Release (TB Release)		
Time (hrs)	χ/Q (sec/m^3)	
0-720	1.79E-04	
EAB Breathing Rate	3.5E-04 m^3/sec	RGP 4.1.3
LPZ χ/Qs For Containment & ESF Leakage Release Via SGTS Stack Release		
Time (hrs.)	χ/Q (sec/m^3)	
0 - 4 hr. 4 - 8 hr. 8 – 24 hr. 24 - 96 hr. 96 - 720 hr.	2.04E-05 2.17E-06 9.53E-07 3.90E-07 1.08E-07	
LPZ χ/Qs For MSIV Leakage Release (TB Release)		
Time (hrs.)	χQ (sec/m^3)	
0 - 8 hr. 8 – 24 hr. 24 - 96 hr. 96 - 720 hr.	2.00E-05 1.34E-05 5.59E-06 1.60E-06	
LPZ Breathing Rates		
Time (hrs.)	BR (m^3/sec)	
0-8 8-24 24-720	3.5E-04 1.8E-04 2.3E-04	RG 1.183, RGP 4.1.3

EAB, LPZ, CR, and TSC doses for JAFNPP were calculated using the guidance in RG 1.183 and the TEDE dose criteria. In addition to direct shine to Control Room operators, the DBA LOCA calculation was performed for the following post-LOCA release paths:

1. Containment Leakage
2. ESF Leakage
3. MSIV Leakage

In general, credit is taken only for those active accident mitigation features that are classified as safety related, are required to be operable by TS, are powered by emergency power sources, and are automatically actuated. Exceptions are the following:

- The SLC system is credited for Suppression Pool pH control. The SLC system is manually initiated. Additional information regarding the SLC system is provided in Attachment 8. This is a new manual action which will be implemented following implementation of this amendment request.

- The Residual Heat Removal (RHR) containment spray system is credited for fission product removal. The RHR containment spray system is manually initiated. Additional information regarding the RHR containment spray system is provided in Section 3.11.3. This is a new manual action which will be implemented following implementation of this amendment request.

- The Control Room CREVAS is manually initiated at 30 minutes after a LOCA. This manual action is currently incorporated in the post-accident plant procedures.

3.11.2 Source Term

The BWR core inventory fractions listed in Regulatory Guide 1.183 Table 1 are released into the containment at the release timing shown in RG 1.183 Table 4. Because the post-LOCA minimum suppression chamber water pH is greater than 7.0, the chemical form of radioiodine released into the containment is assumed to be 95% cesium iodide (CsI), 4.85% elemental iodine, and 0.15% organic iodide. With the exception of elemental and organic iodine and noble gases, the remaining fission products are assumed to be in particulate form. The CAVEX isotopic core inventory is based on a power level of 2536 MWt plus a 2.0% margin for average core exposure of 12 to 43 GWD/MTU. The rod average limit is ≤62 GWD/MTU and <6.3 kW/ft for burnup >54 GWD/MTU.

3.11.3 Post-LOCA Containment Leakage

For compartment and pathway modeling purposes, the radioactivity released from the fuel is assumed to mix instantaneously and homogeneously throughout the free air volume of the portion of Primary Containment (Drywell). The radioactivity release into the containment is assumed to terminate at the end of the early in-vessel phase, which occurs at the end of two hours after the onset of a LOCA. The reduction in containment leakage activity by dilution in the Reactor Building and removal by the SGTS filtration are credited. The SGTS ESF grade charcoal and HEPA filters are tested per JAFNPP Technical Specification (TS) 5.5.8 to maintain the desired performance during the emergency conditions. Generic Letter (GL) 99-02 (Reference 6.11) requires use of a safety factor of 2 to calculate the filtration efficiency to be credited in the design basis analysis.

To determine the MSIV leakage flow rates between the Drywell and the Reactor Building, the flow rate analysis is based on the Drywell volume during the first 2 hours of the LOCA, and then the combined Drywell plus suppression chamber air volume after 2 hours, at which time the containment volume (Drywell and suppression chamber) is expected to become well mixed following the restoration of core cooling. The thermal-hydraulic conditions in the Primary Containment are expected to be quite active due to a very high flow established between

Drywell and wetwell as a result of steaming and condensing phenomenon.

3.11.4 Suppression Pool pH

The maintenance of a Suppression Pool pH level above 7.0 is important in preventing re-evolution of iodine from the Suppression Pool water. Suppression Pool pH was evaluated over the 30-day duration of the DBA LOCA and demonstrated that pH will remain above 7.0. Therefore, no iodine conversion to elemental with re-evolution is considered in the LOCA calculation.

JAFNPP proposes to credit control of the pH in the Suppression Pool following a LOCA by means of injecting sodium pentaborate into the reactor core with the SLC system. The SLC system design was not previously credited for this safety function (i.e., pH control post-LOCA). The NRC review guidelines for assessing the acceptability of reliance on the SLC system to control the pH of the water in a BWR Suppression Pool following a LOCA are addressed in Attachment 8.

3.11.5 Reduction in Airborne Activity Inside Containment

Iodine removal by Suppression Pool scrubbing is not credited because the bulk core activity is released to containment well after the initial mass and energy release (see RG 1.183, Section A.3.5). Containment sprays are credited but the removal of the elemental iodine by natural or gravitational deposition on wetted surface areas inside containment due to the iodine adsorption is not credited. Credit for removing elemental iodine via natural deposition is minimal because the sprays are assumed to be activated at 20 minutes post-accident. The Decontamination Factor (DF) of elemental iodine for sprays is based on the Standard Review Plan (SRP) 6.5.2 guidance and is limited to a DF of 200.

RG 1.183, Appendix A, Section 3.3, allows licensees to take a reduction in airborne radioactivity in the containment by containment spray systems that have been designed and are maintained in accordance with SRP 6.5.2. TS SR 3.6.1.9.3 requires verification that each spray nozzle is unobstructed. The Technical Requirements Manual (TRM) indicates that once every 10 years, the spray headers and nozzles are air tested in the Drywell. This test verifies that a flow path exists through the spray header and nozzles and thereby verifies its operational status. The LCO to TS 3.6.1.9 requires, "Two RHR containment spray subsystems shall be OPERABLE." Operability of the Drywell spray subsystem of the low-pressure coolant injection/containment cooling system is also required to condense steam in the containment atmosphere post-accident. Condition B of TS 3.6.1.9 gives an 8-hour completion time to restore one RHR containment spray subsystem to OPERABLE status. This time is discussed in TS Basis B3.6.1.9 Action B.1 which states that the 8-hour Completion Time is based on this loss of function and is considered acceptable due to the low probability of a DBA and because of alternative methods to remove heat from the Primary Containment. FSAR Section 14.6.1.3.3 discusses the containment response without Drywell sprays in Case D. In this case, one RHR system pump draws suction from the Suppression Pool and discharges flow through the RHR system heat exchanger where it is cooled and then injected into the reactor vessel as LPCI flow. The flow removes energy from the fuel, spills into the Drywell and flows by gravity through the vents to the Suppression Pool. This scenario results in a higher containment pressure, but the pressure remains below the design pressure of 56 psi. Consequently, the 8-hour completion time is appropriate. The LOCA analysis assumes a Drywell spray flow of 5,600 gpm which is ensured by SR 3.6.1.9.2. As stated in SR 3.6.1.9.1, 3.6.9.1.2, and 3.6.9.1.3, the Surveillance Frequency is unchanged and is in accordance with the Surveillance Frequency Control Program like many other Surveillance Frequencies in the TS.

Section 4.8.4 and 4.8.5 of the JAFNPP FSAR update states that the containment spray mode of RHR is a safety function provided to limit temperature and pressure in the torus and Drywell after a LOCA. All containment cooling functions are manually initiated. Although radionuclide removal credit due to spray operation was not taken in the current design basis analyses, the Drywell spray mode of the RHR system is currently credited in the accident analysis for removing Drywell heat to lower Drywell temperature and pressures. Therefore, it can be credited for a dose mitigation function.

The JAFNPP containment analysis, assumes that the Suppression Pool cooling mode or containment spray mode is initiated at 10 minutes following a LOCA to ensure that the peak long-term Suppression Pool temperature does not exceed acceptable limits, but the LOCA dose analysis conservatively assumes initiation at 20 minutes. The JAFNPP Drywell spray nozzles have minimal direct impingement on components and containment walls and are spaced to ensure uniform coverage. A comparison between the NUREG-0800 Section 6.5.2 review items and the discussion of how these items are addressed by the JAFNPP containment spray system is provided in Attachment 6.

NUREG/CR-0009 (Reference 6.12) is a compilation of experimental and theoretical information used by the NRC to develop the accident analysis spray removal methodology. This report is primarily based on the containment systems experimental data described in Report BNWL-1457 (Reference 6.13). Per NUREG/CR-0009, aerosol removal by containment sprays is primarily due to the following mechanisms:

- Brownian diffusion
- Diffusiophoresis
- Interception
- Inertial impaction

In addition, NUREG/CR-0009 states that deposition of particles on wall surfaces (either containment walls or MSIV pipe walls) is due to the following mechanisms:

- Diffusion
- Thermophoresis
- Diffusiophoresis
- Turbulence in the wall boundary layer

The spray removal coefficients used in the revised JAFNPP LOCA analysis are based on the conservative values in Section 6.5.2 of NUREG-0800. The values assume that the ratio of a dimensionless collection efficiency to the average spray drop diameter should be 10 per meter initially (i.e., 1% efficiency for spray drops of 1 millimeter in diameter) and change abruptly to 1 spray drop per meter after the aerosol mass has been depleted by a factor of 50 (i.e., 98% of the suspended mass is 10 times more readily removed than the remaining 2%). Section J3.2.2 of NUREG-75/014 (Reference 6.14) provides the technical basis for the formula used in Section 6.5.2 of NUREG-0800 and in the revised analysis. NUREG-75/014 Section J3.2.2 also provides the correlation to determine spray lambdas. The spray lambda calculation assumes that diffusiophoresis is not a mechanism for spray removal. This is confirmed by Figure VII J-4 of NUREG-75/014.

The first order removal coefficient for particulate aerosols can be determined by the following equation from Standard Review Plan 6.5.2 (Reference 6.14, Section III.4.C.iv, page 6.5.2-13):

$$\lambda_p = \frac{3hFE}{2VD}$$

where,

λ_p = particulate aerosol removal coefficient by spray wash-out

h = spray drop fall height

F = spray flow

E/D = ratio of a dimensionless collection efficiency I to the average spray drop diameter (D)

V = containment building net free volume

SRP 6.5.2 also states on page 6.5.2-14 that "since the removal mechanisms for organic iodides and particulate iodines are significantly different from and slower than the mechanisms for elemental iodine, there is no need to limit the DF for organic iodides and particulate iodines." Therefore, the value of DF >50 for particulate iodines is calculated below. After the particulate DF reaches 50, the particulate removal efficiency is reduced by a factor of ten for the duration of spray operation in the dose consequence analysis. The particulate aerosol removal coefficients is 42.45 hr^{-1} but 30.0 hr^{-1} is conservatively used in the analysis. The removal efficiency will be reduced to 3.0 hr^{-1} when the DF is less than 50. Based on the equations in Standard Review Plan 6.5.2, the elemental iodine removal coefficient is conservatively assumed to be the same as the particulate aerosol removal coefficient. When the elemental iodine inventory is reduced by a factor of 200 the spray removal of elemental iodine is terminated.

The aerosol inventory is reduced by a factor of 50 at approximately 2.1 hours post-accident. The removal efficiency was reduced by a factor of ten to 3.0 hr^{-1} at this time until 4.00 hours post-accident when the Drywell spray is assumed to be terminated. The elemental iodine inventory is reduced by a factor of 200 at approximately 2.1 hours post-accident at which time removal of elemental iodine by Drywell spray is terminated. These modelling assumptions are conservative because the actual duration of the spray operation is expected to be longer.

Other mechanisms of particulate and iodine removal in the Drywell (i.e., Diffusion, Thermophoresis, Diffusiophoresis, and Turbulence in the wall boundary layer) are conservatively ignored.

3.11.6 Reactor Building

Leakage from the Primary Containment (Drywell) is assumed to mix in 50% of the Reactor Building (RB) free air volume. The 50% mixing effectively reduces the Reactor Building net free volume by 50% when modeled for the containment and ESF leakage releases. Both SGTS trains start on a LOCA initiation signal of either high Drywell pressure or low RPV water level. Flow to the SGTS is from above El 369' and below El 369'. Additional flows to the SGTS following initiation are: 1,200 cfm is drawn from each of elevations 262', 280'-6", 307', 334' and 351'-6", and 5,000 normal-10,000 max cfm is drawn from above elevation 369'-6". These distributed flows insure good mixing within the Reactor Building which justifies the 50% mixing assumption.

3.11.7 Containment Purging

Containment purging during a LOCA is not a credible event for JAFNPP. The purge valves, which close on a LOCA signal will be full closed before gap release begins at two minutes. Therefore, the release from containment purging is not analyzed per RG 1.183, Section A.7.

3.11.8 Post-LOCA ESF Leakage

The ESF systems that recirculate Suppression Pool water outside of the Primary Containment are assumed to leak during their intended operation. The ESF components are located in the Reactor Building. With the exception of noble gases, all fission products released from the fuel to the containment are assumed to instantaneously and homogeneously mix in the Suppression Pool water at the time of release from the core. The total ESF leakage from all components is assumed to be 5 gpm. This ESF leakage is doubled (RG 1.183, Section A.5.2) and assumed to start at the beginning of the gap release (time t = 2.0 minute after the onset of a LOCA). With the exception of iodine, all remaining fission products in the recirculating liquid are assumed to be retained in the liquid phase. Because the temperature of the recirculating liquid is less than 212ºF, 10% iodine activity in the ESF is assumed to become airborne. The reduction in ESF leakage activity by dilution in 50% of the Reactor Building volume and removal by the SGTS filtration are credited.

The radioiodine that is postulated to be available for release to the environment for the ESF leakage is assumed to be 97% elemental and 3% organic.

3.11.9 Post-LOCA MSIV Leakage

The four main steam lines, which penetrate the Primary Containment, are automatically isolated by the MSIVs in the event of a LOCA. There are two MSIVs on each steam line, one inside containment and one outside containment. The MSIVs are functionally part of the Primary Containment boundary and design leakage through these valves provides a leakage path for fission products to bypass the Secondary Containment and enter the environment as a ground-level release. The original design used the MSLC system to route this leakage to the SGTS. Following the initial blowdown of the RPV, steaming in the RPV carries fission products to the containment. When core cooling is restored, the steam and the ESF flow carry fission products from the core to the Primary Containment via the severed recirculation line, resulting in well-mixed RPV dome and containment fission product concentrations (based on RG 1.183, Appendix A, Section 6.1). The MSIVs are postulated to leak at a total design leak rate of 270 scfh at accident conditions. The radiological consequences from postulated MSIV leakage are analyzed and combined with the radiological consequences postulated for other fission product release paths to determine the total calculated radiological consequences from the LOCA.

3.11.10 Determination of MSIV Leak Rates

All four main steam line piping sections between the RPV nozzle and the Tubine Stop Valves (TSVs) used in the MSIV leakage release paths remain intact and are capable of performing their safety function during and following a Safe Shutdown Earthquake (SSE) and thereby comply with RG 1.183, Appendix A, Section 6.5 requirement. Based on the structural integrity and functional performance of the MSL piping up to the TSVs to withstand a SSE, the horizontal pipe surface area and volume up to the TSV is credited in the aerosol removal calculation. A total of 270 scfh MSIV leakage is assumed to occur as discussed below.

Of the total leakage, 135 scfh is assumed to be through the steam line with the "failed" MSIV. The "MSIV failed" line means that the inboard MSIV in one of the shortest MSLs fails to close and remains open during the accident, which extends the well mixed volume boundary from the

RPV nozzle to the outboard MSIV. This MSIV failure complies with a single active component failure requirement that results in the most limiting radiological consequences (RG 1.183, Section 5.1.2). The failure is non-specific and the consequences of the failure are that a single steam line is assumed to have a disproportionately high flow to artificially increase the total allowed MSIV leakage. Postulating a MSL break upstream of the inboard MSIV during a LOCA is considered another DBA event of a main steam line break inside the containment, which is neither credible nor feasible based on the qualification of the MSLs. The deposition removal of aerosol in the horizontal pipe, and the deposition removal of elemental iodine in both the horizontal and vertical pipes, are credited in the steam line between the RPV nozzle and TSVs.

The shortest of the remaining three intact steam lines is assumed to leak at 135 scfh in accordance with Regulatory Guide 1.183, Appendix A, Section 6.2, which states: "all of the MSIVs should be assumed to leak at the maximum leak rate above which the technical specifications would require declaring the MSIVs inoperable." For the shortest intact main steam line, one well-mixed volume is between the RPV nozzle and the inboard MSIV with a second volume between the inboard MSIV and the TSV. As in the "failed" line, the deposition removal of aerosol in the horizontal pipe, and the deposition removal of elemental iodine in both the horizontal and vertical pipes, are credited in the steam line between the RPV nozzle and the TSV. The remaining two intact steam lines are assigned a leakage of 0 scfh in the analysis. The remaining two intact steam lines are therefore not explicitly modeled in the analysis but are represented by the leakage through the second shortest main steam line. This is conservative because the shorter MSL length results in less removal.

Because the actual MSIV leak rate is reduced at the accident conditions due to the combined effects of compression (due to the high pressure) and expansion (due to the high temperature), the increase in the MSIV leak rates to the environment from the TSVs are calculated using the Ideal Gas Law and Drywell post-LOCA peak pressure and temperature. The MSIV leak rates are used in the analysis with the Total Effective Aerosol Removal Efficiency (TEARE) based on the horizontal pipe surface areas and the 20-group probabilistic distribution of settling velocities as discussed below.

A 50% reduction in the containment leakage and MSIV leakage 24 hours after the onset of a LOCA is credited in the analysis based on the reduction in pressure seen in the containment pressure response and the corresponding leakage flow rates at accident pressure, but the leak rate reduction is conservatively not credited in the calculation of aerosol deposition removal rates.

3.11.11 Settling Velocity for Aerosol Deposition in the Main Steam Lines

The AST LOCA dose analysis implements a 20-group probabilistic settling velocity distribution for MSIV leakage rather than using the AEB 98-03 single, median value, model. The 20-group probabilistic distribution methodology has been previously approved at Clinton (Reference 6.16), Limerick (Reference 6.17), and LaSalle (Reference 6.18). The same settling velocity probability distribution function shown in Equation 5 of AEB 98-03 is used to conservatively calculate aerosol settling velocity as follows:

$$u_s = \frac{\rho * d_e^2 * g * C_s}{18 * \mu * k}$$

Where:
u_s = settling velocity (cm/sec)
ρ = particle density (g/cm^3)
d_e = particle diameter (cm)

g = gravitational acceleration (cm/sec^2)
C_s = Cunningham Slip Factor (dimensionless)
μ = viscosity (g/cm-sec)
k = shape factor (dimensionless)

As stated in AEB 98-03, this equation is conservative because it does not consider such phenomena as thermophoresis, diffusiophoresis, flow irregularities, and hygroscopicity, which would all serve to increase the rate of aerosol deposition. As applied in this analysis, the settling velocity distribution is a function of this equation evaluated over a randomly sampled range of the three critical aerosol parameters (i.e., density/weight (logarithmically distributed), diameter/size (uniformly distributed), and shape (uniformly distributed)); and three constants (i.e., gravitational acceleration, Cunningham slip factor, and viscosity). The range of each particle parameter is discussed and given in AEB 98-03. A settling velocity distribution was generated using 10,000 randomly generated histories. Each of the 10,000 calculated settling velocities was given a probability of 1/10,000th, thereby making the cumulative fraction total equal to 1. A conservative 20-group step function was developed to approximate the continuous settling velocity distribution function calculated from the 10,000 histories. To ensure conservatism, this step-wise representation of the maximum settling velocity of a group is never allowed to exceed the value that defines the continuous probability curve.

Using the following from Equations 2 & 3 of AEB 98-03, settling velocity, settling area, volumetric flow rate, and the volume of the well-mixed region being modeled are used to calculate the aerosol particulate Release Fractions (RFs), based on initial activity concentration.

$$\eta_{filt} = 1 - \frac{C}{C_{in}} = 1 - \frac{1}{1 + \frac{\lambda_s * V}{Q}} = 1 - \frac{1}{1 + \frac{u_s * A}{Q}}$$

$$\lambda_s = \frac{u_s * A}{V}$$

Where:
η_{filt} = filter efficiency
C = concentration of nuclides in well-mixed volume (cm^{-3})
C_{in} = initial concentration of nuclides in well-mixed volume (cm^{-3})
λ_s = settling rate constant (sec^{-1})
V = volume of well-mixed region (cm^3)
Q = volumetric flow rate into well-mixed volume (cm^3/sec)
u_s = settling velocity (cm/sec)
A = settling area (cm^2)

For each of the 20 groups, aerosol particulate RFs from each node or volume are calculated and then turned into removal efficiencies (REs) by subtracting them from 1. The set of 20 removal efficiencies, calculated for each volume, is combined to form a set of 20 Net Release Fractions (NRFs) for a given MSL. The NRF associated with a given group is the product of the RE for each volume, or node, and the probability associated with that specific settling velocity group. The set of 20 NRFs is summed, and again subtracted from 1, to calculate a total effective aerosol removal efficiency. This process is performed for each MSL being modeled. Recalculating each distribution exiting a node or volume, then using that to calculate the distribution entering the next node or volume, yields the same TEARE. Therefore, one TEARE is applied to both well mixed volumes in each MSIV release pathway.

3.11.12 Aerosol Deposition in Horizontal Main Steam Lines

The "MSIV failed" line means that the inboard MSIV in one of the shortest MSLs fails to close and remains open during the accident, which instantly extends the well mixed volume boundary from the RPV nozzle to the outboard MSIV without breaching its structural integrity to perform its intended safety-related function of maintaining the reactor pressure boundary during and following a LOCA. This MSIV failure complies with a single active component failure requirement that results in the most limiting radiological consequences (RG 1.183, Section 5.1.2).

All four MSL headers are seismically qualified from the RPV nozzle to the seismic boundary break at the TSV; therefore, they are qualified to withstand the SSE, and they comply with the RG 1.183, Appendix A, Section 6.5 requirement to be credited for aerosol deposition. Therefore, the MSIV leakage pathway boundary is extended up to the TSV. For the AST analysis, the activity available for release via MSIV leakage is assumed to be the activity released into the Drywell for evaluating containment leakage (based on RG 1.183, Appendix A, Section 6.1).

A total of 270 scfh MSIV leakage is assumed to occur in the following manner:

1. MSIV failed MSL:

    - MSIV leakage is 135 scfh.
    - Horizontal piping surface area and volume of the MSL upstream of inboard MSIV are credited for aerosol deposition. A well-mixed volume in this line is between the RPV nozzle and outboard MSIV.
    - Horizontal piping surface area and volume of the MSL between the outboard MSIV and TSV are credited for aerosol deposition. A second well-mixed volume in this line is between the outboard MSIV and TSV.
    - The airborne elemental iodine in the MSIV release path is assumed to be adsorbed on the entire MSL piping volume surface area.
    - No credit is taken for an explicit holdup time in the MSIV failed MSL. Instead, two well-mixed volumes are modeled as described previously.

2. First shortest intact MSL:

    - MSIV leakage is 135 scfh.
    - Horizontal piping surface area and volume of the MSL between the RPV nozzle and inboard MSIV are credited for aerosol deposition. One well-mixed volume in this line is between the RPV nozzle and inboard MSIV.
    - Horizontal piping surface area and volume of the MSL between the inboard MSIV and TSV are credited for aerosol deposition. A second well-mixed volume in this line is between the inboard MSIV and TSV.
    - The airborne elemental iodine in the MSIV release path is assumed to be adsorbed on the entire MSL piping volume and surface area.
    - No credit is taken for an explicit holdup time in the intact MSLs. Instead, two well-mixed volumes are modeled as described previously.

3. Second shortest intact MSL:

    0 scfh through the third MSL is assumed.

4. Third shortest intact MSL:

   0 scfh through the fourth MSL is assumed.

3.11.13 Elemental Iodine Removal Rate

The NRC has consistently accepted the use of a 50% elemental iodine removal efficiency in the MSIV leakage release path for the entire duration of the accident based on the information used in AEB 98-03 (Reference 6.6) for AST license amendments. In order to address the possibility of the elemental iodine removal efficiency being lower than 50% during the first 24 hours to 48 hours of the accident, time-dependent elemental iodine removal efficiencies are established and used in the LOCA analysis.

The gaseous iodine tends to deposit on the piping surface by chemical adsorption. Elemental iodine, being the most reactive, has the highest deposition rate. The iodine deposited on the surface undergoes both physical and chemical changes and can be re-emitted as an airborne gas (re-suspension) or permanently fixed to the surface (fixation). RG 1.183, Appendix A, Section 6.5, indicates that Reference 6.8 (J.E. Cline paper) provides acceptable models for deposition of iodine on the pipe surface. The J.E. Cline methodology is used to calculate the time-dependent deposition and resuspension rates of elemental iodine for the MSIV release paths (including the effects of decreasing temperature) in the revised LOCA analysis. This methodology is used to determine the deposition and resuspension rates of elemental iodine as follows:

d_{si} = elemental iodine vapor deposition velocity (cm/s)

$d_{si} = e^{(2809/T - 12.80 (\pm 0.33))} = e^{(2809/T - 12.5)}$ (Reference 6.8, page 12)

Where T = gas temperature (°K)

The elemental iodine deposition rate

$$\lambda_{ed}(hr^{-1}) = \frac{\mathbf{dsi} * \mathbf{S} * \mathbf{3600}}{\boldsymbol{V}}$$ (Reference 6.8, page 4)

Where d_{si} = deposition velocity (m/sec)

S = surface area of deposition (m^2)

V = volume (m^3)

The bounding elemental iodine removal efficiency at the beginning of the time interval is used for the entire duration of the interval.

3.11.14 Control Room Model

The activities released from the various sources are diluted by atmospheric dispersion and carried to the Control Room air intake. The post-LOCA radioactive releases that contribute to the Control Room TEDE dose are as follows:

- Post-LOCA Containment Leakage
- Post-LOCA ESF Leakage
- Post-LOCA MSIV Leakage

The radioactivity from the above sources is assumed to be released into the atmosphere and transported to the Control Room air intake, where it may leak into the Control Room envelope or be filtered by the Control Room intake filtration system, prior to being distributed in the Control Room envelope. The input parameters used in the Control Room model are listed in Table 3.11-1.

There are three additional radioactive sources, external to the Control Room, which contribute to the Control Room dose are:

- Post-LOCA airborne cloud external to Control Room
- Post-LOCA Reactor Building shine to Control Room
- Post-LOCA Control Room Emergency Ventilation (CREV) filter shine

The dose contribution due to shine from these external sources is not a significant contributor to the total post-accident dose to the Control Room operator due to the 30-inch concrete walls and roof of the Control Room.

3.11.15 LOCA Analysis Results

The results of LOCA analysis using the AST methodology are summarized in the following table:

Post-LOCA Release Pathway /	**Post-LOCA TEDE Dose (Rem) Receptor Location**		
	Control Room	**EAB**	**LPZ**
Containment Leakage	1.06	5.12E-01 (occurs @ 3.2 hr)	2.97E-01
ESF Leakage	9.68E-02	9.51E-02 (occurs @ 9.8 hr)	3.49E-02
MSIV Leakage	3.41	2.21E-01 (occurs @ 8.4 hr)	2.69E-01
Containment Shine	9.56E-03	N/A	N/A
External Cloud	0.065	N/A	N/A
Control Room Filter Shine	Negligible	N/A	N/A
Total Dose	**4.64**	**0.83**	**0.60**
Allowable TEDE Limit	**5**	**25**	**25**

The LOCA analysis implements and complies with the guidance of RG 1.183 and will become the new design basis analysis following approval of the License Amendment Request by the NRC. The above results demonstrate that the total post-LOCA EAB, LPZ, and Control Room doses are within the allowable TEDE limits of 10 CFR 50.67.

3.11.16 Vital Area Accessibility

RG 1.183, Regulatory Position C.4.3, "Other Dose Consequences," states, in part, that: "The guidance provided in Regulatory Positions 4.1 and 4.2 should be used, as applicable, in re-assessing the radiological analyses identified in Regulatory Position 1.3.1, such as those in NUREG-0737 [Reference 2 of RG 1.183]. Design envelope source terms provided in NUREG-0737 should be updated for consistency with the AST. In general, radiation exposures to plant personnel identified in Regulatory Position 1.3.1 should be expressed in terms of TEDE."

EGC performed a review of its shielding study developed in response to NUREG-0737, Item 11.B.2 and submitted to the NRC in June 5, 1981 (Reference 6.20). This report documented the evaluated radiation exposure to plant personnel performing vital missions in support of accident mitigation and safe shutdown following a LOCA. The source terms were based on

traditional TID-14844 assumptions. The nuclide release fractions and release timing specified in the AST methodology outlined in RG 1.183, differ from those outlined in TID-14844/NUREG-0737. The difference in the release fractions has the potential to affect the dose rates in vital areas where piping containing post-LOCA sump fluid are located.

NUREG-0933 (Reference 6.21), Generic Issue 187, showed that exposure to containment atmosphere sources based on traditional source term methodology and AST methodology, produced similar integrated doses and that the integrated AST doses from exposure to post-LOCA sump fluid did not exceed those based on TID-14844 assumptions until 145 days after an event at a BWR.

Based on NUREG-0933, EGC concludes that the differences in the release fractions associated with AST methodology would have little impact on the local dose rates during the 30-day post-LOCA mission time. Since the local dose rates are not expected to be significantly impacted by AST during the first 30 days following a LOCA, the conclusions of the shielding study, with respect to operator exposure, would not significantly change by expressing the mission doses in terms of TEDE.

However, removal of the MSLC system introduces higher post-LOCA doses in the Turbine Building due to the increased MSIV leakage now having a travel path to the Turbine Building. In order to minimize post-LOCA doses in the Turbine Building and to ensure all releases in the Turbine Building are monitored, the Turbine Building ventilation system must be restarted (if it trips due to a loss of offsite power (LOOP) coincident with a LOCA). This action is already part of the plant response to high gaseous radiation signals in the Reactor Building, Refuel Floor, Turbine Building, or Radwaste Building per site emergency procedures. The post-LOCA Turbine Building dose analysis assumes that the Turbine Building ventilation system is restarted within 8 hours of initiation of the LOCA. This is conservative as JAFNPP is a 4-hour Station Black Out (SBO) plant. Based on the analysis, which assumes all MSIV leakage enters the Turbine Building and does not escape until the Turbine Building ventilation system is restarted at 8 hours, the Turbine Building radiation levels would be high enough to trigger the high radiation trip of the ventilation system. Therefore, it may be necessary for an operator to enter the Turbine Building to remove two relays from Panel 67HV-1 located on the south end of the Turbine Building elevation 292' in order to override the high radiation trip of the Turbine Building ventilation system. Site emergency procedures already direct operators to take this action, if needed. The dose an operator could receive post-LOCA to perform the necessary actions to override the high radiation trip of the Turbine Building ventilation system was calculated and determined to be less than 5 Rem, which is acceptable for an emergency response.

3.12 Applicability of TSTF-551 Safety Evaluation

Prior to this License Amendment Request, the JAFNPP LOCA radiological dose consequence analysis assumed that the Secondary Containment pressure was below atmospheric pressure at the time the LOCA event occurs. It also assumed the SGTS automatically starts and maintains the negative pressure such that no exfiltration occurs during the event. As a result, of the previous calculation assumptions, TSTF-551 did not apply.

A new plant-specific calculation was performed to determine the Reactor Building drawdown time. The drawdown calculation was performed using GOTHIC 8.2 to calculate the Secondary Containment temperature and pressure response. GOTHIC error notices pertaining to version 8.2 were reviewed and none were identified which are applicable to the model used in the drawdown analysis. The following RG 1.183 (Reference 6.1), Appendix A, Section 4.3 assumptions were included in the drawdown calculation:

1. The outside air temperature is assumed to remain constant at the summer design temperature of 93^0F during summer conditions and at -10^0F during winter conditions (Attachment 6). Per RG 1.183 the ambient temperature should be the 1-hour average value that is exceeded only 5% (for summer conditions) and 95% (for winter conditions) of the total number of hours in the data set. The assumed temperatures conservatively bound the summer 1% and winter 99% values of 85^0F and 2^0F, respectively, for the JAFNPP area (i.e. Syracuse, New York).
2. A maximum wind speed of 20 mph was assumed for the analysis. Per RG 1.183, the wind speed to be assumed is the 1-hour average value that is exceeded only 5% of the total number of hours in the data set. The assumed wind speed is equal to the 5% wind speed of 20 mph for Syracuse, New York.

Four different cases were analyzed with the GOTHIC model to envelop the assumed environmental conditions: 1) summer with no wind, 2) summer with wind, 3) winter with no wind, and 4) winter with wind. The following sequence of major events are postulated for this calculation:

1. The plant is initially in normal operation with the Reactor Building ventilation system maintaining the specified Reactor Building vacuum pressure.
2. A DBA LOCA is assumed to occur with a concurrent LOOP. (Note: LOOP conditions are conservatively assumed for SGTS operation while Reactor Building heat loads and Reactor Building ventilation flow rates during isolation valve closure are conservatively based on no LOOP conditions to give a conservative drawdown time that bounds both LOOP and no LOOP conditions.)
3. The Secondary Containment is isolated by closing the reactor building ventilation system isolation valves and the Reactor Building ventilation system above refueling floor exhaust fans are tripped.
4. The Diesel Generators start and only one of the SGTS's is loaded onto Diesel Generator bus at 11 seconds after the LOCA occurs after a single failure of the second SGTS's.
5. The SGTS fan starts and the isolation valves are fully open after at 21 seconds after the LOCA occurs.
6. The SGTS flow rate is controlled to a minimum of 5600 cfm after the SGTS isolation valves are fully open.

The results of this drawdown calculation determined that the average differential pressure inside the JAFNPP Reactor Building after a design basis LOCA will be less than the Technical Specification criteria of -0.25 in wg with respect to the outside air pressure after a drawdown time of 1032 seconds (17.2 minutes) under the limiting outside air temperature and wind conditions conforming with the RG 1.183 guidance. Once the drawdown period is complete and the required negative Reactor Building pressure is re-established, there will be no unfiltered exfiltration from the Reactor Building.

JAFNPP has confirmed that the brief, inadvertent, simultaneous opening of both an inner and outer personnel access door during normal entry and exit conditions, and their prompt closure by normal means, is bounded by the revised radiological dose consequence analysis. In the unlikely event that an accident would occur when both personnel access doors are open for entry or exit, the brief time required to close one of the doors is small compared to the 1032 seconds (17.2 minutes) positive pressure period assumed in the accident analysis for reducing the post-accident Secondary Containment pressure to -0.25 inch of vacuum water gauge and will not result in an increase in any onsite or offsite dose.

Considering the new drawdown analysis and revised LOCA dose consequence results, EGC has determined that TSTF-551 is now fully applicable to JAFNPP. EGC has reviewed the safety evaluation for TSTF-551 provided to the Technical Specifications Task Force in a letter dated September 21, 2017 (Reference 6.23). This review included a review of the NRC evaluation, as well as the information provided in TSTF-551. EGC has concluded that the justifications presented in TSTF-551 and the safety evaluation prepared by the NRC are applicable to JAFNPP and justify this amendment for the incorporation of the changes to the JAFNPP TS.

The JAFNPP SR 3.6.4.1.3 was modified to permit Secondary Containment access openings to be open for entry and exit in accordance with TSTF-551. SR 3.6.4.1.3 was previously modified in an NRC Safety Evaluation Report dated July 19, 2018 to allow for brief, inadvertent, simultaneous opening of redundant Secondary Containment personnel access doors during normal entry and exit conditions.

3.13 NRC Regulatory Issue Summary 2006-04

The NRC issued Regulatory Issue Summary (RIS) 2006-04 (Reference 6.7) to update licensees on experience with implementation of ASTs in DBA radiological analyses. In the RIS, the NRC stated the expectation that licensees review the information for applicability to their facilities and consider actions, as appropriate. In particular, the information in the RIS should be used to support implementation of an AST through a License Amendment Request to aid in the reduction of requests for additional information.

EGC has evaluated the issues discussed in the RIS. Table 3.12-1 provides a summary of issues raised in the RIS, as well as EGC's comments to the issues in light of the License Amendment Request to adopt AST methodology at JAFNPP.

Table 3.12-1
NRC RIS 2006-04

RIS Issue	EGC Comments
1. Level of Detail Contained in LARs	
The AST amendment request should provide justification for each individual proposed change to the TS.	Appropriate justification has been provided (see Section 2.2).
The AST amendment request should identify and justify each change to the licensing basis accident analyses.	The AST amendment request identifies and justifies each change to the licensing basis accident analyses (see Section 3.11).
The AST amendment request should contain enough details (e.g., assumptions, computer analyses input and output) to allow the NRC staff to confirm the dose analyses results in independent calculations.	The AST amendment request contains sufficient details (e.g., assumptions, computer analyses input and output) to allow the NRC staff to produce confirmatory analyses. Details are provided in Section 3.11 and Attachment 6.

Table 3.12-1 **NRC RIS 2006-04**	
RIS Issue	**EGC Comments**
In the case of RAIs and supplements, licensees should identify the most current analyses, assumptions, and TS changes in their submittal and supplements to the submittal.	Not applicable.
2. MSIV Leakage and Fission Product Deposition in Piping	
Any licensee who chooses to reference these AEB 98-03 assumptions should provide appropriate justification that the assumptions are applicable to their particular design.	This justification has been provided (see Sections 3.11.11, 3.11.12 and 3.11.13).
If appropriate justification is provided, the Suppression Pool free air volume may be included provided there is a mechanism to ensure mixing between the Drywell and wetwell.	Mixing between the Drywell and the Suppression Pool free air volume is assumed after the termination of the fuel radioactivity release (end of gap and early in-vessel release phases) at two hours. At this point, the radioactivity is assumed to be uniformly distributed throughout the Drywell and the Suppression Pool free air volume in accordance with RG 1.183 Regulatory Position 3.7.
For aerosol settling, only horizontal sections of piping should be credited. The effective settling area should be calculated as the length of horizontal piping multiplied by the pipe diameter.	Only horizontal sections of piping are credited for aerosol settling. The effective settling area is calculated as the length times diameter.
Given the large uncertainty associated with iodine behavior in piping, deposition of gaseous iodine in piping should be omitted unless appropriate justification is provided (including providing estimates of the thermal and hydraulic conditions in the piping).	RG 1.183, Appendix A, Section 6.5, indicates that Reference 6.8 (J.E. Cline paper) provides acceptable models for deposition of iodine on the pipe surface. Justification is provided in Section 3.11.3.
3. Control Room Habitability	
Use of non-ESF ventilation systems during a DBA should not be assumed unless the systems have emergency power and are part of the Ventilation Filter Testing Program in	Non-ESF ventilation systems are not credited for Control Room habitability.

Table 3.12-1 **NRC RIS 2006-04**	
RIS Issue	**EGC Comments**
Section 5 of the TS.	
Generic Letter (GL) 2003-01, "Control Room Habitability" requested licensees to confirm the ability of their facility's CR to meet applicable habitability regulatory requirements. The GL placed emphasis on licensees confirming that the most limiting unfiltered in-leakage into the CRE was not greater than the value assumed in the DBA analyses.	The unfiltered in-leakage into the Control Room assumed in the analysis was a bounding value based on Tracer Gas Test results from 2004, 2011, and 2018.
Some AST amendment requests proposed operating schemes for the CR and other ventilation systems that affect areas adjacent to the CRE and are different from the manner of operation and performance described in the response to the GL without providing sufficient justification for the proposed changes in the operating scheme.	No changes to the operating scheme for the CREVAS System are proposed.
4. Atmospheric Dispersion	
Licensees have the option to adopt the generally less conservative (more realistic) updated NRC staff guidance on determining χ/Q values in support of design basis CR radiological habitability assessments provided in RG 1.194.	The MSIV leakage represents a new release pathway requiring new χ/Q values (see Attachment 9) for the Control Room. The new χ/Q analysis complied with the methodology of RG 1.194.
Regulatory positions on χ/Q values for offsite (i.e., EAB and LPZ) accident radiological consequence assessments are provided in RG 1.145.	Releases from the Primary Containment are into the Reactor Building. For EAB and LPZ doses, releases are assumed to be elevated releases as was done in the previously approved atmospheric dispersion analyses.
The submittal should include a site plan showing true north and indicating locations of all potential accident release pathways and CR intake and unfiltered in-leakage pathways (whether assumed or identified during in-leakage testing).	These drawings can be provided upon request. Attachment 9 provides detailed information related to the new MSIV leakage χ/Q geometry.
The submittal should include a justification for	Filtered intake and unfiltered in-leakage are

Table 3.12-1 NRC RIS 2006-04	
RIS Issue	**EGC Comments**
using CR intake χ/Q values for modeling the unfiltered in-leakage, if applicable.	assumed to be at the location of the filtered intake and the Control Room intake χ/Q values are used. This is acceptable because the filtered intake location is near the Control Room envelope.
The submittal should include a copy of the meteorological data inputs and program outputs along with a discussion of assumptions and potential deviations from staff guidelines. Meteorological data input files should be checked to ensure quality (e.g., compared against historical or other data and against the raw data to ensure that the electronic file has been properly formatted, any unit conversions are correct, and invalid data are properly identified).	The meteorological data used for the new MSIV leakage χ/Q for the Control Room intake were the same approved meteorological data which was used during the Fuel Handling Accident AST submittal. The meteorological data used was from 1985-1992. There were no deviations from staff guidelines. Copies of the ARCON96 computer program inputs and outputs are provided in Attachment 9.
When running the CR atmospheric dispersion model ARCON96, two or more files of meteorological data representative of each potential release height should be used if χ/Q values are being calculated for both ground level and elevated releases.	The Control Room atmospheric dispersion model using ARCON96 for the MSIV leakage pathway was based on a ground level release so only one set of meteorological data was used.
In addition, licensees should be aware that (1) two levels of wind speed and direction data should always be provided as input to each data file, (2) fields of "nines" (e.g., 9999) should be used to indicate invalid or missing data, and (3) valid wind direction data should range from 1° to 360°.	The data used in the Control Room atmospheric dispersion model using ARCON96 for the MSIV leakage pathway used previously reviewed and approved meteorological data which was used during the Fuel Handling Accident AST submittal. The meteorological data used was from 1985-1992.
Licensees should also provide detailed engineering information when applying the default plume rise adjustment cited in RG 1.194 to CR χ/Q values to account for buoyancy or mechanical jets of high energy releases.	The Control Room atmospheric dispersion model using ARCON96 for the MSIV leakage pathway was a ground level release and no plume rise adjustment was considered.
This information should demonstrate that the minimum effluent velocity during any time of	No plume rise adjustment was considered.

Table 3.12-1 **NRC RIS 2006-04**	
RIS Issue	**EGC Comments**
the release over which the adjustment is being applied is greater than the 95th percentile wind speed at the height of release.	
When running the offsite atmospheric dispersion model PAVAN, two or more files of meteorological data representative of each potential release height should be used if χ/Q values are being calculated for pathways with significantly different release heights (e.g., ground-level versus elevated stack).	Atmospheric dispersion values for the EAB and the LPZ that were previously approved by the Staff are used in the LOCA analysis. These χ/Q values were for Reactor Building releases and SGTS releases.
The joint frequency distributions of wind speed, wind direction, and atmospheric stability data used as input to PAVAN should have a large number of wind speed categories at the lower wind speeds in order to produce the best results.	In accordance with RG 1.183, Section 5.3 χ/Qs for the EAB, the LPZ, and the Control Room that were previously approved by the Staff are used in the LOCA analysis.
5. Modeling of ESF Leakage	
The radiological consequences from the postulated ESF leakage should be analyzed and combined with consequences postulated for other fission product release paths to determine the total calculated radiological consequences from the LOCA.	Dose consequences due to ESF leakage were determined and added to the doses due to other release pathways.
Licensees should account for ESF leakage at accident conditions in their dose analyses so as not to underestimate the release rate.	ESF leakage was evaluated as two times the allowable leakage.
In Appendix A to RG 1.183, Regulatory Position 5.5, the NRC staff provided a conservative value of 10 percent as the assumed amount of iodine that may become airborne from ESF leakage that is less than 212°F.	The temperature of the leakage does not exceed 212°F so flashing will not occur and the amount of iodine that may become airborne is 10%.
Figure 3.1 in NUREG/CR-5950 can be used to quantify the amount of elemental iodine as a function of the sump water pH and the concentration of iodine in the solution. In	The iodine isotopes considered included both stable and radioactive isotopes.

Table 3.12-1 **NRC RIS 2006-04**	
RIS Issue	**EGC Comments**
some cases, however, licensees have misapplied this figure. Rather than using the total concentration of iodine (i.e., stable and radioactive), licensees based their assessment on only the radioactive iodine in the sump water. By using only the radioactive iodine, licensees have underestimated how much iodine evolves during post-accident conditions.	
6. Release Pathways	
Changes to the plant configuration associated with a License Amendment Request (e.g., an "open" containment during refueling) may require a reanalysis of the design basis dose calculations. A request for TS modifications allowing containment penetrations (i.e., personnel air lock, equipment hatch) to be open during refueling cannot rely on the current dose analysis if this analysis has not already considered these release pathways. Releases from personnel air locks and equipment hatches exposed to the environment and containment purge releases prior to containment isolation need to be addressed.	No changes to the plant configuration (other than removal of the MSLC system) are considered in this amendment request.
Licensees are responsible for identifying all release pathways and for considering these pathways in their AST analyses, consistent with any proposed modification.	All applicable release pathways have been considered. These include containment leakage, ESF leakage and MSIV leakage pathways.
7. Primary to Secondary Leakage	
Some analysis parameters can be affected by density changes that occur in the process steam. The NRC staff continues to find errors in submittals concerning the modeling of primary to secondary leakage during a postulated accident. This issue is discussed in Information Notice (IN) 88-31, "Steam Generator Tube Rupture Analysis Deficiency" and Item 3.f in RIS 2001-19. An acceptable	These specific issues are not applicable to boiling water reactors.

Table 3.12-1 **NRC RIS 2006-04**	
RIS Issue	**EGC Comments**
methodology for modeling this leakage is provided in Appendix F to RG 1.183, Regulatory Position 5.2.	
8. Elemental Iodine DF	
Appendix B to RG 1.183 provides assumptions for evaluating the radiological consequences of an Fuel Handling Accident. If the water depth above the damaged fuel is 23 feet or greater, Regulatory Position 2 states that "the decontamination factors for the elemental and organic species are 500 and 1, respectively, giving an overall effective decontamination factor of 200." However, an overall DF of 200 is achieved when the DF for elemental iodine is 285, not 500.	This accident is not included in this submittal because the Fuel Handling Accident was previously submitted and approved (Reference 6.22) as a partial implementation of the AST methodology.
9. Isotopes Used in Dose Assessments	
For some accidents (e.g., main steam line break and rod drop), licensees have excluded noble gas and cesium isotopes from the dose assessment. The inclusion of these isotopes should be addressed in the dose assessments for AST implementation.	The standard 60-isotope RADTRAD inventory file was used for the LOCA analysis, which includes noble gas and cesium isotopes. The main steam line break and control rod drop accidents are not evaluated as part of this licensing submittal.
10. Definition of Dose Equivalent Iodine-131	
In the conversion to an AST, licensees have proposed a modification to the TS definition of Dose Equivalent Iodine-131. Although different references are available for dose conversion factors, the TS definition should be based on the same dose conversion factors that are used in the determination of the reactor coolant dose equivalent iodine curie content for the main steam line break and steam generator tube rupture accident analyses.	The main steam line break accident is not being revised at this time; therefore, the TS definition of Dose Equivalent I-131 is not being changed.
11. Acceptance Criteria for Offgas or Waste Gas System Release	
As part of full AST implementation, some	This accident is not included in this submittal.

Table 3.12-1 NRC RIS 2006-04	
RIS Issue	**EGC Comments**
licensees have included an accident involving a release from their Offgas or Waste Gas system. Any licensee who chooses to implement AST for an Offgas or Waste Gas system release should base its acceptance criteria on 100 mrem TEDE. Licensees may also choose not to implement AST for this accident and continue with their existing analysis and acceptance criteria of 500 mrem whole body.	
12. Containment Spray Mixing	
Some plants with mechanical means for mixing containment air have assumed that the containment fans intake air solely from a sprayed area and discharge it solely to an unsprayed region or vice versa. Without additional analysis, test measurements or further justification, it should be assumed that the intake of air by containment ventilation systems is supplied proportionally to the sprayed and unsprayed volumes in containment.	Credit for mechanical mixing of containment air is not considered.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The NRC's traditional methods (i.e., prior to the AST) for calculating the radiological consequences of design basis accidents are described in a series of Regulatory Guides and SRP chapters. That guidance was developed to be consistent with the TID-14844 source term and the whole body and thyroid dose guidelines stated in 10 CFR 100.11. Many of those analysis assumptions and methods are inconsistent with the ASTs and with the TEDE criteria provided in 10 CFR 50.67. Regulatory Guide 1.183 provides assumptions and methods that are acceptable to the NRC for performing design basis radiological analyses using an AST. This guidance supersedes corresponding radiological analysis assumptions provided in the older Regulatory Guides and SRP chapters when used in conjunction with an approved AST and the TEDE criteria provided in 10 CFR 50.67.

Also, the NRC published SRP Section 15.0.1 (Reference 6.3) to address AST. SRP Section 15.0.1 provides guidance on which NRC branches will review various aspects of an AST License Amendment Request, but otherwise is consistent with the guidance found in Regulatory Guide 1.183. The plant-specific information provided in this License Amendment Request addresses the guidance in SRP 15.0.1.

4.2 No Significant Hazards Consideration

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (EGC) requests an amendment to Renewed Facility Operating License No. DPR-59 for James A. FitzPatrick (JAFNPP). Specifically, EGC is requesting a revision to the Technical Specifications (TS) and licensing and design bases to reflect the application of Alternative Source Term (AST) assumptions and changes associated with TSTF-551.

EGC has evaluated the proposed change against the criteria of 10 CFR 50.92(c) to determine if the proposed changes result in any significant hazards. The following is the evaluation of each of the 10 CFR 50.92(c) criteria:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The implementation of AST assumptions has been evaluated in revisions to the analysis of the Loss-of-Coolant Accident (LOCA).

Based upon the results of these analysis, it has been demonstrated that, with the requested changes, the dose consequences of this limiting event are within the regulatory requirements and guidance provided by the NRC for use with the AST. The regulatory requirements and guidance is presented in 10 CFR 50.67, "Accident source term," and associated NRC Regulatory Guide 1.183 and Standard Review Plan Section 15.0.1. The AST is an input to calculations used to evaluate the consequences of an accident, and does not, by itself, affect the plant response, or the actual pathway of the radiation released from the fuel. It does, however, better represent the physical characteristics of the release, so that appropriate mitigation techniques may be applied.

The proposed changes are also consistent with the guidance of Technical Specifications Task Force Traveler (TSTF) 551, "Revise Secondary Containment Surveillance Requirements," Revision 3, which was approved by the NRC on September 21, 2017.

The equipment affected by the proposed change is mitigative in nature and relied upon after an accident has been initiated. Application of the AST does not involve any physical changes to the plant design and is not an initiator of an accident. Removal of the MSLC system in not required by the four criteria specified in 10 CFR 50.36. As a result, the proposed changes do not affect any of the parameters or conditions that could contribute to the initiation of any accidents. As such, removal of operability requirements during the specified conditions will not significantly increase the probability of occurrence for an accident previously analyzed. Since design basis accident initiators are not being altered by adoption of the AST analyses, the probability of an accident previously evaluated is not affected. Also, the consequences of previously evaluated accidents remain within the regulatory limits.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed and there are no physical modifications to existing equipment

associated with the proposed change). The proposed changes, effectively increasing the allowable main steam isolation valve (MSIV) leakage and crediting the Standby Liquid Control (SLC) system for LOCA mitigation do not create initiators or precursors of a new or different kind of accident. Similarly, it does not physically change any structures, systems, or components involved in the mitigation of any accidents. Thus, no new initiators or precursors of a new or different kind of accident are created.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

Safety margins and analytical conservatisms have been evaluated and have been found acceptable. The analyzed event has been carefully selected and margin has been retained to ensure that the analysis adequately bounds postulated event scenarios. The dose consequences due to design basis accidents comply with the requirements of 10 CFR 50.67 and the guidance of Regulatory Guide 1.183.

The proposed change is associated with the implementation of a new licensing basis for JAFNPP design basis accidents. Approval of the change from the original source term to a new source term taken from Regulatory Guide 1.183 is being requested. The results of the accident analysis, revised in support of the proposed license amendment, are subject to revised acceptance criteria. The analysis has been performed using conservative methodologies, as specified in Regulatory Guide 1.183. Safety margins have been evaluated and analytical conservatism has been utilized to ensure that the analysis adequately bounds the postulated limiting event scenario. The dose consequences of this design basis accident remain within the acceptance criteria presented in 10 CFR 50.67 and Regulatory Guide 1.183.

The proposed change continues to ensure that the doses at the exclusion area boundary and low population zone boundary, as well as the Control Room, are within corresponding regulatory limits.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

4.3 Conclusion

Based on the above evaluation, EGC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92, paragraph (c), and accordingly, a finding of no significant hazards consideration is justified.

In conclusion, based on the considerations discussed above: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

The proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation," or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational

radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

6.1. Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," dated July 2000 (ADAMS Accession No. ML003716792).
6.2. U.S. Atomic Energy Commission, Technical Information Document (TID) 14844, "Calculation of Distance Factors for Power and Test Reactor Sites," dated March 23, 1962.
6.3. NRC Standard Review Plan 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," Revision 0, dated July 2000.
6.4. NUREG/CR-6604, "RADTRAD: A Simplified Model for Radionuclide Transport and Removal and Dose Estimation," S. L. Humphreys, et al., (originally published April 1998) (ADAMS Accession No. ML15092A284).
6.5. NUREG-1465, "Accident Source Terms for Light-Water Nuclear Power Plants," dated February 1995.
6.6. AEB 98-03, "Assessment of Radiological Consequences for the Perry Pilot Plant Application Using the Revised (NUREG-1465) Source Term," December 9, 1998.
6.7. RIS 2006-04, "NRC Regulatory Issue Summary 2006-04, Experience with Implementation of Alternate Source Terms," March 7, 2006.
6.8. Cline, J.E. "MSIV Leakage – Iodine Transport Analysis," SAIC, August 20, 1990 (ADAMS Accession Number ML003683718).
6.9. Federal Guidance Report 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," 1989.
6.10. Federal Guidance Report 12, "External Exposure to Radionuclides in Air, Water, and Soil," 1993.
6.11. U.S. NRC, "Laboratory Testing of Nuclear-Grade Activated Charcoal," NRC Generic Letter 99-02, dated June 3, 1999 and corresponding Errata dated August 23, 1999.
6.12. NUREG/CR-0009, "Technological Bases for Models of Spray Washout of Airborne Contaminants in Containment Vessels," A. K. Postma, R. R. Sherry, and P. S. Tam, October 1978.
6.13. BNWL-1457, R. K. Hilliard and L. F. Coleman, "Natural Transport Effects on Fission Produce Behavior in the Containment Systems Experiment," December 1970.
6.14. WASH-1400 (NUREG-75/014), "An Assessment of Accident Risks in U.S. Commercial Nuclear Power Plants," Appendices VII, VIII, IX, and X, October 1975 (ADAMS Accession No. ML070600376).
6.15. NUREG-0800, Standard Review Plan Section 6.5.2, March 2007.
6.16. Letter from Kahtan N. Jabbour (U.S. NRC) to Christopher M. Crane, "Clinton Power Station, Unit 1 - Issuance of an Amendment Re: Application of Alternative Source Term Methodology (TAC No. MB8365)," dated September 19, 2005 (ADAMS Accession No. ML052570461).
6.17. Letter from Richard V. Guzman (U.S. NRC) to Christopher M. Crane, "Limerick Generating Station, Units 1 and 2 – Issuance of Amendments Re: Application of Alternative Source Term Methodology (TAC Nos. MC2295 and MC2296)," dated August 23, 2006 (ADAMS Accession No. ML062210214).

6.18. Letter from Christopher Gratton (U.S. NRC) to Michael J. Pacilio, "LaSalle County Station, Units 1 and 2 – Issuance of Amendments Re: Application of Alternative Source Term Methodology (TAC Nos. ME0068 and ME0069)," dated September 6, 2010 (ADAMS Accession No. ML101750625).
6.19. "James A. FitzPatrick Nuclear Power Plant – Amendment Re: Technical Specification Change to the Requirements for Handling Irradiated Fuel Assemblies (TAC No. MB5328)," September 12, 2002 (ADAMS Accession No. ML022350228).
6.20. Power Authority of New York letter from J. P. Bayne to Thomas A. Ippolito (NRC), JPN-81-39, June 5, 1981.
6.21. NUREG-0933, "Resolution of Generic Safety Issues," December 2011.
6.22. Letter from Guy S. Vissing (NRC) to Michael Kansler (ENO), "James A. FitzPatrick Nuclear Power Plant - Amendment Re: Technical Specification Change to the Requirements for Handling Irradiated Fuel Assemblies (TAC No. MB5328)," September 12, 2002.
6.23. Letter from J. M. Whitman (U.S. NRC) to Technical Specifications Task Force, "Final Safety Evaluation of Technical Specifications Task Force Traveler TSTF-551, Revision 3, 'Revise Secondary Containment Surveillance Requirements' (CAC No. MF5125)," dated September 21, 2017.
6.24. JAF-CALC-19-00003, Revision 0, "Suppression Pool pH Following a Loss of Coolant Accident."

Attachment 2
Regulatory Guide 1.183 Conformance Matrix

Table 2.1: Conformance with Regulatory Guide (RG) 1.183 Main Sections			
RG Section	RG Position (from RG 1.183)	JAFNPP Analysis	Comments
3.1	The inventory of fission products in the reactor core and available for release to the containment should be based on the maximum full power operation of the core with, as a minimum, current licensed values for fuel enrichment, fuel burnup, and an assumed core power equal to the current licensed rated thermal power times the ECCS evaluation uncertainty. The period of irradiation should be of sufficient duration to allow the activity of dose-significant radionuclides to reach equilibrium or to reach maximum values. The core inventory should be determined using an appropriate isotope generation and depletion computer code such as ORIGEN 2 or ORIGEN-ARP. Core inventory factors (Ci/MWt) provided in TID 14844 and used in some analysis computer codes were derived for low burnup, low enrichment fuel and should not be used with higher burnup and higher enrichment fuels.	Conforms	ORIGEN-ARP based methodology was used to determine core inventory. The core source terms used in this calculation are the current design basis values as developed for the JAFNPP core average exposure (CAVEX) bounding source term. Power level used in the current LOCA calculation is 2586.7 MWt to account for two percent uncertainty (2536 x 1.02 = 2586.7). Fission product inventory is based on an average core burnup between 12 to 43 GWD/MTU.
3.1	For the DBA LOCA, all fuel assemblies in the core are assumed to be affected and the core average inventory should be used. For DBA events that do not involve the entire core, the fission product inventory of each of the damaged fuel rods is determined by dividing the total core inventory by the number of fuel rods in the core. To account for differences in power level across the core, radial peaking factors from the facility's Core Operating Limits Report (COLR) or Technical Specifications should be applied in determining the inventory of the damaged rods.	Conforms	This calculation addresses LOCA, and all fuel assemblies in the core are assumed to be affected and the core average inventory is used.
3.1	No adjustment to the fission product inventory should be made for events postulated to occur during power operations at less than full rated power or those postulated to occur at the beginning of core life. For events postulated to occur while the facility is shutdown, e.g., a fuel handling accident, radioactive decay from the time of shutdown may be modeled.	Conforms	This calculation addresses a LOCA. Fission product inventories reflect full power operation.

<table>
<tr>
<td>3.2</td>
<td>The core inventory release fractions, by radionuclide groups, for the gap release and early in-vessel damage phases for DBA LOCAs are listed in Table 1 for BWRs and Table 2 for PWRs. These fractions are applied to the equilibrium core inventory described in Regulatory Position 3.1.

Table 1
BWR Core Inventory Fraction
Released Into Containment
<table><tr><th>Group</th><th>Gap Release Phase</th><th>Early In-vessel Phase</th><th>Total</th></tr><tr><td>Noble Gases</td><td>0.05</td><td>0.95</td><td>1.0</td></tr><tr><td>Halogens</td><td>0.05</td><td>0.25</td><td>0.3</td></tr><tr><td>Alkali Metals</td><td>0.05</td><td>0.20</td><td>0.25</td></tr><tr><td>Tellurium Metals</td><td>0.00</td><td>0.05</td><td>0.05</td></tr><tr><td>Ba, Sr</td><td>0.00</td><td>0.02</td><td>0.02</td></tr><tr><td>Noble Metals</td><td>0.00</td><td>0.0025</td><td>0.0025</td></tr><tr><td>Cerium Group</td><td>0.00</td><td>0.0005</td><td>0.0005</td></tr><tr><td>Lanthanides</td><td>0.00</td><td>0.0002</td><td>0.0002</td></tr></table></td>
<td>Conforms</td>
<td>The fractions from Table 1 are used.</td>
</tr>
<tr>
<td>3.2</td>
<td>For non-LOCA events, the fractions of the core inventory assumed to be in the gap for the various radionuclides are given in Table 3. The release fractions from Table 3 are used in conjunction with the fission product inventory calculated with the maximum core radial peaking factor.

Table 3[11]
Non-LOCA Fraction of Fission Product Inventory in G
<table><tr><th>Group</th><th>Fraction</th></tr><tr><td>I-131</td><td>0.08</td></tr><tr><td>Kr-85</td><td>0.10</td></tr><tr><td>Other Noble Gases</td><td>0.05</td></tr><tr><td>Other Halogens</td><td>0.05</td></tr><tr><td>Alkali Metals</td><td>0.12</td></tr></table></td>
<td>Conforms</td>
<td>Not applicable to LOCA.</td>
</tr>
</table>

<table>
<tr>
<td>3.3</td>
<td>Table 4 tabulates the onset and duration of each sequential release phase for DBA LOCAs at PWRs and BWRs. The specified onset is the time following the initiation of the accident (i.e., time = 0). The early in-vessel phase immediately follows the gap release phase. The activity released from the core during each release phase should be modeled as increasing in a linear fashion over the duration of the phase. For non-LOCA DBAs, in which fuel damage is projected, the release from the fuel gap and the fuel pellet should be assumed to occur instantaneously with the onset of the projected damage.

Table 4
LOCA Release Phases
<table><tr><th></th><th colspan="2">PWRs</th><th colspan="2">BWRs</th></tr><tr><th>Phase</th><th>Onset</th><th>Duration</th><th>Onset</th><th>Duration</th></tr><tr><td>Gap Release</td><td>30 sec</td><td>0.5 hr</td><td>2 min</td><td>0.5 hr</td></tr><tr><td>Early In-Vessel</td><td>0.5 hr</td><td>1.3 hr</td><td>0.5 hr</td><td>1.5 hr</td></tr></table></td>
<td>Conforms</td>
<td>The BWR durations from Table 4 are used.

LOCA releases are modeled in a linear fashion using RADTRAD. The two-minute gap release decay is not applied but is considered in the timing of the Secondary Containment (Reactor Building) drawdown.</td>
</tr>
<tr>
<td>3.3</td>
<td>For facilities licensed with leak-before-break methodology, the onset of the gap release phase may be assumed to be 10 minutes. A licensee may propose an alternative time for the onset of the gap release phase, based on facility-specific calculations using suitable analysis codes or on an accepted topical report shown to be applicable for the specific facility. In the absence of approved alternatives, the gap release phase onsets in Table 4 should be used.</td>
<td>Not Applicable</td>
<td>JAFNPP does not use leak-before-break methodology for DBA analyses.</td>
</tr>
<tr>
<td>3.4</td>
<td>Table 5 lists the elements in each radionuclide group that should be considered in design basis analyses.

Table 5
Radionuclide Groups
<table><tr><th>Group</th><th>Elements</th></tr><tr><td>Noble Gases</td><td>Xe, Kr</td></tr><tr><td>Halogens</td><td>I, Br</td></tr><tr><td>Alkali Metals</td><td>Cs, Rb</td></tr><tr><td>Tellurium Group</td><td>Te, Sb, Se, Ba, Sr</td></tr><tr><td>Noble Metals</td><td>Ru, Rh, Pd, Mo, Tc, Co</td></tr><tr><td>Lanthanides</td><td>La, Zr, Nd, Eu, Nb, Pm, Pr Sm, Y, Cm, Am</td></tr><tr><td>Cerium</td><td>Ce, Pu, Np</td></tr></table></td>
<td>Conforms</td>
<td>The nuclides used are the 60 identified as being potentially important dose contributors to total effective dose equivalent (TEDE) in the RADTRAD code, which encompasses those listed in RG 1.183, Table 5.</td>
</tr>
</table>

3.5	Of the radioiodine released from the reactor coolant system (RCS) to the containment in a postulated accident, 95 percent of the iodine released should be assumed to be cesium iodide (Csl), 4.85 percent elemental iodine, and 0.15 percent organic iodide. This includes releases from the gap and the fuel pellets. With the exception of elemental and organic iodine and noble gases, fission products should be assumed to be in particulate form. The same chemical form is assumed in releases from fuel pins in Fuel Handling Accidents and from releases from the fuel pins through the RCS in DBAs other than Fuel Handling Accidents or LOCAs. However, the transport of these iodine species following release from the fuel may affect these assumed fractions. The accident-specific appendices to this regulatory guide provide additional details.	Conforms	NRC guidance on chemical forms for fission products is applied for all accidents as specified here and in RG 1.183 appendices.
3.6	The amount of fuel damage caused by non-LOCA design basis events should be analyzed to determine, for the case resulting in the highest radioactivity release, the fraction of the fuel that reaches or exceeds the initiation temperature of fuel melt and the fraction of fuel elements for which the fuel clad is breached. Although the NRC staff has traditionally relied upon the departure from nucleate boiling ratio (DNBR) as a fuel damage criterion, licensees may propose other methods to the NRC staff, such as those based upon enthalpy deposition, for estimating fuel damage for the purpose of establishing radioactivity releases.	Not applicable to LOCA.	
4.1.1	The dose calculations should determine the TEDE. TEDE is the sum of the Committed Effective Dose Equivalent (CEDE) from inhalation and the Deep Dose Equivalent (DDE) from external exposure. The calculation of these two components of the TEDE should consider all radionuclides, including progeny from the decay of parent radionuclides that are significant with regard to dose consequences and the released radioactivity.	Conforms	TEDE is calculated, with significant progeny included.

4.1.2	The exposure-to-CEDE factors for inhalation of radioactive material should be derived from the data provided in ICRP Publication 30, "Limits for Intakes of Radionuclides by Workers." Table 2.1 of Federal Guidance Report 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," provides tables of conversion factors acceptable to the NRC staff. The factors in the column headed "effective" yield doses corresponding to the CEDE.	Conforms	Federal Guidance Report 11 dose conversion factors (DCFs) are used.
4.1.3	For the first 8 hours, the breathing rate of persons offsite should be assumed to be 3.5 x 10^{-4} cubic meters per second. From 8 to 24 hours following the accident, the breathing rate should be assumed to be 1.8 x 10^{-4} cubic meters per second. After that and until the end of the accident, the rate should be assumed to be 2.3 x 10^{-4} cubic meters per second.	Conforms	The analysis uses values which correspond to the values in Section 4.1.3 of RG 1.183.
4.1.4	The DDE should be calculated assuming submergence in semi-infinite cloud assumptions with appropriate credit for attenuation by body tissue. The DDE is nominally equivalent to the Effective Dose Equivalent (EDE) from external exposure if the whole body is irradiated uniformly. Since this is a reasonable assumption for submergence exposure situations, EDE may be used in lieu of DDE in determining the contribution of external dose to the TEDE. Table III.1 of Federal Guidance Report 12, "External Exposure to Radionuclides in Air, Water, and Soil," provides external EDE conversion factors acceptable to the NRC staff. The factors in the column headed "effective" yield doses corresponding to the EDE.	Conforms	Federal Guidance Report 12 conversion factors are used.

4.1.5	The TEDE should be determined for the most limiting person at the EAB. The maximum EAB TEDE for any two-hour period following the start of the radioactivity release should be determined and used in determining compliance with the dose criteria in 10 CFR 50.67. The maximum two-hour TEDE should be determined by calculating the postulated dose for a series of small time increments and performing a "sliding" sum over the increments for successive two-hour periods. The maximum TEDE obtained is the Fuel Handling Accident. The time increments should appropriately reflect the progression of the accident to capture the peak dose interval between the start of the event and the end of radioactivity release (see also Table 6).	Conforms	The maximum two-hour EAB doses value are determined by RADTRAD for each release path. These results are added, even if the times do not coincide, for simplicity and conservatism. That is, worst case two-hour results in each RADTRAD run are added to obtain the total EAB dose.
4.1.6	TEDE should be determined for the most limiting receptor at the outer boundary of the Low Population Zone (LPZ) and should be used in determining compliance with the dose criteria in 10 CFR 50.67.	Conforms	Analyses are based on χ/Qs determined at the LPZ distance in conformance with Regulatory Guide 1.145.
4.1.7	No correction should be made for depletion of the effluent plume by deposition on the ground.	Conforms	No such credit is taken.
4.2.1	The TEDE analysis should consider all sources of radiation that will cause exposure to Control Room personnel. The applicable sources will vary from facility to facility, but typically will include: • Contamination of the Control Room atmosphere by the intake or infiltration of the radioactive material contained in the radioactive plume released from the facility, • Contamination of the Control Room atmosphere by the intake or infiltration of airborne radioactive material from areas and structures adjacent to the Control Room envelope, • Radiation shine from the external radioactive plume released from the facility,	Conforms	The principal source of dose within the Control Room is due to airborne activity. This calculation considers radiation shine from sources external to the Control Room. The sources considered are: • Secondary Containment (Reactor Building) Airborne Activity • External Cloud (Plume) Activity • Control Room Intake Filter Activity The Control Room dose contribution from shine meets the guidance of RG 1.183.

	• Radiation shine from radioactive material in the reactor containment, • Radiation shine from radioactive material in systems and components inside or external to the Control Room envelope, e.g., radioactive material buildup in recirculation filters.		
4.2.2	The radioactive material releases and radiation levels used in the Control Room dose analysis should be determined using the same source term, transport, and release assumptions used for determining the EAB and the LPZ TEDE values, unless these assumptions would result in non- conservative results for the Control Room.	Conforms	The source term, transport, and release assumptions are the same for both the Control Room and offsite locations.
4.2.3	The models used to transport radioactive material into and through the Control Room, and the shielding models used to determine radiation dose rates from external sources, should be structured to provide suitably conservative estimates of the exposure to Control Room personnel.	Conforms	RADTRAD analyses are used to evaluate transport of material into and through the Control Room, and to determine the resulting personnel doses.
4.2.4	Credit for engineered safety features that mitigate airborne radioactive material within the Control Room may be assumed. Such features may include Control Room isolation or pressurization, or intake or recirculation filtration. Refer to Section 6.5.1, "ESF Atmospheric Cleanup System," of the SRP and Regulatory Guide 1.52, "Design, Testing, and Maintenance Criteria for Post-accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light- Water-Cooled Nuclear Power Plants," for guidance.	Conforms	Pressurization and intake filtration are credited in the LOCA accident analysis. The JAFNPP Control Room does not provide recirculation filtration.
4.2.5	Credit should generally not be taken for the use of personal protective equipment or prophylactic drugs. Deviations may be considered on a case-by-case basis.	Conforms	Such credits are not taken.

4.2.6	The dose receptor for these analyses is the hypothetical maximum exposed individual who is present in the Control Room for 100% of the time during the first 24 hours after the event, 60% of the time between 1 and 4 days, and 40% of the time from 4 days to 30 days. For the duration of the event, the breathing rate of this individual should be assumed to be 3.5 x 10^{-4} cubic meters per second.	Conforms	The identified occupancy factors are used in dose analyses. A breathing rate of 3.5 x 10^{-4} cubic meters per second is used.
4.2.7	Control Room doses should be calculated using dose conversion factors identified in Regulatory Position 4.1 above for use in offsite dose analyses. The DDE from photons may be corrected for the difference between finite cloud geometry in the Control Room and the semi-infinite cloud assumption used in calculating the dose conversion factors. The following expression may be used to correct the semi-infinite cloud dose, DDE_{∞} to a finite cloud dose, DDE_{finite}, where the Control Room is modeled as a hemisphere that has a volume, V, in cubic feet, equivalent to that of the Control Room. $$DDE_{finite} = \frac{DDE_{\infty} V^{0.338}}{1173}$$	Conforms	The equation given is utilized for finite cloud correction when calculating external doses due to the airborne activity inside the Control Room. This formula is built into RADTRAD for use in Control Room dose assessments.
4.3	The guidance provided in Regulatory Positions 4.1 and 4.2 should be used, as applicable, in re-assessing the radiological analyses identified in Regulatory Position 1.3.1, such as those in NUREG-0737. Design envelope source terms provided in NUREG-0737 should be updated for consistency with the AST. In general, radiation exposures to plant personnel identified in Regulatory Position 1.3.1 should be expressed in terms of TEDE. Integrated radiation exposure of plant equipment should be determined using the guidance of Appendix I of this guide.	Conforms	The post-accident doses to personnel in the Technical Support Center at JAFNPP are evaluated separately. This evaluation demonstrated that the post-accident doses to personnel in the TSC are acceptable. Vital area access is discussed in Section 3.11.16. Integrated radiation exposure of plant equipment for equipment qualification purposes continues to be based on TID-14844 source terms in accordance with RG 1.183, Appendix I.

5.1.1	The evaluations required by 10 CFR 50.67 are re-analyses of the design basis safety analyses and evaluations required by 10 CFR 50.34; they are considered to be a significant input to the evaluations required by 10 CFR 50.92 or 10 CFR 50.59. These analyses should be prepared, reviewed, and maintained in accordance with quality assurance programs that comply with Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50.	Conforms	Analyses are performed under quality assurance programs meeting Appendix B to 10 CFR Part 50.
5.1.2	Credit may be taken for accident mitigation features that are classified as safety-related, are required to be operable by Technical Specifications, are powered by emergency power sources, and are either automatically actuated or, in limited cases, have actuation requirements explicitly addressed in emergency operating procedures. The single active component failure that results in the most limiting radiological consequences should be assumed. Assumptions regarding the occurrence and timing of a loss of offsite power should be selected with the objective of maximizing the postulated radiological consequences.	Conforms	This analysis generally relies on the same safety-related accident mitigation features historically credited for LOCA analyses. The basic assumptions reflect a design basis LOCA with a loss of offsite power. Other limiting single failures (such as loss of redundant trains) are also assumed. The analyses take credit for SLC system operation for post-LOCA pH control. The SLC system is safety-related, required to be operable by Technical Specifications, and powered by emergency power. The SLC system is manually initiated from the main Control Room, as directed by the emergency operating procedures. Attachment 8 of this amendment request addresses other criteria that have been established to assure the SLC system is reliable for this intended service. The analysis also takes credit for spray removal of aerosols and elemental iodine.

5.1.3	The numeric values that are chosen as inputs to the analyses required by 10 CFR 50.67 should be selected with the objective of determining a conservative postulated dose. In some instances, a particular parameter may be conservative in one portion of an analysis but be nonconservative in another portion of the same analysis.	Conforms	See input parameter discussions and Table 3.11-1 for further information.
5.1.4	Licensees should ensure that analysis assumptions and methods are compatible with the AST and the TEDE criteria.	Conforms	Assumptions and methods are compatible with the AST methodology and TEDE criteria as documented in this calculation.
5.3	Atmospheric dispersion values (χ/Q) for the EAB, the LPZ, and the Control Room that were approved by the staff during initial facility licensing or in subsequent licensing proceedings may be used in performing the radiological analyses identified by this guide. Methodologies that have been used for determining χ/Q values are documented in Regulatory Guides 1.3 and 1.4, Regulatory Guide 1.145, "Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants," and the paper, "Nuclear Power Plant Control Room Ventilation System Design for Meeting General Criterion 19." The NRC computer code PAVAN implements Regulatory Guide 1.145 and its use is acceptable to the NRC staff. The methodology of the NRC computer code ARCON96 is generally acceptable to the NRC staff for use in determining Control Room χ/Q values.	Conforms	Atmospheric dispersion values (χ/Qs) for the EAB, the LPZ, and the Control Room that were previously approved by the Staff are used in the LOCA analysis. These atmospheric dispersion values were based on meteorological data from 1985-1992 and provided χ/Qs for stack releases and ground releases from the Reactor Building. Because the MSIV ground level release is a new release pathway, new χ/Qs were developed for the Control Room for this release pathway. This analysis also used the previously approved meteorological data from 1985-1992 to maintain consistency with the other atmospheric dispersion calculations of record. The ARCON96 computer code was used with these data to determine the Control Room atmospheric dispersion values.

RG Section	RG Position	JAFNPP Analysis	Comments
A-1	Acceptable assumptions regarding core inventory and the release of radionuclides from the fuel are provided in Regulatory Position 3 of this guide.	Conforms	*Fission Product Inventory:* Core source terms are developed using ORIGEN-ARP based methodology. *Release Fractions:* Release fractions are per Table 1 of RG 1.183. *Timing of Release Phases:* Release Phases are per Table 4 of RG 1.183. *Radionuclide Composition:* Radionuclide grouping is per Table 5 of RG 1.183. *Chemical Form:* Treatment of release chemical form is per RG 1.183, Section 3.5.
A-2	If the sump or Suppression Pool pH is controlled at values of 7 or greater, the chemical form of radioiodine released to the containment should be assumed to be 95% cesium iodide (CsI), 4.85 percent elemental iodine, and 0.15 percent organic iodide. Iodine species, including those from iodine re-evolution, for sump or Suppression Pool pH values less than 7 will be evaluated on a case-by-case basis. Evaluations of pH should consider the effect of acids and bases created during the LOCA event, e.g., radiolysis products. With the exception of elemental and organic iodine and noble gases, fission products should be assumed to be in particulate form.	Conforms	The stated distributions of iodine chemical forms are used. The post-LOCA Suppression Pool pH has been evaluated, including consideration of the effects of acids and bases created during the LOCA event, the effects of key fission product releases, and the impact of SLC system injection. Suppression Pool pH remains above 7 for at least 30 days. (see Section 3.11.4)
A-3.1	The radioactivity released from the fuel should be assumed to mix instantaneously and homogeneously throughout the free air volume of the Primary Containment in PWRs or the Drywell in BWRs as it is released. This	Conforms	See Item A-3.7 of this table below.

RG Section	RG Position	JAFNPP Analysis	Comments
	distribution should be adjusted if there are internal compartments that have limited ventilation exchange. The Suppression Pool free air volume may be included provided there is a mechanism to ensure mixing between the Drywell to the wetwell. The release into the containment or Drywell should be assumed to terminate at the end of the early in-vessel phase.		
A-3.2	Reduction in airborne radioactivity in the containment by natural deposition within the containment may be credited. Acceptable models for removal of iodine and aerosols are described in Chapter 6.5.2, "Containment Spray as a Fission Product Cleanup System," of the Standard Review Plan (SRP), NUREG-0800 and in NUREG/CR-6189, "A Simplified Model of Aerosol Removal by Natural Processes in Reactor Containments." The latter model is incorporated into the analysis code RADTRAD.	Conforms	Credit is not taken for natural deposition. Removal by containment (Drywell) sprays is considered in accordance with SRP 6.5.2.
A-3.3	Reduction in airborne radioactivity in the containment by containment spray systems that have been designed and are maintained in accordance with Chapter 6.5.2 of the SRP may be credited. Acceptable models for the removal of iodine and aerosols are described in Chapter 6.5.2 of the SRP and NUREG/CR-5966, "A Simplified Model of Aerosol Removal by Containment Sprays." This simplified model is incorporated into the analysis code RADTRAD. The evaluation of the containment sprays should address areas within the Primary Containment that are not covered by the spray drops. The mixing rate attributed to natural convection between sprayed	Conforms	Compliance of the JAFNPP Drywell spray system with the guidance of SRP 6.5.2 is discussed in Attachment 6.

RG Section	RG Position	JAFNPP Analysis	Comments
	and unsprayed regions of the containment building, provided that adequate flow exists between these regions, is assumed to be two turnovers of the unsprayed regions per hour, unless other rates are justified. The containment building atmosphere may be considered a single, well-mixed volume if the spray covers at least 90% of the volume and if adequate mixing of unsprayed compartments can be shown. The SRP sets forth a maximum Decontamination Factor (DF) for elemental iodine based on the maximum iodine activity in the Primary Containment atmosphere when the sprays actuate, divided by the activity of iodine remaining at some time after decontamination. The SRP also states that the particulate iodine removal rate should be reduced by a factor of 10 when a DF of 50 is reached. The reduction in the removal rate is not required if the removal rate is based on the calculated time-dependent airborne aerosol mass. There is no specified maximum DF for aerosol removal by sprays. The maximum activity to be used in determining the DF is defined as the iodine activity in the columns labeled "Total" in Tables 1 and 2 of this guide multiplied by 0.05 for elemental iodine and by 0.95 for particulate iodine (i.e., aerosol treated as particulate in SRP methodology).		
A-3.4	Reduction in airborne radioactivity in the containment by in-containment recirculation filter systems may be credited if these systems meet the guidance of Regulatory Guide 1.52 and Generic Letter 99-02 (Refs. A-5 and A-6). The filter media loading caused by the increased aerosol release associated with the revised source term should be addressed.	Not Applicable	No in-containment recirculation filter systems exist at JAFNPP.

RG Section	RG Position	JAFNPP Analysis	Comments
A-3.5	Reduction in airborne radioactivity in the containment by Suppression Pool scrubbing in BWRs should generally not be credited. However, the staff may consider such reduction on an individual case basis. The evaluation should consider the relative timing of the blowdown and the fission product release from the fuel, the force driving the release through the pool, and the potential for any bypass of the Suppression Pool. Analyses should consider iodine re-evolution if the Suppression Pool liquid pH is not maintained greater than 7.	Conforms	No credit is taken for Suppression Pool scrubbing in the LOCA AST re-analysis. As indicated in the evaluation of Regulatory Position A-2, above, analyses have been performed that determined that the Suppression Pool liquid pH is maintained greater than 7, and therefore iodine re-evolution is not a concern.
A-3.6	Reduction in airborne radioactivity in the containment by retention in ice condensers, or other engineering safety features not addressed above, should be evaluated on an individual case basis. See Section 6.5.4 of the SRP.	Not Applicable	JAFNPP does not have ice condensers.
A-3.7	The Primary Containment (i.e., Drywell for Mark I and II containment designs) should be assumed to leak at the peak pressure Technical Specification leak rate for the first 24 hours. For PWRs, the leak rate may be reduced after the first 24 hours to 50% of the Technical Specification leak rate. For BWRs, leakage may be reduced after the first 24 hours, if supported by plant configuration and analyses, to a value not less than 50% of the Technical Specification leak rate. Leakage from subatmospheric containments is assumed to terminate when the containment is brought to and maintained at a subatmospheric condition as defined by Technical Specifications. For BWRs with Mark III containments, the leakage from the Drywell into the Primary	Conforms.	Credit for leak rate reduction after 24 hours, based on containment pressure, is determined. JAFNPP has a Mark I containment, and leakage from the Drywell into Secondary Containment (Reactor Building) is based on a leakage of 1.5%v/day at the peak Drywell pressure of 45 psig as given in Technical Specification 5.5.6.b. Rapid mixing of the wetwell and Drywell is considered at two hours. The Drywell leakage is reduced by 50% at 24 hours based on post-accident Drywell pressure.

RG Section	RG Position	JAFNPP Analysis	Comments
	Containment should be based on the steaming rate of the heated reactor core, with no credit for core debris relocation. This leakage should be assumed during the two-hour period between the initial blowdown and termination of the fuel radioactivity release (gap and early in-vessel release phases). After two hours, the radioactivity is assumed to be uniformly distributed throughout the Drywell and the Primary Containment.		
A-3.8	If the Primary Containment is routinely purged during power operations, releases via the purge system prior to containment isolation should be analyzed and the resulting doses summed with the postulated doses from other release paths. The purge release evaluation should assume that 100% of the radionuclide inventory in the reactor coolant system liquid is released to the containment at the initiation of the LOCA. This inventory should be based on the Technical Specification reactor coolant system equilibrium activity. Iodine spikes need not be considered. If the purge system is not isolated before the onset of the gap release phase, the release fractions associated with the gap release and early in-vessel phases should be considered as applicable.	Conforms	JAFNPP has a purge and vent system which is not used for humidity, temperature, or airborne activity control during reactor power operations. The purge valves have mechanical stops to limit valve opening and these valves would be fully closed prior to the initiation of gap release at two-minutes.
A-4.1	Leakage from the Primary Containment should be considered to be collected, processed by Engineered Safety Feature (ESF) filters, if any, and released to the environment via the Secondary Containment exhaust system during periods in which the Secondary Containment has a negative pressure as defined in Technical Specifications. Credit for an elevated release should be	Conforms	Secondary Containment (Reactor Building) filtered release credit is taken at 20 minutes after the start of the accident based on the drawdown analysis. For EAB and LPZ doses, releases from the SGT stack are assumed. For Control Room

RG Section	RG Position	JAFNPP Analysis	Comments
	assumed only if the point of physical release is more than two and one-half times the height of any adjacent structure.		doses, releases are based on an unfiltered ground level release from the Reactor Building until the differential pressure reaches -0.25 in w.g. (in 20 minutes) at which time the release is a filtered elevated release.
A-4.2	Leakage from the Primary Containment is assumed to be released directly to the environment as a ground-level release during any period in which the Secondary Containment does not have a negative pressure as defined in Technical Specifications.	Conforms	Releases from the Primary Containment are into the Reactor Building. For EAB and LPZ doses, releases are assumed to be elevated releases as was done in the previously approved atmospheric dispersion analyses. For Control Room doses, releases are based on an unfiltered ground level release from the Reactor Building until the differential pressure reaches -0.25 in w.g. (in 20 minutes) at which time the release is a filtered elevated release.
A-4.3	The effect of high wind speeds on the ability of the Secondary Containment to maintain a negative pressure should be evaluated on an individual case basis. The wind speed to be assumed is the 1-hour average value that is exceeded only 5% of the total number of hours in the data set. Ambient temperatures used in these assessments should be the 1-hour average value that is exceeded only 5% or 95% of the total numbers of hours in the data set, whichever is conservative for the intended use (e.g., if high temperatures are limiting, use those exceeded only 5%).	Conforms	The potential for high wind speeds impacting the ability of Secondary Containment to maintain negative pressures for wind speeds has been evaluated in the Reactor Building drawdown analysis. This analysis was based on a wind speed of 20 miles per hour which occurs 5% of the time at nearby Syracuse, New York.

RG Section	RG Position	JAFNPP Analysis	Comments
A-4.4	Credit for dilution in the Secondary Containment may be allowed when adequate means to cause mixing can be demonstrated. Otherwise, the leakage from the Primary Containment should be assumed to be transported directly to exhaust systems without mixing. Credit for mixing, if found to be appropriate, should generally be limited to 50%. This evaluation should consider the magnitude of the containment leakage in relation to contiguous building volume or exhaust rate, the location of exhaust plenums relative to projected release locations, the recirculation ventilation systems, and internal walls and floors that impede stream flow between the release and the exhaust.	Conforms	Credit is taken for mixing in 50% of the Secondary Containment (Reactor Building) volume. This analysis will credit 50% mixing consistent with SRP 6.5.3 and Regulatory Guide 1.183, Appendix A, Section 4.4. The leakage from the Drywell to the Reactor Building is 1.5% v/day and the Drywell volume is 1.5E+05 ft^3. The flow rate from the Primary Containment is therefore approximately 56 cfm into a Secondary Containment volume of approximately 2,370,000 ft^3. The containment leakage, if any, would most likely be associated with piping penetrations which are located in the lower part of the containment or door seals. This small amount of containment leakage would have to diffuse through the Secondary Containment prior to being exhausted by the SGTS to the environment. Significant mixing would occur as the leakage travels through the auxiliary building. The SGTS would provide additional mixing by removing air from many different regions of the Reactor Building and exhausting to the environment. Based on the above, mixing in 50% of the Secondary Containment volume is justified.
A-4.5	Primary Containment leakage that bypasses the Secondary Containment should be evaluated at the bypass leak rate incorporated in the Technical	Conforms	There is no bypass leakage consideration at JAFNPP. The JAFNPP Technical Specifications do not provide a

RG Section	RG Position	JAFNPP Analysis	Comments
	Specifications. If the bypass leakage is through water, e.g., via a filled piping run that is maintained full, credit for retention of iodine and aerosols may be considered on a case-by-case basis. Similarly, deposition of aerosol radioactivity in gas-filled lines may be considered on a case-by-case basis.		bypass leakage limit. The release of MSIV leakage at JAFNPP has previously been based on the use of the MSLC system to ensure filtration of the MSIV leakage by the SGTS. This system is no longer credited. MSIV leakage will have a separate Technical Specification limit of 200 scfh total leakage with not more than 100 scfh per line when tested at a pressure greater than or equal to 25 psig. The dose consequences for releases through this pathway (with piping deposition credit) are calculated separately considering the release as a ground level release. Because doses from MSIV leakage are analyzed separately, they need not be considered as among the penetrations controlled under the Containment (Drywell) leakage limit (L_a). This will require an Appendix J exemption from consideration MSIV leakage as part of L_a. ESF leakage is considered separately as well with the ESF leakage going into the Reactor Building.
A-4.6	Reduction in the amount of radioactive material released from the Secondary Containment because of ESF filter systems may be taken into account provided that these systems meet the guidance of Regulatory Guide 1.52 and Generic Letter 99-02.	Conforms	SGTS filters meet these criteria and are therefore credited at an efficiency of 97% for all iodine chemical forms and for 97% for aerosols.
A-5.1	With the exception of noble gases, all the fission products released from the fuel to the containment (as defined in Tables 1	Conforms	With the exception of noble gases, all the fission products released from the fuel to the

RG Section	RG Position	JAFNPP Analysis	Comments
	and 2 of this guide) should be assumed to instantaneously and homogeneously mix in the Primary Containment sump water (in PWRs) or Suppression Pool (in BWRs) at the time of release from the core. In lieu of this deterministic approach, suitably conservative mechanistic models for the transport of airborne activity in containment to the sump water may be used. Note that many of the parameters that make spray and deposition models conservative with regard to containment airborne leakage are nonconservative with regard to the buildup of sump activity.		containment are assumed to instantaneously and homogeneously mix in the Suppression Pool at the time of release from the core.
A-5.2	The leakage should be taken as two times the sum of the simultaneous leakage from all components in the ESF recirculation systems above which the Technical Specifications, or licensee commitments to item 111.D.1.1 of NUREG-0737, would require declaring such systems inoperable. The leakage should be assumed to start at the earliest time the recirculation flow occurs in these systems and end at the latest time the releases from these systems are terminated. Consideration should also be given to design leakage through valves isolating ESF recirculation systems from tanks vented to atmosphere, e.g., Emergency Core Cooling System (ECCS) pump miniflow return to the refueling water storage tank.	Conforms	The design basis 10 gpm leak rate is 2 times the acceptance criteria for the sum of the simultaneous leakage from all components in the ESF recirculation systems as addressed in the Program committed to in T.S. 5.5.2 "Primary Coolant Sources Outside Containment". Since certain ESF systems take suction immediately from the Suppression Pool, this leak path is assumed to start at time 0.
A-5.3	With the exception of iodine, all radioactive materials in the recirculating liquid should be assumed to be retained in the liquid phase.	Conforms	With the exception of iodine, all radioactive materials in ESF liquids are assumed to be retained in the liquid phase.
A-5.4	If the temperature of the leakage exceeds 212°F, the fraction of total iodine in the liquid that becomes airborne should be assumed equal to the fraction of the leakage that flashes to vapor. This flash	Not Applicable	The temperature of the leakage does not exceed 212°F.

RG Section	RG Position	JAFNPP Analysis	Comments
	fraction, FF, should be determined using a constant enthalpy, h, process, based on the maximum time-dependent temperature of the sump water circulating outside the containment: $$FF = \frac{h_{f1} - h_{f2}}{h_{fg}}$$ *Where:* h_{f1} is the enthalpy of liquid at system design temperature and pressure; h_{f2} is the enthalpy of liquid at saturation conditions (14.7 psia, 212°F); and h_{fg} is the heat of vaporization at 212°F.		
A-5.5	If the temperature of the leakage is less than 212°F or the calculated flash fraction is less than 10%, the amount of iodine that becomes airborne should be assumed to be 10% of the total iodine activity in the leaked fluid, unless a smaller amount can be justified based on the actual sump pH history and area ventilation rates.	Conforms	ESF leakage into the Reactor Building that becomes airborne is assumed to be 10% of the total iodine activity in the leaked fluid.
A-5.6	The radioiodine that is postulated to be available for release to the environment is assumed to be 97% elemental and 3% organic. Reduction in release activity by dilution or holdup within buildings, or by ESF ventilation filtration systems, may be credited where applicable. Filter systems used in these applications should be evaluated against the guidance of Regulatory Guide 1.52 and Generic Letter 99-02.	Conforms	The credited SGTS and Control Room intake charcoal and HEPA filters meet the requirements of RG 1.52 and Generic Letter 99-02. These are credited at 97% efficiency for elemental and organic iodines. Aerosol removal efficiencies are assumed to be 97% based on the HEPA/charcoal combination.
A-6.1	For the purpose of this analysis, the activity available for release via MSIV leakage should be assumed to be that activity determined to be in the Drywell for evaluating containment leakage (see Regulatory Position 3). No credit should be assumed for activity reduction by the steam separators or by iodine partitioning in the reactor vessel.	Conforms	Because the JAFNPP MSLC system will not be credited in this accident analysis, MSIV leakage will be considered an unfiltered radioactivity release pathway, with piping deposition credit, and the radiological consequences of such a release are analyzed.

RG Section	RG Position	JAFNPP Analysis	Comments
			The radioactivity release from the fuel is assumed to instantaneously and homogeneously mix throughout the Drywell air space. The MSIV leakage is assumed to be from the Drywell air space.
A-6.2	All the MSIVs should be assumed to leak at the maximum leak rate above which the Technical Specifications would require declaring the MSIVs inoperable. The leakage should be assumed to continue for the duration of the accident. Postulated leakage may be reduced after the first 24 hours, if supported by site-specific analyses, to a value not less than 50% of the maximum leak rate.	Conforms	MSIV leakage assumed in this accident analysis is 270 scfh for all steam lines and 135 scfh for any one line (at a pressure of 45 psig). A reduction in leakage of 50% is assumed at 24 hours, based on expected containment pressures at that time. No further reduction in leak rate is credited after the first 24-hours.
A-6.3	Reduction of the amount of released radioactivity by deposition and plateout on steam system piping upstream of the outboard MSIVs may be credited, but the amount of reduction in concentration allowed will be evaluated on an individual case basis. Generally, the model should be based on the assumption of well-mixed volumes, but other models such as slug flow may be used if justified.	Conforms	Modeling of deposition and plateout for MSIV piping is based on the assumption of 2 well mixed volumes for any one pipe line providing a leak path. The formulation for determining activity removal from a well-mixed node is based on that developed in AEB 98-03 and used as described in this License Amendment Request.

RG Section	RG Position	JAFNPP Analysis	Comments
A-6.4	In the absence of collection and treatment of releases by ESFs such as the MSIV leakage control system, or as described in paragraph 6.5 below, the MSIV leakage should be assumed to be released to the environment as an unprocessed, ground-level release. Holdup and dilution in the turbine building should not be assumed.	Conforms	Since MSLC system is no longer credited, no ESFs are assumed to be available to collect or treat MSIV leakage. Releases are assumed to be from the Seismic Class I Turbine Stop Valves (TSVs) without credit for holdup or dilution in the condenser or turbine building. The release is treated as a ground level release for dose assessment.
A-6.5	A reduction in MSIV releases that is due to holdup and deposition in main steam piping downstream of the MSIVs and in the main condenser, including the treatment of air ejector effluent by offgas systems, may be credited if the components and piping systems used in the release path are capable of performing their safety function during and following a Safe Shutdown Earthquake (SSE). The amount of reduction allowed will be evaluated on an individual case basis. References A-9 and A-10 provide guidance on acceptable models.	Conforms	Main steam piping downstream of the MSIVs to the TSVs is credited. No credit is taken for holdup and deposition in piping downstream of the TSVs, or in the condenser. Aerosol removal in steam piping is evaluated based on AEB 98-03 well-mixed modeling treatment with some additional conservatisms. For elemental iodine, RG 1.183's Reference A-9 is considered for elemental iodine deposition velocities, resuspension rates and fixation rates. The deposition velocities are used in the well-mixed model formulation in AEB 98-03 that is analogous for aerosols or elemental iodine. This modeling is described in detail in this License Amendment Request.
A-7.0	The radiological consequences from post-LOCA Primary Containment purging as a combustible gas or pressure control measure should be analyzed. If the installed containment purging capabilities are maintained for purposes of severe	Conforms	Containment purging as a combustible gas or pressure control measure is not required nor credited in any design basis analysis for 30 days following a design basis LOCA at JAFNPP.

RG Section	RG Position	JAFNPP Analysis	Comments
	accident management and are not credited in any design basis analysis, radiological consequences need not be evaluated. If the Primary Containment purging is required within 30 days of the LOCA, the results of this analysis should be combined with consequences postulated for other fission product release paths to determine the total calculated radiological consequences from the LOCA. Reduction in the amount of radioactive material released via ESF filter systems may be taken into account provided that these systems meet the guidance in Regulatory Guide 1.52 and Generic Letter 99-02.		Also see the RG 1.183, Section A-3.8 discussion above.

Attachment 3
Mark-Up of JAFNPP Technical Specifications Pages

Pages

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3.3.6.1-10
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(continued)

DELETED

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Standby Liquid Control (SLC) System

LCO 3.1.7 Two SLC subsystems shall be OPERABLE.

APPLICABILITY: ~~MODES 1 and 2.~~ MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SLC subsystem inoperable.	A.1 Restore SLC subsystem to OPERABLE status.	7 days
B. Two SLC subsystems inoperable.	B.1 Restore one SLC subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE ~~3.~~ 4.	12 hours

Table 3.3.6.1-1 (page 5 of 6)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. Reactor Water Cleanup (RWCU) System Isolation					
a. RWCU Suction Line Penetration Area Temperature — High	1,2,3	1	F	SR 3.3.6.1.3 SR 3.3.6.1.7	≤ 144°F
b. RWCU Pump Area Temperature — High	1,2,3	1 per room	F	SR 3.3.6.1.3 SR 3.3.6.1.7	≤ 165°F for Pump Room A and ≤ 175°F for Pump Room B
c. RWCU Heat Exchanger Room Area Temperature — High	1,2,3	1	F	SR 3.3.6.1.3 SR 3.3.6.1.7	≤ 155°F
d. SLC System Initiation	1,2	2(d)	I	SR 3.3.6.1.7	NA
e. Reactor Vessel Water Level — Low (Level 3)	1,2,3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5 SR 3.3.6.1.7	≥ 177 inches
f. Drywell Pressure — High	1,2,3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5 SR 3.3.6.1.7	≤ 2.7 psig
6. Shutdown Cooling System Isolation					
a. Reactor Pressure — High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5 SR 3.3.6.1.7	≤ 74 psig
b. Reactor Vessel Water Level — Low (Level 3)	3	2	J	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5 SR 3.3.6.1.7	≥ 177 inches

(continued)

(d) SLC System Initiation only inputs into one of the two trip systems and only isolates one valve in the RWCU suction and return line.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.8	Verify each reactor instrumentation line EFCV actuates to the isolation position on a simulated instrument line break.	In accordance with the Inservice Testing Program
SR 3.6.1.3.9	Remove and test the explosive squib from each shear isolation valve of the TIP System.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.10	Verify combined main steam line leakage rate is ≤ ~~46~~ 200 scfh when tested at ≥ 25 psig, and ≤ 100 scfh for any one steam line,	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.11	Verify the leakage rate of each air operated testable check valve associated with the LPCI and CS Systems vessel injection penetrations is within limits.	In accordance with the Primary Containment Leakage Rate Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.1.8 Main Steam Leakage Collection (MSLC) System

LCO 3.6.1.8 Two MSLC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSLC subsystem inoperable.	A.1 Restore MSLC subsystem to OPERABLE status.	30 days
B. Two MSLC subsystems inoperable.	B.1 Restore one MSLC subsystem to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.8.1	Verify each MSLC subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.8.2	Perform a system functional test of each MSLC subsystem.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	Verify secondary containment vacuum is ≥ 0.25 inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2	Verify all secondary containment equipment hatches are closed and sealed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.3	Verify one secondary containment access door in each access opening is closed, except when the access opening is being used for entry and exit.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.4	Verify the secondary containment can be maintained ≥ 0.25 inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ 6000 cfm.	In accordance with the Surveillance Frequency Control Program

----------NOTE----------
Not required to be met for 4 hours if analysis demonstrates that one Standby Gas Treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum.

5.5 Programs and Manuals

5.5.8 Ventilation Filter Testing Program (VFTP) (continued)

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test Frequencies.

a. Demonstrate for each of the Engineered Safeguards systems that an inplace test of the HEPA filters shows a penetration and system bypass less than the value specified below when tested in accordance with Sections C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2, and ASME N510-1980 at the system flowrate specified below.

Engineered Safeguards Ventilation System	Penetration and System Bypass	Flowrate (scfm)
Standby Gas Treatment System	~~1.0%~~ 1.5%	5,400 to 6,600
Control Room Emergency Ventilation Air Supply System	~~1.0%~~ 1.5%	900 to 1,100

b. Demonstrate for each of the Engineered Safeguards systems that an inplace test of the charcoal adsorber shows a penetration and system bypass less than the value specified below when tested in accordance with Sections C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, and ASME N510-1980 at the system flowrate specified below.

Engineered Safeguards Ventilation System	Penetration and System Bypass	Flowrate (scfm)
Standby Gas Treatment System	1.0%	5,400 to 6,600
Control Room Emergency Ventilation Air Supply System	0.5%	900 to 1,100

(continued)

5.5 Programs and Manuals

5.5.8 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate for each of the Engineered Safeguards systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Section C.6.b of Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of ≤ 30°C (86°F) and the relative humidity specified below.

series, in

Engineered Safeguards Ventilation System	Penetration	RH
Standby Gas Treatment System	~~5%~~ 1.5%	≥ 70%
Control Room Emergency Ventilation Air Supply System	~~5%~~ 1.5%	≥ 95%

d. Demonstrate for each of the Engineered Safeguards systems that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified below:

Engineered Safeguards Ventilation System	Delta P (inches wg)	Flowrate (scfm)
Standby Gas Treatment System	5.7	5,400 to 6,600
Control Room Emergency Ventilation Air Supply System	5.8	900 to 1,100

e. Demonstrate that the heaters for the Standby Gas Treatment System dissipate > 29 kW when tested in accordance with ASME N510-1975.

(continued)

Attachment 4
Mark-Up of JAFNPP Technical Specifications Bases Pages
(For Information Only)

Pages

B 3.1.7-2
Insert A
B 3.1.7-3
B 3.3.6.1-18
B 3.6.1.3-13
B 3.6.4.1-3
B 3.6.1.8-1
B 3.6.1.8-2
B 3.6.1.8-3
B 3.6.1.8-4

BASES

APPLICABLE SAFETY ANALYSES (continued)

borated solution is the amount that is above the pump suction level in the boron solution storage tank (6 inches above tank bottom). No credit is taken for the portion of the tank volume that cannot be injected.

Insert A

The SLC System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii) (Ref. 3).

LCO

The OPERABILITY of the SLC System provides backup capability for reactivity control independent of normal reactivity control provisions provided by the control rods. The OPERABILITY of the SLC System is based on the conditions of the borated solution in the storage tank and the availability of a flow path to the RPV, including the OPERABILITY of the pumps and valves. Two SLC subsystems are required to be OPERABLE; each contains an OPERABLE pump, an explosive valve, and associated piping, valves, and instruments and controls to ensure an OPERABLE flow path.

APPLICABILITY

In MODES 1 and 2, shutdown capability is required. In MODES 3 and 4, control rods are not able to be withdrawn since the reactor mode switch is in shutdown and a control rod block is applied. This provides adequate controls to ensure that the reactor remains subcritical. In MODE 5, only a single control rod can be withdrawn from a core cell containing fuel assemblies. Demonstration of adequate SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)") ensures that the reactor will not become critical. Therefore, the SLC System is not required to be OPERABLE when only a single control rod can be withdrawn.

In Modes 1, 2, and 3 operation of the SLC System is required to maintain suppression pool pH >7 to prevent iodine re-evolution from the pool.

ACTIONS

A.1

If one SLC subsystem is inoperable, the inoperable subsystem must be restored to OPERABLE status within 7 days. In this condition, the remaining OPERABLE subsystem is adequate to perform the shutdown function. However, the overall reliability is reduced because a single failure in the remaining OPERABLE subsystem could result in reduced SLC System shutdown capability. The 7 day Completion Time is based on the availability of an OPERABLE subsystem capable of performing the intended SLC System function and the low probability of a Design Basis Accident (DBA) or severe transient occurring concurrent with the failure of the control rods to shut down the reactor.

(continued)

BASIS MARKUP

INSERT A: Post-accident operation of the SLC System is also required to maintain the suppression pool pH above 7 so that re-evolution of iodine from the pool does not occur.

BASES

ACTIONS (continued)

B.1

If both SLC subsystems are inoperable, at least one subsystem must be restored to OPERABLE status within 8 hours. The allowed Completion Time of 8 hours is considered acceptable given the low probability of a DBA or severe transient occurring concurrent with the failure of the control rods to shut down the reactor.

C.1

4

If any Required Action and associated Completion Time is not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE ~~3~~ within 12 hours. The allowed Completion Time of 12 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.1.7.1, SR 3.1.7.2, and SR 3.1.7.3

SR 3.1.7.1 through SR 3.1.7.3 verify certain characteristics of the SLC System (e.g., the volume and temperature of the borated solution in the storage tank), thereby ensuring SLC System OPERABILITY without disturbing normal plant operation. These Surveillances ensure that the proper borated solution volume and temperature, including the temperature of the pump suction piping, are maintained. Maintaining a minimum specified borated solution temperature is important in ensuring that the boron remains in solution and does not precipitate out in the storage tank or in the pump suction piping. The temperature versus concentration curve of Figure 3.1.7-2 ensures that a 10°F margin will be maintained above the saturation temperature. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.1.7.4 and SR 3.1.7.6

SR 3.1.7.4 verifies the continuity of the explosive charges in the injection valves to ensure that proper operation will occur if required. Other administrative controls, such as those that limit the shelf life of the explosive charges,

(continued)

BASES

APPLICABLE SAFETY ANALYSIS, LCO, and APPLICABILITY (continued)

5.d. SLC System Initiation

The isolation of the RWCU System is required when the SLC System has been initiated to prevent dilution and removal of the boron solution by the RWCU System (Ref. 6). The RWCU isolation signal is initiated when the control room SLC initiation switch is in any position other than stop.

There is no Allowable Value associated with this Function since the channels are mechanically actuated based solely on the position of the SLC System initiation switch.

Two channels (start system A or start system B) of the SLC System Initiation Function are available and are required to be OPERABLE only in MODES 1 and 2, since these are the only MODES where the reactor can be critical, and these MODES are consistent with the Applicability for the SLC System (LCO 3.1.7).

These

MODE 3 for suppression pool pH control.

As noted (footnote (d) to Table 3.3.6.1-1), this Function is only required to close one of the RWCU suction isolation valves and one return isolation valve since the signals only provide input into one of the two trip systems.

5.e. Reactor Vessel Water Level—Low (Level 3)

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some interfaces with the reactor vessel occurs to isolate the potential sources of a break. The isolation of the RWCU System on Level 3 supports actions to ensure that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46. The Reactor Vessel Water Level—Low (Level 3) Function associated with RWCU isolation is not directly assumed in the UFSAR safety analyses because the RWCU System line break is bounded by breaks of larger systems (recirculation and MSL breaks are more limiting).

Reactor Vessel Water Level—Low (Level 3) signals are initiated from four level transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. Four channels of Reactor Vessel Water Level—Low (Level 3) Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Reactor Vessel Water Level—Low (Level 3) Allowable Value was chosen to be the same as the RPS Reactor Vessel Water Level—Low

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.10

The analyses in Reference 11 are based on leakage that is more than the specified leakage rate. The combined main steam line leakage rate must be ≤ 46 scfh when tested at ≥ 25 psig. This ensures that MSIV leakage is properly accounted for in determining the overall primary containment leakage rate. The Frequency is in accordance with the Primary Containment Leakage Rate Testing Program.

200

SR 3.6.1.3.11

Surveillance of each air operated testable check valve associated with the LPCI and CS Systems vessel injection penetrations provides assurance that the resulting radiation dose rate that would result if the reactor coolant were released to the reactor building at the specified limit will be small (Ref. 12). The acceptance criteria for each air operated testable check valve associated with the LPCI and CS Systems vessel injection penetrations is < 10 gpm when hydrostatically tested at ≥ 1035 psig or < 10 scfm when pneumatically tested at ≥ 45 psig, at ambient temperature (Ref. 12). The leakage rates must be demonstrated in accordance with the leakage rate test Frequency required by the Primary Containment Leakage Rate Testing Program.

The leakage limit for a single main steam line is ≤ 100 scfh when tested at ≥ 25 psig.

REFERENCES

1. UFSAR, Section 14.6.
2. UFSAR, Section 14.5.2.3.
3. UFSAR, Section 6.5.3.2.
4. UFSAR, Section 14.8.2.1.2.
5. UFSAR, Section 7.3.3.1.
6. UFSAR, Table 7.3-1.
7. 10 CFR 50.36(c)(2)(ii).
8. Technical Requirements Manual.
9. UFSAR, Section 5.2.3.5.
10. UFSAR, Section 16.3.2.5.
11. UFSAR, Section 14.8.2.1.1.
12. NRC Letter to NYPA, November 9, 1978 NRC Safety Evaluation Supporting Amendment 40 to the Facility Operating License No. DPR-59.

BASES

ACTIONS (continued)

is inoperable is minimal.

B.1 and B.2

If secondary containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C.1

Movement of recently irradiated fuel assemblies in the secondary containment can be postulated to cause significant fission product release to the secondary containment. In such cases, the secondary containment is the only barrier to release of fission products to the environment. Therefore, movement of recently irradiated fuel assemblies must be immediately suspended if the secondary containment is inoperable.

Suspension of this activity shall not preclude completing an action that involves moving a component to a safe position.

LCO 3.0.3 is not applicable in MODES 4 or 5. However, since recently irradiated fuel assembly movement can occur in MODE 1, 2, or 3, Required Action 3.0.3 is not appl while in MODE 4 moving recently The fuel movem in either case, ir fuel assemblies shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.1

This SR ensures sufficiently leak conditions. Mom due to gusty wind conditions are considered acceptable and not cause for failure of this SR. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

The SR is modified by a Note which states the SR is not required to be met for up to 4 hours if an analysis demonstrates that one SGT subsystem remains capable of establishing the required secondary containment vacuum. Use of the Note is expected to be infrequent but may be necessitated by situations in which secondary containment vacuum may be less than the required containment vacuum, such as, but not limited to, wind gusts or failure or change of operating normal ventilation subsystems. These conditions do not indicate any change in the leak tightness of the secondary containment boundary. The analysis should consider the actual conditions (equipment configuration, temperature, atmospheric pressure, wind conditions, measured secondary containment vacuum, etc.) to determine whether, if an accident requiring secondary containment to be OPERABLE were to occur, one train of SGT could establish the assumed secondary containment vacuum within the time assumed in the accident analysis. If so, the SR may be considered met for a period up to 4 hours. The 4 hour limit is based on the expected short duration of the situations when the Note would be applied.

B 3.6 CONTAINMENT SYSTEMS DELETED

B 3.6.1.8 Main Steam Leakage Collection (MSLC) System

BASES

BACKGROUND

The MSLC System supplements the isolation function of the MSIVs by processing the fission products that could leak through the closed MSIVs after a Design Basis Accident (DBA) loss of coolant accident (LOCA).

The MSLC System consists of two independent and redundant subsystems. Each subsystem collects leakage from the stem packing of all four outboard main steam isolation valves (MSIVs) and downstream of all outboard MSIVs. Each subsystem consists of valves, controls and piping which can be aligned to the Standby Gas Treatment (SGT) System for processing. During operation, the SGT System maintains sufficient negative pressure to provide the MSLC System flow required to ensure that all postulated leakage is collected and processed (Ref. 1). While both the stem packing and the downstream portion of each subsystem contribute to reducing uncontrolled or untreated MSIV leakage, the downstream portion performs the primary function of the MSLC System to collect and process the leakage across the MSIV seats. The downstream portion is provided with interlocks that prevent inadvertent operation of the system during normal operation and to prevent improper system lineup during accident conditions.

Each downstream portion of the MSLC subsystems includes a remote manual isolation valve, an automatic isolation valve, and a backup automatic isolation valve. A pressure switch which monitors MSLC System piping pressure is provided for each automatic isolation valve. These pressure switches act to prevent the opening of the valves and to automatically close the valves on high pressure. The pressure switches will indicate low pressure during normal plant operation since the remote manual isolation valves will isolate the pressure switches from main steam pressure. The operator initiates the operation of the stem packing portion of the MSLC subsystem by opening the associated remote manual isolation valve. The operator initiates operation of the downstream portion of each MSLC subsystem by first opening the associated remote manual isolation valve. The operator then places the control switch associated with the automatic isolation valves to open. If the MSLC System pressure is greater than 16 psig the valves will remain shut and automatically open at or below 16 psig.

(continued)

DELETED

BASES

BACKGROUND (continued)	The MSLC System is manually initiated approximately 20 minutes following a DBA LOCA (Ref. 2).
APPLICABLE SAFETY ANALYSES	The MSLC System mitigates the consequences of a DBA LOCA by ensuring that fission products that may leak from the closed MSIVs are diverted to and filtered by the SGT System. The operation of the MSLC System prevents a release of untreated leakage for this type of event. The MSLC System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 3).
LCO	One MSLC subsystem can provide the required processing of the MSIV leakage. To ensure that this capability is available, assuming worst case single failure, two MSLC subsystems must be OPERABLE.
APPLICABILITY	In MODES 1, 2, and 3, a DBA could lead to a fission product release to primary containment. Therefore, MSLC System OPERABILITY is required during these MODES. In MODES 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the MSLC System OPERABLE is not required in MODE 4 or 5 to ensure MSIV leakage is processed.
ACTIONS	A.1 With one MSLC subsystem inoperable, the inoperable MSLC subsystem must be restored to OPERABLE status within 30 days. In this Condition, the remaining OPERABLE MSLC subsystem is adequate to perform the required leakage control function. However, the overall reliability is reduced because a single failure in the remaining subsystem could result in a total loss of MSIV leakage control function. The 30 day Completion Time is based on the redundant capability afforded by the remaining OPERABLE MSLC subsystem and the low probability of a DBA LOCA occurring during this period. (continued)

DELETED

BASES

ACTIONS (continued)

B.1

With two MSLC subsystems inoperable, at least one subsystem must be restored to OPERABLE status within 7 days. The 7 day Completion Time is based on the low probability of the occurrence of a DBA LOCA.

C.1 and C.2

If the MSLC subsystem cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.1.8.1

Verifying the correct alignment for manual, power operated, and automatic valves in the MSLC System flow path provides assurance that the proper flow path exists for system operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve is also allowed to be in the nonaccident position provided it can be aligned to the accident position within the time assumed in the accident analysis. This is acceptable since the MSLC System is manually initiated. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

(continued)

DELETED

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.8.2

A system functional test is performed to ensure that the MSLC System will operate through its operating sequence. This includes verifying that the automatic positioning of the valves and the operation of each interlock are correct. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. UFSAR, Section 9.19.
2. Regulatory Guide 1.96, Revision 1, Design Of Main Steam Isolation Valve Leakage Control Systems For Boiling Water Reactor Nuclear Power Plants, June 1976.
3. 10 CFR 50.36(c)(2)(ii).

Attachment 5
JAF-CALC-19-00001, Revision 0 -
JAFNPP Secondary Containment Drawdown Analysis

ATTACHMENT 1
Design Analysis Cover Sheet

Design Analysis		**Last Page No.** [6] F19	
Analysis No.: [1] JAF-CALC-19-00001		**Revision:** [2] 0 Major ☒	Minor ☐
Title: [3] JAF Secondary Containment Drawdown Analysis			
EC No.: [4] 626767		**Revision:** [5] 0	
Station(s): [7]	JAF	**Component(s):** [14]	
Unit No.: [8]	0		
Discipline: [9]	DEM		
Descrip. Code/Keyword: [10]	L3, S4		
Safety/QA Class: [11]	Safety-Related		
System Code: [12]	01-125		
Structure: [13]	RB		

CONTROLLED DOCUMENT REFERENCES [15]

Document No.:	From/To	Document No.:	From/To
See Section 4			

Is this Design Analysis Safeguards Information? [16] Yes ☐ No ☒ If yes, see SY-AA-101-106

Does this Design Analysis contain Unverified Assumptions? [17] Yes ☐ No ☒ If yes, ATI/AR#:

This Design Analysis SUPERCEDES: [18] **in its entirety.**

Description of Revision (list changed pages when all pages of original analysis were not changed): [19]

Preparer: [20]	John Wright (ENERCON) Print Name	John Wright Sign Name	3/27/19 Date
Method of Review: [21]	**Detailed Review** ☒ **Alternate Calculations (attached)** ☐ **Testing** ☐		
Reviewer: [22]	Ralph Berger (ENERCON) Print Name	Ralph Berger Sign Name	3/27/19 Date
Review Notes: [23]	Independent review ☒ Peer review ☐ The document has been reviewed in its entirety and found to be acceptable. All recommended changes were discussed, accepted, and incorporated into the final document.		
(For External Analyses Only) **External Approver:** [24]	Guy Spikes (ENERCON) Print Name	Guy Spikes Sign Name	3/27/19 Date
Exelon Reviewer: [25]	Katherine Leavock Print Name	Sign Name	3/29/19 Date
Independent 3rd Party Review Read? [26]	Yes ☐ No ☒		
Exelon Approver: [27]	Guy Foster Print Name	Guy Foster Sign Name	3/29/19 Date

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis

Design Analysis No.: JAF-CALC-19-00001 **Rev:** 0
Contract #: 00674335 **Release #:** _____

No	Question	Instructions and Guidance	Yes / No / N/A
1	Do assumptions have sufficient documented rationale?	All Assumptions should be stated in clear terms with enough justification to confirm that the assumption is conservative. For example, 1) the exact value of a particular parameter may not be known or that parameter may be known to vary over the range of conditions covered by the Calculation. It is appropriate to represent or bound the parameter with an assumed value. 2) The predicted performance of a specific piece of equipment in lieu of actual test data. It is appropriate to use the documented opinion/position of a recognized expert on that equipment to represent predicted equipment performance. Consideration should also be given as to any qualification testing that may be needed to validate the Assumptions. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
2	Are assumptions compatible with the way the plant is operated and with the licensing basis?	Ensure the documentation for source and rationale for the assumption supports the way the plant is currently or will be operated post change and they are not in conflict with any design parameters. If the Analysis purpose is to establish a new licensing basis, this question can be answered yes, if the assumption supports that new basis.	☒ ☐ ☐
3	Do all unverified assumptions have a tracking and closure mechanism in place?	**If** there are unverified assumptions without a tracking mechanism indicated, **then** create the tracking item either through an ATI or a work order attached to the implementing WO. Due dates for these actions need to support verification prior to the analysis becoming operational or the resultant plant change being op authorized.	☐ ☐ ☒
4	Do the design inputs have sufficient rationale?	The origin of the input, or the source should be identified and be readily retrievable within Exelon's documentation system. If not, then the source should be attached to the analysis. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
5	Are design inputs correct and reasonable with critical parameters identified, if appropriate?	The expectation is that an Exelon Engineer should be able to clearly understand which input parameters are critical to the outcome of the analysis. That is, what is the impact of a change in the parameter to the results of the analysis? If the impact is large, then that parameter is critical.	☒ ☐ ☐
6	Are design inputs compatible with the way the plant is operated and with the licensing basis?	Ensure the documentation for source and rationale for the inputs supports the way the plant is currently or will be operated post change and they are not in conflict with any design parameters.	☒ ☐ ☐

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis
Page 2 of 3

Design Analysis No.: JAF-CALC-19-00001 **Rev:** 0

No	Question	Instructions and Guidance	Yes / No / N/A
7	Are Engineering Judgments clearly documented and justified?	See Section 2.13 in CC-AA-309 for the attributes that are sufficient to justify Engineering Judgment. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
8	Are Engineering Judgments compatible with the way the plant is operated and with the licensing basis?	Ensure the justification for the engineering judgment supports the way the plant is currently or will be operated post change and is not in conflict with any design parameters. **If** the Analysis purpose is to establish a new licensing basis, **then** this question can be answered yes, if the judgment supports that new basis.	☒ ☐ ☐
9	Do the results and conclusions satisfy the purpose and objective of the Design Analysis?	Why was the analysis being performed? Does the stated purpose match the expectation from Exelon on the proposed application of the results? **If** yes, **then** the analysis meets the needs of the contract.	☒ ☐ ☐
10	Are the results and conclusions compatible with the way the plant is operated and with the licensing basis?	Make sure that the results support the UFSAR defined system design and operating conditions, or they support a proposed change to those conditions. If the analysis supports a change, are all of the other changing documents included on the cover sheet as impacted documents?	☒ ☐ ☐
11	Have any limitations on the use of the results been identified and transmitted to the appropriate organizations?	Does the analysis support a temporary condition or procedure change? Make sure that any other documents needing to be updated are included and clearly delineated in the design analysis. Make sure that the cover sheet includes the other documents where the results of this analysis provide the input.	☐ ☐ ☒
12	Have margin impacts been identified and documented appropriately for any negative impacts (Reference ER-AA-2007)?	Make sure that the impacts to margin are clearly shown within the body of the analysis. If the analysis results in reduced margins ensure that this has been appropriately dispositioned in the EC being used to issue the analysis.	☒ ☐ ☐
13	Does the Design Analysis include the applicable design basis documentation?	Are there sufficient documents included to support the sources of input, and other reference material that is not readily retrievable in Exelon controlled Documents?	☒ ☐ ☐
14	Have all affected design analyses been documented on the Affected Documents List (ADL) for the associated Configuration Change?	Determine if sufficient searches have been performed to identify any related analyses that need to be revised along with the base analysis. It may be necessary to perform some basic searches to validate this.	☒ ☐ ☐
15	Do the sources of inputs **and** analysis methodology used meet committed technical and regulatory requirements?	Compare any referenced codes and standards to the current design basis and ensure that any differences are reconciled. If the input sources **or** analysis methodology are based on an out-of-date methodology or code, additional reconciliation may be required if the site has since committed to a more recent code	☒ ☐ ☐

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis
Page 3 of 3

Design Analysis No.: JAF-CALC-19-00001 **_Rev: _0**

No	Question	Instructions and Guidance	Yes / No / N/A
16	Have vendor supporting technical documents and references (including GE DRFs) been reviewed when necessary?	Based on the risk assessment performed during the pre-job brief for the analysis (per HU-AA-1212), ensure that sufficient reviews of any supporting documents not provided with the final analysis are performed.	☒ ☐ ☐
17	Do operational limits support assumptions and inputs?	Ensure the Tech Specs, Operating Procedures, etc. contain operational limits that support the analysis assumptions and inputs.	☒ ☐ ☐
18.	List the critical characteristics of the product, and validate those critical characteristics. Drawdown time		

Create an SFMS entry as required by CC-AA-4008. SFMS Number: _____

Table of Contents

1. PURPOSE

The purpose of this analysis is to determine the Reactor Building (RB) pressure response following a design basis loss of coolant accident (LOCA) at the James A. Fitzpatrick (JAF) Nuclear Power Plant.

The Reactor Building forms part of the Secondary Containment (SC). (Ref. 4.b) The Reactor Building is normally maintained at a slight negative gauge pressure by the Reactor Building Ventilation system. Following an accident, the Reactor Building Ventilation system isolates and the Standby Gas Treatment system (SGT) is initiated. If the RB pressure is positive with respect to the outside air pressure, then any leakage from the Reactor Building is out-leakage. NRC RG 1.183 Appendix A paragraph 4.2 (Ref. 1) states that leakage from Primary Containment is assumed to be released directly to the environment as a ground-level release during any period in which the Secondary Containment does not have a negative pressure as defined in the Technical Specifications. RG 1.183 also states that the effect of high wind speeds on the ability of the secondary containment to maintain a negative pressure should be evaluated on an individual case basis. RG 1.183 also states that ambient temperature used in these assessments should be conservative for the intended use, e.g. high temperatures or low temperatures according to which is more limiting. Therefore, RB pressures will be calculated for both summer and winter conditions to determine the most limiting conditions. RB pressures will also be calculated for calm conditions and at the maximum assumed wind speed. JAF Technical Specification (TS) SR 3.6.4.1.4 states that the RB/SC pressure, measured with respect to the external ambient pressure, be -0.25 inwg or less. The time duration after the LOCA occurs that the RB/SC pressure is greater than -0.25 inwg is referred to as the drawdown time in this analysis.

2. INPUTS

1. One SGT subsystem can maintain the Secondary Containment at a minimum vacuum pressure of 0.25 inwg with a maximum SGT flow rate of 6000 cfm under calm wind conditions. (Refs. 2.c, 2.e, 4.b) Note: This analysis uses a lower SGT flow rate per Assumption 24 for conservatism.

2. Both SGT subsystems are initiated on a SC isolation signal after a LOCA. (Refs. 2.e, 4.b, 6)

3. The two normally closed SGT isolation valves in each subsystem have a maximum opening time of less than 9.5 seconds. (Refs. 8, 9, 24)

4. The RB ventilation above refueling floor exhaust fans trip and RB ventilation/SC isolation valves begin closing immediately after a LOCA initiation signal, i.e. high drywell pressure, low reactor water level or high drywell radiation. The closure of the isolation valves isolates the Reactor Building ventilation supply and exhaust from and to the outside air. (Refs. 4.b, 4.e, 40, 47)

5. The maximum closing time of the normally open RB ventilation supply and exhaust SC isolation valves are 15 and 5 seconds, respectively. (Refs. 2.d, 3)

6. Additional model inputs such as heat sinks, volumes, flow paths and heat loads are provided in Attachment C based on References 33, 34 and 35.

3. ASSUMPTIONS

RG 1.183 states that assumptions regarding the occurrence and timing of a loss of offsite power (LOOP) should be selected with the objective of maximizing the postulated radiological consequences. Therefore, LOOP or no/LOOP conditions are conservatively utilized for the individual assumptions to maximize the drawdown time: LOOP conditions are assumed for SGT operation (see Assumption 23) and Suppression Pool temperature response (Assumption 9) while no LOOP conditions are assumed for the Reactor Building heat loads (Assumption 11) and RB ventilation flow rates after isolation valve closure (Assumption 28). Therefore, separate cases for LOOP and no LOOP conditions are not required to determine which condition provides the limiting drawdown time. However, this added conservatism does not result in excessive margin in the limiting drawdown time.

1. The outside air temperature is assumed to remain constant at the summer design temperature of 93 ^{o}F during summer conditions (Ref.4.e) and at -10 ^{o}F during winter conditions. (Ref. 40) Per RG 1.183 (Ref. 1) , the ambient temperature should be the 1-hour average value that is exceeded only 5% (for summer conditions) and 95% (for winter conditions) of the total number of hours in the data set. The assumed temperatures conservatively bound the local summer 1% and winter 99% values of 85 ^{o}F and 2 ^{o}F, respectively, for Syracuse, New York from Reference 43 Chapter 26 Tables 1A and 1B.

2. The outside air relative humidity is 0%, which results in the highest air density at a given temperature. (Ref. 43 Chapter 6 Table 2) This will conservatively provide the maximum mass of air in-leakage into the Reactor Building and will result in the highest wind pressures.

3. The outside air pressure is the standard atmospheric pressure of 14.7 psia at the JAF RB ground floor elevation of 272 ft. (Ref. 16)

4. The initial temperature of the Reactor Building is maintained at the maximum RB environmental temperature of 104 ^{o}F during summer conditions and at the normal temperature of 70 ^{o}F during winter conditions. (Ref. 4.c) These represent the upper and lower bounds of the RB temperature during normal operation for the range of outside air temperatures from Assumption 1.

5. The initial relative humidity in the Reactor Building is at the minimum of 20% during normal conditions. (Ref. 4.c) Moist air has a lower density than dry air at a given temperature (Ref. 43 Chapter 6 Table 2) and results in the minimum mass of air removed from the Reactor Building during SGT operation. However, dry air has a much lower enthalpy than moist air. Therefore, using the minimum humidity results in the fastest room heat-up rates and longest drawdown times.

6. Only the stairwell from the 227’-6” elevation to the 272’ elevation and the large equipment hatches in the Reactor Building floors from the 300’ elevation up the refueling floor at elevation 369’6” are credited as RB flow paths in the analysis. The area of other stairwells

and penetrations between RB levels will be conservatively neglected in calculating the Reactor Building flow areas to maximize the pressure difference between RB volumes. Maximizing the pressure difference between RB volumes results in the highest RB pressures in volumes further away from the SGT suction location and the minimum RB pressure differentials with respect to the external ambient pressure in these volumes.

7. Each of the RB openings is assumed to have a loss coefficient of 2.85 to maximize the pressure difference between volumes. This corresponds to the maximum loss coefficient for a wall opening per Diagram 4-18 of Ref. 45 and conservatively bounds the junction loss coefficients calculated in Ref. 33. Friction losses in the RB internal flow paths are negligible compared to the assumed loss coefficient.

8. Heat transfer from external Reactor Building walls to adjacent areas and to the external environment will be conservatively neglected. However, heat transfer from the Reactor Building to the internal surfaces of the external and internal concrete walls, floors and ceilings will be included, but with an insulated (adiabatic) boundary condition on the outer surface to prevent heat transfer from this surface to the adjacent areas. Heat transfer to the walls and roof of the 369'6" refueling floor walls and ceiling will be conservatively neglected.

9. The LOCA suppression pool (SP) temperature profiles from the Reference 31 and 32 containment analyses will be combined to give a bounding SP temperature profile. This bounding profile will be conservatively used for both summer and winter conditions. This conservatively assumes LOCA/LOOP conditions and maximum initial and cooling water temperatures.

10. A constant LOCA heat load of 628,800 BTU/s will be assumed for each of the two crescent areas in the RB basement. (Refs. 30, 47)

11. Normal operating heat loads from References 34 and 35 will be assumed for elevations 272' and above, except for the RHR heat exchanger (HX) rooms, which are discussed in Assumption 12 below. (Ref. 47) These normal operating heat loads are conservative, since some of the equipment would not be operating after a LOCA and some piping heat loads would decrease after the respective systems are isolated. The normal heat loads are also appropriate for LOOP heat loads since, although much of the equipment would not be operating after a LOOP, the residual heat loads from the deenergized equipment and associated piping would not significantly decay during the relatively short drawdown period.

    The normal heat loads from References 34 and 35 also account for the RB heat loads through the concrete walls from the higher temperature drywell (DW), spent fuel pool (SFP) and steam tunnel and the refueling floor heat loads from external environment, including solar heat gain. A DW temperature of 150 ^{o}F, which bounds the maximum DW temperature of 135 ^{o}F (Ref. 2.a) during normal operation, is used in Ref. 34 to calculate the heat load from the drywell. Although the DW temperature increases immediately after a LOCA per Reference 31, the wall thickness of the DW walls (6 ft average per Ref. 34) will prevent this temperature increase from penetrating through the DW walls during the relatively short SC drawdown time.

12. The RHR HX room heat loads are conservatively based on RHR HX and piping temperature of 170^{o}F, which bounds the LOCA SP temperatures from Refs. 31 and 32 during the RB drawdown period, i.e. less than one hour after the LOCA.

13. A constant spent fuel pool (SFP) temperature of 125 ^{o}F will be conservatively assumed for calculating the heat load and evaporation from the spent fuel pool. The SFP temperature is normally maintained below 125 ^{o}F during normal operation. (Ref. 4.d, 5, 47)

14. The total heat removal capacities of the safety related crescent area coolers in each crescent is equal to the minimum required heat removal capacity of 628,800 BTU/hr at a 110 ^{o}F crescent area temperature and 85 ^{o}F cooling water. (Reference 30, 47). Because the cooler capacities are based on non-winter conditions, they are conservative for winter conditions since the cooling water temperature supplied to the coolers will be lower and the cooler temperature differences and heat removal would be greater. No credit is assumed for heat removal by non-safety related coolers in the Reactor Building.

15. The total heat removal of the crescent area coolers in the RB basement is equal to the heat removal of the coolers in both the east and west crescents. There could be fewer room coolers operating for a LOOP scenario with a single failure of one DG. However, crescent area heat loads would also be significantly lower with the failure of a DG since fewer ECCS pumps would be operating.

16. The compressive effect of primary containment expansion and the effect of primary containment leakage on secondary containment pressurization is negligible.

17. There are several potential leakage locations in the JAF Reactor Building including the airlock doors on the various levels of the Reactor Building, the RB ventilation system isolation valves and the insulated metal siding on the refueling floor elevation. (Ref. 10-15, 20, 21, 23) SC leak test surveillance procedure ST-39D limits the RB leakage to the TS SR criteria of 6000 cfm at 0.25 inwg differential pressure with either the inner or outer door(s) in each airlock open. (Ref. 10, Design Input 1) However, both doors in each airlock would normally be closed except for ingress and egress. Therefore, the TS allowed leakage of 6000 cfm at a 0.25 inwg differential pressure is used to develop a conservative bounding-low flow resistance assuming one of the door(s) in each airlock is open. This resistance is used to dynamically calculate a conservatively high in-leakage flow rate during the transient assuming both doors in each airlock are closed in series. (Ref. 47)

18. The leakage distribution among the potential RB leakage locations is not known. Therefore, all RB in-leakage is assumed to be on the refueling floor elevation and the leakage is assumed to be distributed on each side of the Reactor Building based on the wall surface area. (Ref. 47) This is a reasonable assumption since this is consistent with the elevation of the RB pressure sensors used to measure the differential pressure corresponding to the calculated leakage. (Ref. 10, 24, 47) There are other potential leakage locations at other elevations in the Reactor Building. (see Assumption 17) However, the assumed leakage location has a relatively minor effect on the drawdown time since Reactor Building is relatively open between elevations and the drawdown time is dominated by the total in-leakage rate and not the assumed leakage location.

19. No credit is assumed for secondary containment out-leakage. (Ref. 29)

20. A maximum wind speed of 20 mph will be assumed for the analysis. Per RG 1.183 (Ref. 1), the wind speed to be assumed is the 1-hour average value that is exceeded only 5% of the total number of hours in the data set. The assumed wind speed is equal to the 5% wind speed of 20 mph for Syracuse, New York from Table 1A in Chapter 26 of Reference 43.

21. The wind will be assumed to be from the south. This will result in the largest RB pressurization and infiltration due to wind effects since the wind pressures will be highest on the RB wall with the largest exposed surface area. (Refs. 11, 21)

22. There is a single failure of that results in a failure of one of the two SGT systems to start after the LOCA. For the purposes of this calculation, it will be assumed that SGT train A fails and that Train B is available. The SGT can take suction from all elevations of the Reactor Building. (Ref. 24) However, SGT train A automatically aligns to take suction from above the 369' refueling floor while SGT train B aligns to take suction from each of the elevations below the refueling floor. (Ref. 6) The assumed SGT suction location has a relatively minor effect on the drawdown time since Reactor Building is relatively open between elevations. However, suction from below the refueling floor with SGT train B operating results in slightly longer drawdown times than with suction from above the refueling floor with SGT train A operating. With only SGT train B operating, the suction from each RB elevation below the refueling floor is assumed to be 20% of the total SGT flow rate based on the flow rates shown on Reference 24.

23. No SGT flow is credited until 21 seconds after the LOCA occurs. This accounts for a 11 second delay for loading the SGT fan onto the diesel generator (DG) bus after the LOCA/LOOP occurs and an additional 10 seconds until the SGT isolation valves are fully open. (Ref. 2.e Bases, 2.g Bases, 4.f, 8, 9, 24, 47)

24. After the isolation valves are fully open, the SGT system flow rate is controlled to a minimum of 5600 cfm by the throttle position of the manual valve located on the SGT fan inlet. (Ref. 6, 10, 24, 47)

25. The RB building pressure and the wind pressure at the SGT exhaust stack outlet have a negligible effect on the SGT flow rate. This is conservative during RB pressurization after the LOCA since positive RB pressures will tend to decrease the static head required by the fan and increase the SGT flow rates. The vacuum pressure developed by wind blowing across the outlet of the SGT exhaust stack will also tend to increase the SGT flow. However, the vacuum pressures developed by wind effects at outlet of the SGT exhaust stack and the negative RB pressures developed after the period of RB pressurization are small compared to the static head delivered by the SGT fan and will therefore have a negligible effect on the SGT flow rate.

26. Two RB ventilation supply fans, one above refueling floor exhaust fan and one below refueling floor exhaust fan are operating prior to the LOCA. (Refs.7, 23, 40)

27. The initial RB/SC pressure prior to the LOCA is at the minimum vacuum pressure of 0.25 inwg vacuum maintained by the RB ventilation systems during normal operation. (Ref. 2.c , 4.b, 4.e, 7) This is the average negative internal RB pressure measured by four differential pressure sensors located at the refueling floor elevation. (Ref. 23, 47) Using the minimum vacuum pressure results in the highest RB pressurization after isolation and the longest drawdown time.

28. The RB supply and exhaust flow rates during SC isolation valve closure are equal to the values from Reference 38. The RB ventilation supply fans and below refueling floor exhaust fans continue operating in a recirculation mode after the LOCA with no LOOP. (Refs. 4.b, 4.e, 40, 47) However, no credit is assumed for the RB ventilation recirculation flow after the isolation valves close since this would tend to equalize the temperatures and pressures in the model of the Reactor Building used for this analysis.

4. REFERENCES

1. NRC Regulatory Guide 1.183, Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors, July 2000.

2. JAF Technical Specifications through Amendment 324 and TS Bases Rev. 39.

    a. 3.6.1.5 Drywell Air Temperature

    b. 3.6.2.1 Suppression Pool Average Temperature

    c. 3.6.4.1 Secondary Containment

    d. 3.6.4.2 Secondary Containment Isolation Valves (SCIVs)

    e. 3.6.4.3 Standby Gas Treatment (SGT) System

    f. 3.7.2 Emergency Service Water (ESW) System and Ultimate Heat Sink (UHS)

    g. 3.8.1 AC Sources - Operating

3. JAF Technical Requirements Manual (TRM) Table B-1, Secondary Containment Isolation Valves, Rev. 31.

4. JAF Updated Final Safety Analysis Report (UFSAR), Rev. 6.

    a. Section 5.2, Primary Containment System

    b. Section 5.3, Secondary Containment

    c. Table 7.2-2, Reactor Protection System, Instrumentation Environmental Specifications, Normal Conditions

    d. Section 9.1.3, Spent Fuel Pool Cooling and Cleanup System

e. Section 9.9, Heating, Ventilating and Air Conditioning Systems

f. Section 8.3.1.6, Standby Emergency Diesel Generator System

5. Procedure OP-30, Fuel Pool Cooling And Clean-Up System, Rev. 44.
6. Procedure OP-20, Standby Gas Treatment System Auto Start, Rev. 40.
7. Procedure OP-51A, Reactor Building Ventilation and Cooling System, Rev. 51.
8. Procedure ST-7E, Standby Gas Treatment Fan A and Valve Exercising (IST), Rev. 11
9. Procedure ST-7F, Standby Gas Treatment Fan B and Valve Exercising (IST), Rev. 6
10. Procedure ST-39D, Secondary Containment Leak Test, Rev. 25.
11. Drawing FM-1A, Machine Location Reactor Building Sh. 1, Plan El. 369'-6", Rev. 13.
12. Drawing FM-1B, Machine Location Reactor Building Sh. 2, Plan El. 344'-6", Rev. 15.
13. Drawing FM-1C, Machine Location Reactor Building Sh. 3, Plan El. 326'-9", Rev. 13.
14. Drawing FM-1D, Machine Location Reactor Building Sh. 4, Plan El. 300-0", Rev. 20.
15. Drawing FM-1E, Machine Location Reactor Building Sh. 5, Plan El. 272'0", Rev. 32.
16. Drawing FM-1F, Machine Location Reactor Building Sh. 6, Plan El. 227'-6", Rev. 18.
17. Drawing FM-1G, Machine Location Reactor Building Sh. 7, Section 1-1, Rev. 11
18. Drawing FA-10D, Reactor Bldg Roof Plan, Rev. 7.
19. Drawing FA-10B, Reactor Bldg Plans, Elevations, & Dets. Duct Enclosure, Rev. 6
20. Drawing FA-11A, Reactor Bldg North & South Elevations, Rev. 3.
21. Drawing FA-11B, Reactor Bldg East & West Elevations, Rev. 6.
22. Drawing FA-2G, General Arrangement Elevations, Rev. 5.
23. Drawing FB-8A, Flow Diagram Reactor Building Vent & Cooling System 66, Rev. 34.
24. Drawing FM-48A, Flow Diagram, Standby Gas Treatment System 01-125, Rev. 32.
25. Drawing FB-9J, Reactor Bldg, Secondary Cont Air Cooling Heating & Purging Plan El. 344'-6", Rev. 16.
26. Drawing FB-9K, Reactor Bldg, Secondary Cont Air Cooling Heating & Purging Plan El. 369'-6", Rev. 9.

27. Drawing FB-9N, Reactor Bldg, Secondary Cont Air Cooling Heating & Purging Section Sh 2, Rev. 11.

28. Drawing FV-9A, Spent Fuel Pool Liner Details Sh 1, Rev. 6.

29. Standard Review Plan (SRP) 6.2.3, Secondary Containment Functional Design, from NUREG-0800: Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition, Revision 3, March 2007.

30. SWEC Calculation JAF-CALC-SWS-02174, Increase in Crescent Area Heat Load Due to Elevated Lake Temperatures Above 82 ^{o}F, Rev. 1

31. General Electric Report GE-NE-T23-00737-01, James A. Fitzpatrick Nuclear Power Plant Higher RHR Service Water Temperature Analysis, August 1996, DRF T23-00737.

32. General Electric Report GE-NE-T23-00766-00-01, James A. Fitzpatrick Nuclear Power Plant Containment Analysis, October 1999.

33. Calculation JAF-CALC-04-00430, Effect of the Revised Mass and Energy Release from the HPCI Pipe Breaks on the Reactor Building Pressure and Temperature, Rev. 0.

34. SWEC Calculation 66-4, Heat Gain Calculation, 1/12/01

35. SWEC Calculation 66-5, Summary of CFM Required, 10/27/70

36. SWEC Calculation 66-29, Reactor Bldg – Secondary Cont Exhaust from El. 227’6” & Above, 12/28/70

37. SWEC Calculation 66--29, Reactor Bldg – Secondary Cont Supply for El. 272’-0”, 300’-0”, 326’-9”, 344’-6”, 369’-6”227’6”, 12/22/70

38. Calculation JAF-CALC-RBC-03042, Reactor Building Exfiltration During Transition Time from Normal to Isolation Mode, Rev. 0.

39. Calculation JAF-CALC-RAD-00007, Power Uprate Program – Onsite and Offiste Post-Accident Atmospheric Dispersion Factors, Rev. 2.

40. DBD-066, Design Basis Document for the Reactor Building Heating, Ventilation and Air Condition Systems, Rev. 1

41. GOTHIC Thermal Hydraulic Analysis Package User Manual, Version 8.2(QA), October 2016.

42. GOTHIC Thermal Hydraulic Analysis Package Technical Manual, Version 8.2(QA), October 2016.

43. Fundamentals Handbook, ASHRAE, 1997.

44. HVAC Applications Handbook, ASHRAE, 1999.

45. Handbook of Hydraulic Resistance, Idelchik, 3rd Edition.

46. Marks' Standard Handbook for Mechanical Engineers, Eighth Edition.

47. Exelon TODI No. TODI-JAF-EC626767-01, Input Parameters for JAF Secondary Containment Drawdown Analysis, date 2/13/19.

5. COMPUTER PROGRAMS

GOTHIC version 8.2 (Ref. 41, 42) is used to calculate the Reactor Building temperature and pressure response for the assumed scenario. GOTHIC error notices pertaining to version 8.2 were reviewed and none were identified which are applicable to the model used in this analysis.

6. METHOD OF ANALYSIS

The volume, junction and heat sink data for the JAF subcompartment analysis from Reference 33 was used as the basis for the Reactor Building geometry. The Reactor Building geometry and heat loads from these references were consolidated to use fewer volumes and fewer corresponding inputs. These were then used to construct a corresponding GOTHIC model with control volumes, internal RB flow paths, and thermal conductors. Inputs were updated to match the inputs and assumptions used in this calculation. Volumes, boundary conditions, flow paths, and fan, heater and cooler components were then added to the GOTHIC model to simulate the SGT system, RB ventilation system, Reactor Building leakage, RB heat loads, crescent area coolers, and SFP evaporation necessary to model the building pressure response after a LOCA. Attachment A shows a schematic of the GOTHIC model used in this analysis. The following sections discuss the modeling approach and Section 7 develops the inputs that are used in the GOTHIC model.

Four cases were analyzed with the GOTHIC model to envelope the assumed environmental conditions: 1 - summer with no wind, 2 – summer with wind, 3 - winter with no wind, and 4 – winter with wind. (Attachment B shows the GOTHIC input file for Case 1 and the changes for Cases 2, 3, and 4.) The following sequence of major events is postulated for this calculation:

1. The plant is initially in normal operation with the RB ventilation system maintaining the specified RB vacuum pressure.

2. A DBA LOCA is assumed to occur with a concurrent LOOP. (Note: LOOP conditions are conservatively assumed for SGT system operation while RB heat loads and RB ventilation flow rates during isolation valve closure are conservatively based on no LOOP conditions to give a conservative drawdown time that bounds both LOOP and no LOOP conditions.)

3. The secondary containment is isolated by closing the RB ventilation system isolation valves and the RB ventilation system above refueling floor exhaust fans are tripped.

4. The diesel generators start and only one of the SGT systems is loaded onto DG bus at 11 seconds after the LOCA occurs after a single failure of the second SGT systems.

5. The SGT fan starts and the isolation valves are fully to open after at 21 seconds after the LOCA occurs.

6. The SGT system flow rate is controlled to a minimum of 5600 cfm after the SGT isolation valves are fully open.

RB Control Volumes

The Reactor Building GOTHIC model is divided into six (6) GOTHIC control volumes, one for each level from the basement up to the refueling floor. (CV# 1-6 in Attachment A) The volume for each control volume consists of the volumes for each of the rooms on the corresponding level from Table 1 of Ref. 33. The height of each control volume below the refueling floor is calculated as the elevation difference between levels and the height of the refueling floor is calculating using the RB roof elevation. The hydraulic diameter of each control volume is calculated using Eqn. 11.1 of Ref. 41.

RB Flow Paths

Each of the GOTHIC control volumes are connected by flow paths to model the flow between levels. (FP# 1-5 in Attachment A) The dimensions used for each of the flow paths are from Table 2 of Reference 33. The center to center distance between connecting control volumes is used as the inertia length, consistent with guidance provide in Ref. 41. A loss coefficient of 2.85 is used for each RB flow path per assumption 7.

RB Thermal Conductors

GOTHIC thermal conductors (TC# 1-6 in Attachment B) were used to model heat transfer to the internal and external RB concrete surfaces. A single thermal conductor is used in each RB control volume to represent the concrete walls, floor and ceiling in that volume. The common RB concrete surface areas for each volume from Table 3 of Reference 33 were combined to reduce the number of thermal conductors in the GOTHIC model. Heat transfer to adjacent areas was conservatively neglected by modeling the concrete surfaces as internal conductors with an insulated boundary condition on one surface. (Assumption 8) Heat transfer between adjacent areas will be negligible during the relatively short drawdown period due to the thickness of the walls and floors.

A thermal conductor for the suppression pool in the torus area was also included to model the time dependent heat transfer from the torus surface to the Reactor Building. (TC # 7 in Attachment B) Separate thermal conductors were not included for the DW and SFP walls since the heat transfer from the DW and SFP to the Reactor Building is included in the RB heat load inputs discussed below. However, a separate thermal conduction was used for the heat transfer from the SFP surface to the 369’6” refueling floor elevation.

RB Heat Loads

GOTHIC heaters are used to represent the electrical and mechanical heat loads in the Reactor Building. A single GOTHIC heater component is used in each of the RB control volumes. (Heater# 1H-6H in Attachment A) The total heat load for each control volume consists of the heat load from each of the rooms on the corresponding level. The heat load from Reference 30 is used for each of the two crescent areas in the RB basement at elevation 227'6". (Assumption 10) The normal heat loads from References 34 and 35 are used for each RB above grade elevations, except for the RHR HX rooms. (Assumption 11) The RHR HX room heat loads are calculated by adjusting the RHR HX and piping heat loads from References 34 and 35, which are based on RHR HX and piping temperatures during shutdown conditions, for the LOCA RHR HX and piping temperatures during the drawdown period. (Assumption 12) A GOTHIC trip is used to turn the heaters on when the LOCA occurs.

RB Coolers

A single GOTHIC cooler is used in the RB basement control volume to represent the total heat removal of the crescent area coolers. (Cooler# 7C in Attachment A) The heat removal of the cooler component is specified as the minimum required heat removal from the coolers in both crescents. (Assumptions 14, 15) A GOTHIC trip is used to turn the cooler component on when the LOCA occurs.

External Environment

Five GOTHIC control volumes connected to boundary conditions with flow paths are used to represent the external environment: one on each face of the Reactor Building and one for the exhaust of the SGT and RB ventilation systems. (BC# 1P, 2F, 3P, 4F, 5P, 6F, 9P, 10F, 11P, 12F, CV# 12-14 and 19-20, and FP# 21-26 and 59-62 in Attachment A) Separate environmental control volumes are used since the external pressure varies based on the assumed wind direction due to the different building pressure coefficients on each surface of the Reactor Building. The pressure used for the boundary condition is calculated as a function of the wind speed and the temperature and relative humidity are set equal to the assumed summer conditions of 93 ^{o}F with 0% humidity or the assumed winter conditions of -10 ^{o}F with 0% humidity. (Assumptions 1 and 2)

RB Leakage

Four flow paths, one on each wall of the refueling floor are used for the RB leakage and to measure the differential pressures between the RB refueling floor and the external environment. (FP# 30-33 in Attachment A) The total leakage area for the RB leakage flow paths is based on two openings in series, each of which acting independently limits leakage to 6000 cfm at 0.25 inwg differential pressure, and is distributed among the four leakage flow paths on the refueling floor. (Assumptions 17 and 18) Additional flow paths, with no leakage, are used to determine the differential pressure between the RB levels below the refueling floor and the external environment. (FP# 34-38 in Attachment A) GOTHIC control variables are used to convert the differential pressure across these flow paths from units of psi to inwg and to calculate the average RB pressure differential on the refueling floor.

SGT

Six GOTHIC flow paths, one connected to each of the Reactor Building control volumes, are used to represent SGT suction flows from each of the RB elevations. (FP# 39-44 in Attachment A) A GOTHIC flow boundary conditions (BC# 11F-16F in Attachment A) are used to specify the SGT suction flow rate distribution from each of the elevations. A GOTHIC function is used to initiate the SGT flow rate after the LOCA occurs. (Note: The current analysis credits SGT suction from below the 369' refueling floor elevation per Assumption 22 but SGT suction flow paths are included from all RB elevations to provide additional model flexibility.)

RB Ventilation System

Two GOTHIC control volumes (CV# 7 and 8 in Attachment A) are used to represent the RB ventilation supply and exhaust systems. (Ref. 23) These RB ventilation system control volumes are connected with GOTHIC flow paths (FP# 18-29 in Attachment A) to the control volumes for each level of the Reactor Building. The RB ventilation supply and exhaust control volumes are also connected to the corresponding ambient air control volumes with a flow path. (FP# 16 and 17 in Attachment A) The supply control volume is connected to the west ambient control volume since the supply intake is located on the west side of the building and the exhaust control volume is connected to the exhaust control volume. A constant volume fan component representing either the RB ventilation supply or exhaust fans is used on each of these flow paths. (Fan# 1Q and 2Q in Attachment A) The supply and exhaust flow rates of the supply and exhaust fan components are specified with GOTHIC functions to provide the normal ventilation flow rates prior to the LOCA and the required flow variation during closure of the SC isolation valves. The flow rate of the RB exhaust fan components is also controlled with GOTHIC trips to maintain the assumed average initial RB pressure on the Refueling floor before the LOCA occurs.

SFP Evaporation

SFP evaporation is conservatively treated as a constant mass flow rate of water vapor by adding a flow boundary condition for the SFP evaporation rate from the SFP. (BC# 17F in Attachment A) This flow boundary conditions was connected to the refueling floor control volume with a GOTHIC flow path. (FP# 45 in Attachment A) The SFP evaporation rate was determined using an ASHRAE equation for pool evaporation.

Time Domains

Three time domains were specified for the solution. The first two time domains are used to stabilize initial conditions before the LOCA occurs. The first time domain before the LOCA was used to initialize the room pressures and the second was used to initialize the conductor temperatures. The third time domain is used to represent the time after the postulated LOCA occurs.

GOTHIC trips and functions are used in the model to control the time dependent aspects of the model. During the first two initial time domains, GOTHIC trips and functions are used to maintain the Reactor Building at the assumed initial pressure, temperature and humidity. During this time, the initial RB room and humidity temperature is used for the outside air

temperature and humidity, heat transfer to the RB thermal conductors was set to zero and the RB volume heater components, crescent area cooler components and SFP evaporation are turned off to maintain the assumed initial conditions. The initial RB pressure is maintained by cycling the RB ventilation exhaust fan components with GOTHIC trips to control the RB exhaust flow. A large value of the DT ratio is used for the second time domain to initialize the conductor temperatures. A short time increment is also used for the second time domain to prevent the room temperatures from changing due to heat transfer to or from the thermal conductors. During third LOCA time domain, the outside air temperature and humidity is set equal to the assumed outdoor air conditions, heat transfer to the conductors and SFP evaporation is initialized and the RB volume heater and crescent area cooler components are turned on. Functions are also used to specify the time dependent SGT and RB ventilation system supply and exhaust flows.

7. NUMERIC ANALYSIS

The calculations for the GOTHIC version 8.2 inputs are outlined in the following sections. Many of the calculations are performed in Attachment C. The GOTHIC input file for Case 1 and the changes for Cases 2, 3, and 4 are shown in Attachment B.

RB Control Volumes

The results of the computations for each of the RB control volumes are shown in Table 1 of Attachment C. The net room volumes from Table 1 of Ref. 33 are used to calculate the volume of each RB control volume. The total volume of each control volume includes the volumes for each of the rooms on the corresponding level of the Reactor Building. The heights of the control volumes are calculated using the elevation difference between levels. The height of the refueling floor control volume is calculating using a roof elevation of 429’ 11”. (Ref. 18) The hydraulic diameter of each control volume below the 369’6” elevation is calculated using Eqn. 11.1 of Ref. 41 using the total volume and the sum of the conductor surface areas for each control volume from Attachment C. For the 369’6” elevation control volume, the total surface area used to calculate the hydraulic diameter was increased by 125’*162’ + 2*(125’+162’)*60.42’ = 54,931 ft^2 to account for the additional surface area of the refueling level elevation walls and ceiling, based on guidance on the use of Eqn. 11.1 from Ref. 41.

RB Flow Paths

The inputs used for each of the RB flow paths are shown in Table 2 of Attachment C. The flow areas and hydraulic diameters used for each of the RB flow paths are from Table 2 of Ref. 33. The elevations of the flow paths are based on the corresponding floor elevations. A height of 1 ft is used for the flow paths between elevations and the lower elevation is based on a floor thickness of 1 ft since this will have a negligible effect on the analysis. Only the stairwell from the 227’-6” elevation to the 272’ elevation and the large equipment hatches in the Reactor Building floors from the 300’ elevation up the refueling floor at elevation 369’6” are credited as RB flow paths in the analysis consistent with assumption 6. A loss coefficient of 2.85 is used for each of the RB flow paths per assumption 7 and the friction length is set equal to zero since the friction losses are negligible. The center to center distance between connecting control volumes is used as the RB flow path inertia length per Ref. 41. The volume heights from Table 1 of

Attachment C are used to calculate the inertia lengths of the flow paths between elevations (Ref. 11-16).

RB Thermal Conductors

Table 3 of Attachment C shows the results of the computations for each of the RB GOTHIC thermal conductors. The surface area of each RB thermal conductor (TC# 1-6) is the sum of the common RB surfaces areas for each elevation from Table 3 of Ref. 33, which include the wall, floor and ceiling surface area in each volume. A wall thickness of 1 ft was used for the RB wall thermal conductors to conservatively minimize the thermal mass of the walls. A thermal conductor (TC #7) for the suppression pool is also included in the RB basement control volume (CV #1). The surface area of the torus conductor is calculated as: (Ref. 46)

$$A_{SP} = 4\pi^2 Rr = 4\pi^2(108/2)(29.5/2) = \ 31{,}445 ft^2$$

Where 108' and 29.5' are the major and minor diameters of the torus, respectively. (Ref. 4.a) A wall thickness of 0.5 inch was used for the torus wall thickness to minimize the thermal mass of the torus shell. A thermal conductor (TC #8) for the SFP surface was include in the 369'6" refueling floor control volume (CV #6). The surface area of the SFP conduction is calculated as:

$$A_{SFP} = 31' * 40' = 1240 ft^2$$

based on the SFP dimensions from Ref. 28. The concrete, steel and water thermal properties from Ref. 43 were used for each of the RB wall, torus and SFP thermal conductors, respectively. The initial RB temperature is used for each of the thermal conductors. This is acceptable since an initial time period is used during the solution procedure to initialize the temperature profile in the thermal conductors prior to the LOCA as described in the Run Control section.

The heat transfer coefficients for the sides of RB thermal conductors exposed to the RB internal environment are calculated using the GOTHIC natural convection correlations. As described in the Run Control section, heat transfer from these surfaces is prevented to maintain the assumed RB initial temperatures during the initial two time domains by specifying a zero heat transfer coefficient via use of a GOTHIC function. The outside surface of concrete walls to adjacent areas was conservatively modeled as an insulated boundary condition to prevent heat transfer to the adjacent areas. (Assumption 8) A constant SFP temperature of 125 ^{o}F is used SFP thermal conductor per Assumption 13. A constant SP temperature of 95 ^{o}F is used for the torus thermal conductor prior to the LOCA (Ref. 2.b) and the time dependent SP temperature is used after the LOCA per Assumption 9. The data from Ref. Appendix A of Ref. 32 is used up until 10 minutes after the LOCA and the data from Table 5-9 of Ref. 31 after 10 minutes to provide a bounding LOCA SP temperature profile. The time dependent SP temperature boundary condition is specified via a GOTHIC forcing function.

RB Heat Loads

Table 4 of Attachment C shows the results of the computation for each of the GOTHIC heaters used in each of the RB control volumes. The total heat load for each control volume consists of the heat load in each of the rooms on the corresponding level. A constant LOCA heat load of

2*628,800 = 1,257,600 BTU/hr = 349.3 BTU/s is used for the crescent areas in the RB basement at elevation 227'6". (Assumption 10) The normal total heat loads from Reference 35 are used for each RB above grade elevations except for the RHR HX rooms and the 369'6" refueling floor elevation. (Assumption 11) The RHR HX and piping heat load from References 34 and 35 is 39,600 BTU at shutdown conditions with a 390 ^{o}F RHR HX and piping temperature. Adjusting for a maximum RHR HX and piping temperature of 170 ^{o}F for LOCA conditions during the drawdown period (Assumption 12) and adding the lighting heat load of 3800 BTU/hr gives a RHR HX room heat load of (170-104)/(390-104)*39,600 + 3800 = 12,938 BTU/hr. On the refueling floor elevation, the spent fuel pool heat load was not included in the total since a separate thermal conductor is used to model the heat transfer from the SFP surface and the exhaust fan heat load was not included since these fans trip on a LOCA initiation signal. A GOTHIC trip is used to turn the heater components on when the LOCA occurs.

RB Coolers

The total heat removal capability for the cooler component is equal to the minimum heat removal capacities of the coolers from Reference 30 in both the east and west crescent per Assumption 14 and 15, i.e. 2*628,800 BTU/hr = 1,257,600 BTU/hr = 349.3 BTU/s with a 110 ^{o}F crescent area temperature and 85 ^{o}F cooling water. A GOTHIC trip is used to turn the crescent area cooler component on when the LOCA occurs.

RB Leakage

The total Reactor Building in-leakage is based on two openings in series, each of which acting independently limits leakage to 6000 cfm at 0.25 inwg differential pressure. (Ref. 47, Assumption 17) The total RB leakage area is calculated based on one opening using Eqns. 9 and 29 from Chapter 32 of Ref. 43:

$$A = \left(\frac{Q}{4005}\right)\sqrt{\frac{K}{\Delta P}} = \left(\frac{6000}{4005}\right)\sqrt{\frac{2.85}{0.25}} = 5.06\ ft^2$$

Where:

A = leakage area, ft^2
Q = flow rate = 6000 cfm (Assumption 17)
ΔP = pressure difference = 0.25 inwg (Assumption 17)
K = assumed loss coefficient = 2.85 (Assumption 7)

The RB leakage area is calculated with the loss coefficient of 2.85 assumed for one of the RB leakage openings in series consistent with Assumption 7, giving a loss coefficient of 2*2.85 = 5.7 for two openings in series. (Note: The loss coefficient used to calculate the leakage is inconsequential if the leakage area is consistent with the loss coefficient used in the GOTHIC model since the leakage only depends on the ratio of the area to the loss coefficient.) The equivalent leakage at 0.25 inwg differential pressure for two openings in series with this leakage area is:

$$Q = 4005A\sqrt{\frac{\Delta P}{K}} = 4005 * 5.06\sqrt{\frac{0.25}{5.7}} = 4244\ cfm$$

The leakage area is divided among the four walls on the refueling floor based on the area of each wall, i.e. the leakage area for the north and south wall of the refueling floor is 162'/125' = 1.3 times that of the east and west walls. (Ref. 11, Assumption 18) Therefore, leakage areas of 5.06/4.6 = 1.1 ft^2 are used for the flow paths on the east and west walls and 5.06*1.3/4.6= 1.43 ft^2 for the flow paths on the north and south walls. The refueling floor elevation is used for the elevation of each flow path since this corresponds to the elevation of the four RB differential pressure sensors. (Refs. 24, 47) A reverse loss coefficient of 5.7 for two openings in series is used for each flow path, consistent with the assumed value used to calculate the leakage area across one opening. However, a large value is used for the forward loss coefficient of the leakage flow paths, i.e. the flow direction corresponding to out-leakage from the Reactor Building, to prevent out-leakage from the Reactor Building per Assumption 19. A friction length of zero is used for the leakage flow paths since the flow areas were calculated solely based on the assumed loss coefficient. Assumed values are used for the height of the flow path, the hydraulic diameter and the inertia length are inconsequential to the analysis. A small area is used for the flow paths used to measure the RB differential pressures below the refueling floor to prevent any flow in these flow paths.

External Environment

A large volume was used for each of the five GOTHIC control volumes representing the external environment. The elevation of each was set equal to the RB ground level elevation of 272 ft and the height was set equal to 400 ft to bound the height of the SGT exhaust stack. The elevation of each environment boundary condition was also set equal to the RB ground level elevation of 272 ft. The temperature and relative humidity of the environment boundary conditions are controlled via the use of forcing functions. These are set equal to the assumed Reactor Building initial conditions prior to the LOCA to prevent RB temperature and humidity changes during the stabilization period prior to the LOCA. After the LOCA occurs, these values are set equal to the assumed outdoor air conditions for summer or winter conditions. A large value is used for the volumetric flow rate of the flow boundary conditions so that the conditions in the environment control volumes change rapidly to maintain the assumed outdoor air conditions. The pressure used for each of the environment control volumes is equal to the assumed atmospheric pressure plus the surface pressure on the RB surface corresponding to the boundary condition. The surface pressure is calculated as a function of the wind speed using Eqn. 3 from Chapter 15 and Eqn. 8 from Chapter 32 of Ref. 43:

$$P_s = C_p P_v = C_p \rho \left(\frac{U}{1097}\right)^2$$

Where:

P_s = surface pressure difference = inwg
P_v = velocity pressure = inwg
C_p = pressure coefficient

U = wind velocity = 20 mph*5280/60 = 1760 fpm (Assumption 20)
ρ = air density = 0.0718 lb/ft^3 at 93 ^{o}F, 0 % RH summer conditions
= 0.0883 lb/ft^3 at -10 ^{o}F, 0% RH winter conditions
(Assumptions 1 and 2, Ref. 43 Chapter 6 Table 2)

Ref. 43 defines P_s as the difference between the pressure on the building surface and the local outdoor atmospheric pressure at the same level in an undisturbed wind approaching the building. Therefore, the surface pressure difference P_s is converted from inwg to psi by dividing by the conversion factor of 27.7 (Ref. 43 Chapter 35 Table 2) and added to the atmospheric pressure of 14.7 psia (assumption 3) to give the pressure for each environment boundary condition. A south wind is assumed for this analysis to maximize RB pressurization effects due to the wind. (Assumption 21) Building pressure coefficients of 0.8 and -0.43 will be used for the upwind (south), and downwind (north) sides of the Reactor Building and a value of -0.4 will be used for the sides parallel to the wind (east and west). These represent the maximum and minimum pressures coefficients at the locations of the RB pressure sensors on the refueling floor elevation. (Ref. 43 Chapter 15 Figure 5) Table 5 of Attachment C calculates the wind pressures and corresponding atmospheric pressures used for each of the environment boundary conditions at both summer and winter conditions. The pressure for the exhaust stack environment boundary condition is set equal to the assumed atmospheric pressure of 14.7 psia since the exhaust stacks are located above the elevation of the Reactor Building and will not be influenced by building wind effects. Parameters were chosen for the flow paths connecting the environment control volumes to boundary conditions so that they do not influence the results of the analysis.

SGT

The inlet elevation of each SGT flow path is set to the corresponding RB floor elevation and the outlet elevation to the SGBTS exhaust stack elevation of 656.6 ft, 385 ft above the grade elevation of 271’ 6”. (Ref. 39) The other flow rate parameters are not critical since the flow rate through the SGT flow paths is controlled by the attached boundary condition. The external ambient conditions are specified for each of the SGT boundary conditions and the flow rate in each boundary condition is set equal to the flow ratio of each flow path for the assumed SGT flow distribution. Therefore, based on Assumption 22 with only SGT train B operating and taking suction from below the 369’ elevation refueling floor, the flow ratio for the 369’ SGT elevation suction boundary condition is set equal to zero and the flow ratios for the boundary condition of the remaining SGT suction locations is set equal to 0.2, i.e. equal suction flow from each level below the refueling floor. A forcing function is used to control the total SGT system flow at 93.33 cfs (5600 cfm) after the isolation valves are fully open at 21 seconds after the LOCA and zero prior to this time. (Assumptions 23 and 24)

RB Ventilation System

A volume of 1000 ft^3 is used for each of the RB ventilation supply and exhaust control volumes. The exact value used for this volume is not critical since it is negligible compared to the total RB volume. The 352’6” and 442’8” elevations of the supply intake and exhaust stack are used for the elevations of the supply system and the exhaust control volumes and for the ends of the flow paths connected to these control volumes. The end elevations of the RB ventilation flow

paths connected to the RB ventilation control volumes are also set equal the corresponding elevations. The ends of the RB ventilation flow paths connecting to the RB elevations are set equal to the correspond RB elevation. Arbitrary values are used for the rest of the ventilation system flow path parameters since these do not affect the solution, except for the friction lengths and loss coefficients, which are discussed in the following paragraph.

The friction length for each of the flow paths is set equal to zero and the loss coefficients are calculated using the static pressure and the flow rate supplied/exhausted to the corresponding level during normal operation from References 36 and 37 using Eqns. 9 and 29 from Chapter 32 of Ref. 43:

$$K = \Delta P \left(\frac{4005A}{Q}\right)^2$$

Where:

K = duct loss coefficient
A = assumed duct area = 28.3 ft^2
Q = flow rate to elevation, cfm from Refs. 36 and 37
ΔP = duct pressure static difference
= 5.813 inwg for supply ducts (Ref. 37)
= 6.164 inwg for exhaust ducts (Ref. 36)

The pressure loss for each of the supply and exhaust flow paths is calculated in Table 6 of Attachment C.

GOTHIC functions are used to control the flow rates of the RB ventilation supply and exhaust fan components. The flow rate for each of the RB ventilation fan components is set equal to the total flow rate of 128,000 cfm for two RB ventilation supply fans operating in parallel and 137,000 cfm for two RB ventilation exhaust fans operating in parallel up until the time of the LOCA occurs using a Gothic function. Trips are also used to the control the exhaust fan component to give an average initial RB internal pressure of 0.25 inwg vacuum prior to the LOCA. (Assumption 27) After the LOCA occurs, the supply and exhaust fan flow rates during SC isolation valve closure are set equal to the values from Reference 38, which are listed in Tables 7 and 8 of Attachment C, and are set to zero thereafter using the corresponding GOTHIC functions.

SFP Evaporation

The evaporation rate from the SFP pool was calculated using Eqn. 1 from Chapter 4 of Ref. 44:

$$W_{SFP} = \frac{A}{h_{fg}}(P_w - P_a)(95 + 0.425V) = \frac{1240}{1022.3}(3.96 - 0)(95 + 0.425 * 0)$$
$$= 456.3\ lb/hr$$

Where:

W_{SFP} = SFP evaporation rate, lb./hr

A = SFP surface area = 31' x 40'= 1240 ft^2 (Ref. 28)
h_{fg} = latent heat of evaporation at SFP temperature
= 1022.3 BTU/lb at 125 ^oF (Table 3 Ref. 43 Chapter 6)
P_w = saturation vapor pressure at SFP temperature
= 3.96 inHg at 125 ^oF (Table 3 Ref. 43 Chapter 6)
P_a = saturation pressure at room air dew point = 0 inHg (assumed 0% RH)
V = air velocity over water surface = 0 fpm with no forced air circulation after LOCA

The SFP evaporation rate was conservatively calculated assuming zero humidity on the refueling floor, i.e. $P_a = 0$. The evaporation rate calculated above multiplied by an activity factor of 0.5 (Ref. 44 page 4.6) to account for the quiescent pool surface conditions and was converted to lb/s to give a flow rate of 0.063 lb/s for the GOTHIC flow boundary condition. The SFP temperature of 125 ^oF and corresponding saturation pressure of 1.95 psia were also used for this boundary condition along with a steam volume fraction of 1.

Initial Conditions

The same initial conditions were used for all the control volumes used in the model. The initial temperature for each of the volume is 104 ^oF for summer conditions and 70 ^oF for winter conditions per assumption 4 and the initial relative humidity is 20% per assumption 5. The outside air pressure of 14.7 psia from assumption 3 is used as the initial pressure for each of the rooms even though the RB is maintained at a slight negative pressure per assumption 27. This is acceptable since an additional time is included in the GOTHIC model to allow the pressures in the RB to adjust an equilibrium steady state conditions with the assumed initial RB (average Refueling floor) pressure of -0.25 inwg before the assumed LOCA occurs.

Time Domains

An interval of 999.9 seconds was used for the initial time domain to stabilize the RB pressures and an interval of 0.1 seconds was used for the second time domain to initialize the thermal conductors. Therefore, the LOCA is assumed to occur at 1000 seconds into the solution. A third time domain with an interval of 3600 seconds from 1000 to 4600 seconds was used after the LOCA occurs.

GOTHIC Input Files

The GOTHIC input file for the Case 1 (summer conditions, no wind) and the changes for Cases 2, 3, and 4 are shown in Attachment B. The inputs for the ambient air temperature, initial RB temperature, wind speed and corresponding wind pressures are the only differences in the other cases. The values used for each case are shown in Table 1 below. The values for the atmospheric wind pressures are from Table 5 of Attachment C. Table 2 lists the GOTHIC input files used for each of the cases. (Note: The test case is described in Attachment F.)

Table 1: Input Parameters for Drawdown Cases

Variable	Case 1	Case 2	Case 3	Case 4
Description	Summer, No Wind	Summer, with Wind	Winter, No Wind	Winter, with Wind
Outside Air Temperature (^{o}F)	93	93	-10	-10
Initial Reactor Building Temperature (^{o}F)	104	104	70	70
Wind Speed (mph)	0	20	0	20
Wind Pressure, South Face (psia)	14.7	14.7053	14.7	14.7066
Wind Pressure, North Face (psia)	14.7	14.6971	14.7	14.6965
Wind Pressure, E/W Faces (psia)	14.7	14.6973	14.7	14.6967

Table 2: GOTHIC Input Files

Input Filename	Description	GOTHIC Checksum Value
JAF Drawdown Case1.GTH	Summer Conditions with No Wind	18101
JAF Drawdown Case2.GTH	Summer Conditions with 20 Mph Wind	11568
JAF Drawdown Case3.GTH	Winter Conditions with No Wind	7772
JAF Drawdown Case4.GTH	Winter Conditions with 20 Mph Wind	62250
JAF Drawdown Test Case.GTH	Test Conditions (see Attachment F)	25346

8. RESULTS

The results for each of the cases is shown in Attachment D. The LOCA occurs at 1000 seconds on each of these plots. Figures 1 through 6 below summarize the pertinent results from the various cases. (Note: The results in Figures 1 through 6 on an adjusted time scale with time zero equal to 1000 seconds from the GOTHIC results, i.e. coincident with the time that the LOCA is assumed to occur.) The RB temperature profiles for summer conditions from Case 1 shown in Figure 1 indicate that the initial RB heatup is quite fast immediately after the LOCA and SC isolation but then the RB temperatures begin to stabilize toward equilibrium conditions. Figures 2 and 3 show the pressures and differential pressures with respect to atmospheric pressure for the various levels of the Reactor Building. The RB pressures and differential pressures increase when the RB ventilation system trips after the LOCA due to the heatup of the Reactor Building and flow mismatch between the RB ventilation system supply and exhaust flows during SC isolation valve closure. The average differential pressure between the refueling floor and outside ambient is maintained at -0.25 inwg prior to the LOCA but becomes positive quickly after the RB ventilation system trips. The RB pressures and differential pressures begin to decrease after the SGT fan starts and exhausts air from the Reactor Building as shown in Figure 4, and eventually drop below the local outside air pressure, i.e. a negative pressure differential. The RB in-leakage shown in Figure 4 increases rapidly after the differential pressure becomes negative and approaches the SGT fan exhaust flow rate. The differential pressures for the lower elevations of the Reactor Building, measured with respect to the west wall environment, are lower (more negative) than those on the refueling floor. Therefore, the limiting average differential pressure for the refueling floor elevation is used to determine the drawdown times. For the cases with no wind (Cases 1 and 3), all the differential pressures on the refueling floor are identical. However, for the cases with wind (Cases 2 and 4), the differential pressures vary on the different walls of the refueling floor due to the different wind surface pressures. Figure 5 shows the differential pressures on the refueling floor for Case 2. The differential pressures are lowest, i.e. most negative, on the south (upwind) wall due to the assumed south wind and are lowest on the north (downwind) side of the Reactor Building. Figure 6 shows the average differential pressures on the refueling floor for each of the cases. The winter cases (Cases 3 and 4) result in the highest positive pressure differential due to the higher outside air density than for the summer cases. The winter cases also take longer for the average differential pressure to become negative. The time to reach a negative RB pressure is about 690 seconds for the winter cases compared to about 480 seconds for the summer cases. However, the point at which the average RB differential pressure reaches -0.25 inwg is almost identical for all the cases. (almost 1200 seconds) The reason for the relatively long period of time for the RB pressure to reach -0.25 inwg after becoming negative is due to the conservative in-leakage assumed in the analysis.

Table 3 compares the drawdown times for each of the cases. The average differential pressure of the refueling floor elevation (CV5) is used to determine the drawdown times, which is consistent with the method used to satisfy the Technical Specification surveillance criteria of -0.25 inwg. (Ref. 2.c, 10) The drawdown time is slightly longer for the cases with no wind (Cases 1 and 3) than the corresponding cases with wind (Cases 2 and 4, respectively). The summer cases (Cases 1 and 2) have slightly longer drawdown times than the winter cases (Cases 3 and 4). The limiting drawdown time for the summer conditions with no wind (Case 1) is 1032

seconds. Therefore, the design basis SC drawdown time is 1032 seconds, or approximately 17.2 minutes.

Table 3: Reactor Building Drawdown Times

	Case 1	Case 2	Case 3	Case 4
Description	Summer, No Wind	Summer, with Wind	Winter, No Wind	Winter, with Wind
Drawdown Time (s)	1032	1022	1012	994

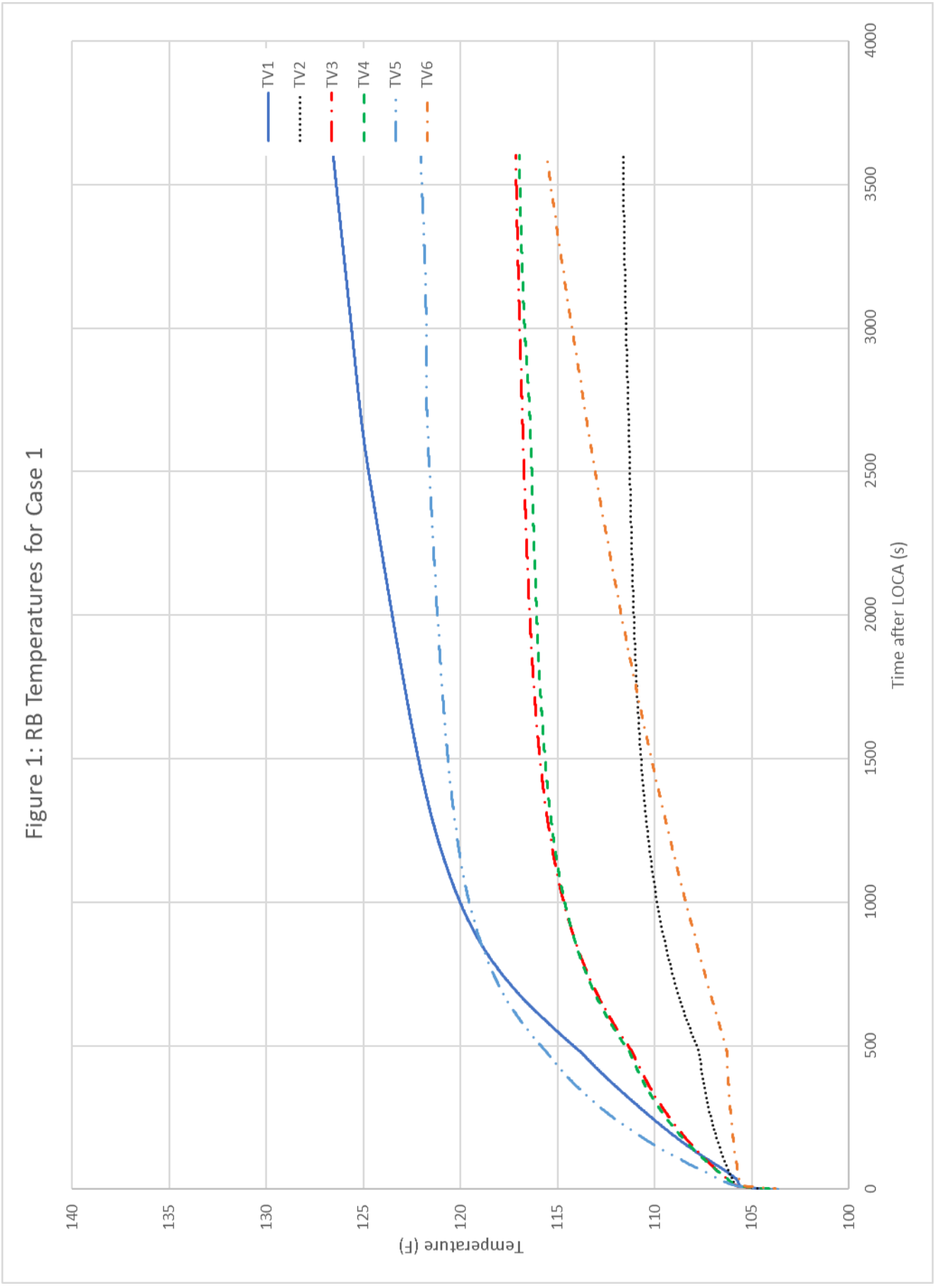

Figure 1: RB Temperatures for Case 1

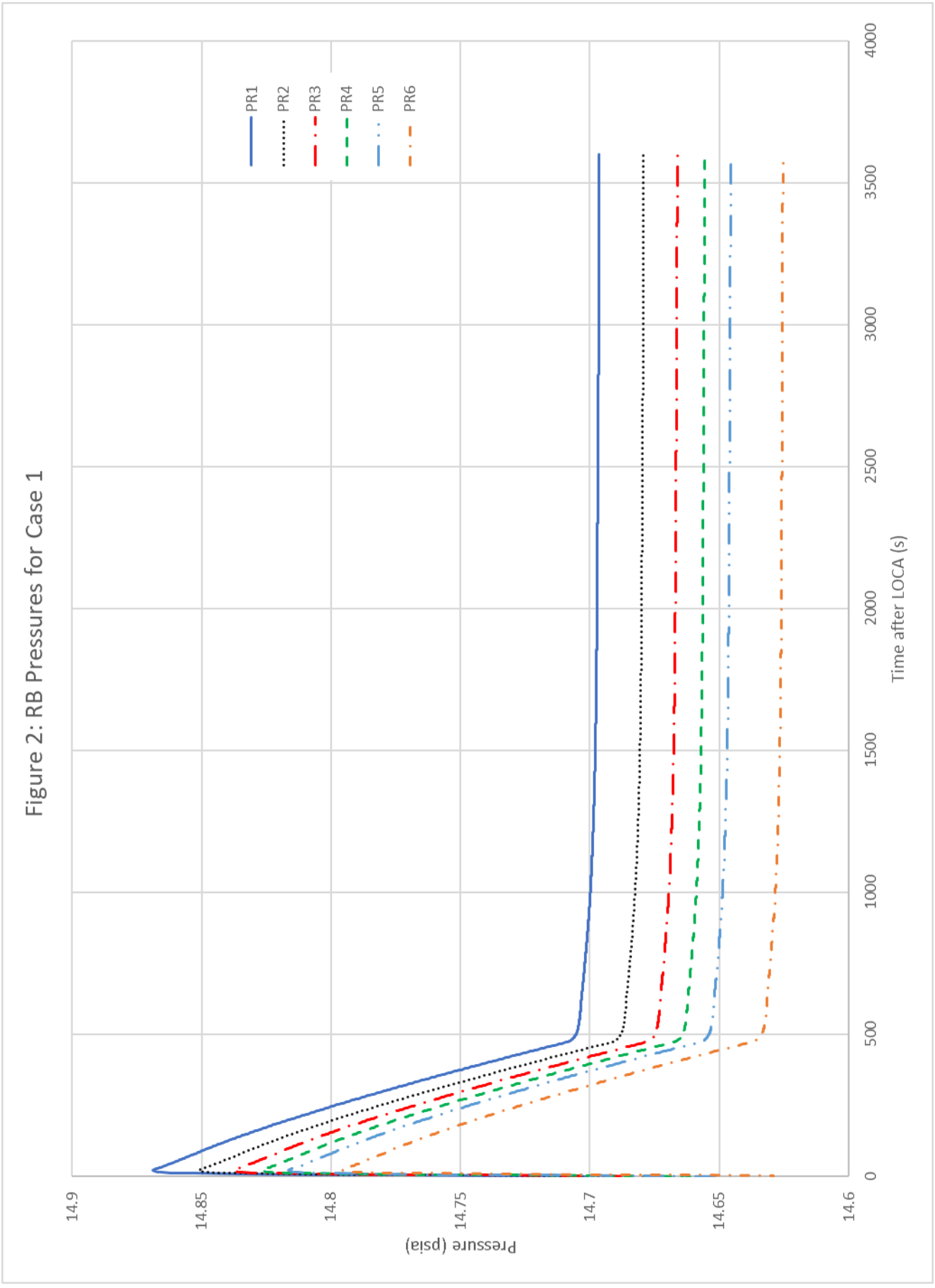

Figure 2: RB Pressures for Case 1

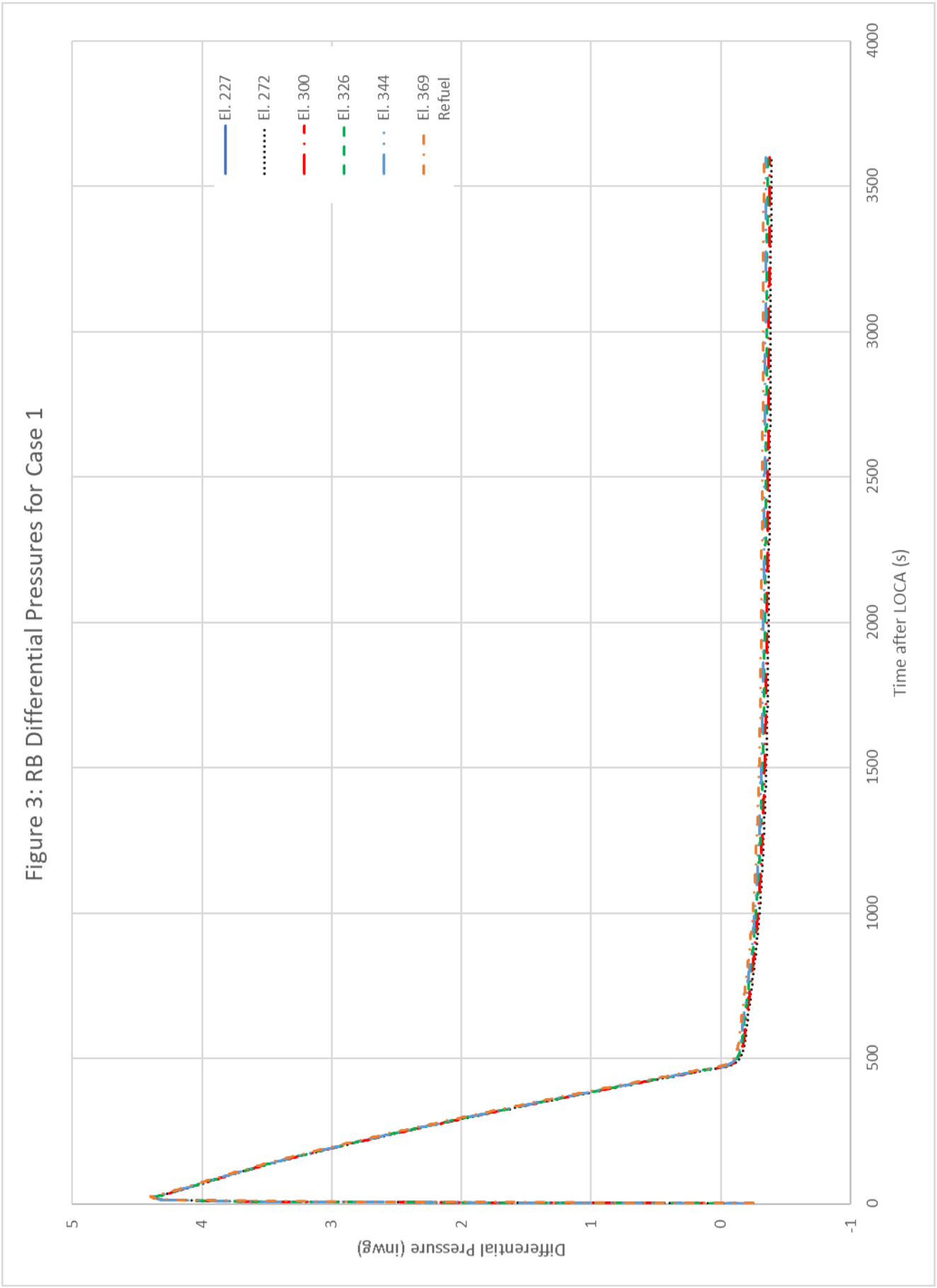

Figure 3: RB Differential Pressures for Case 1

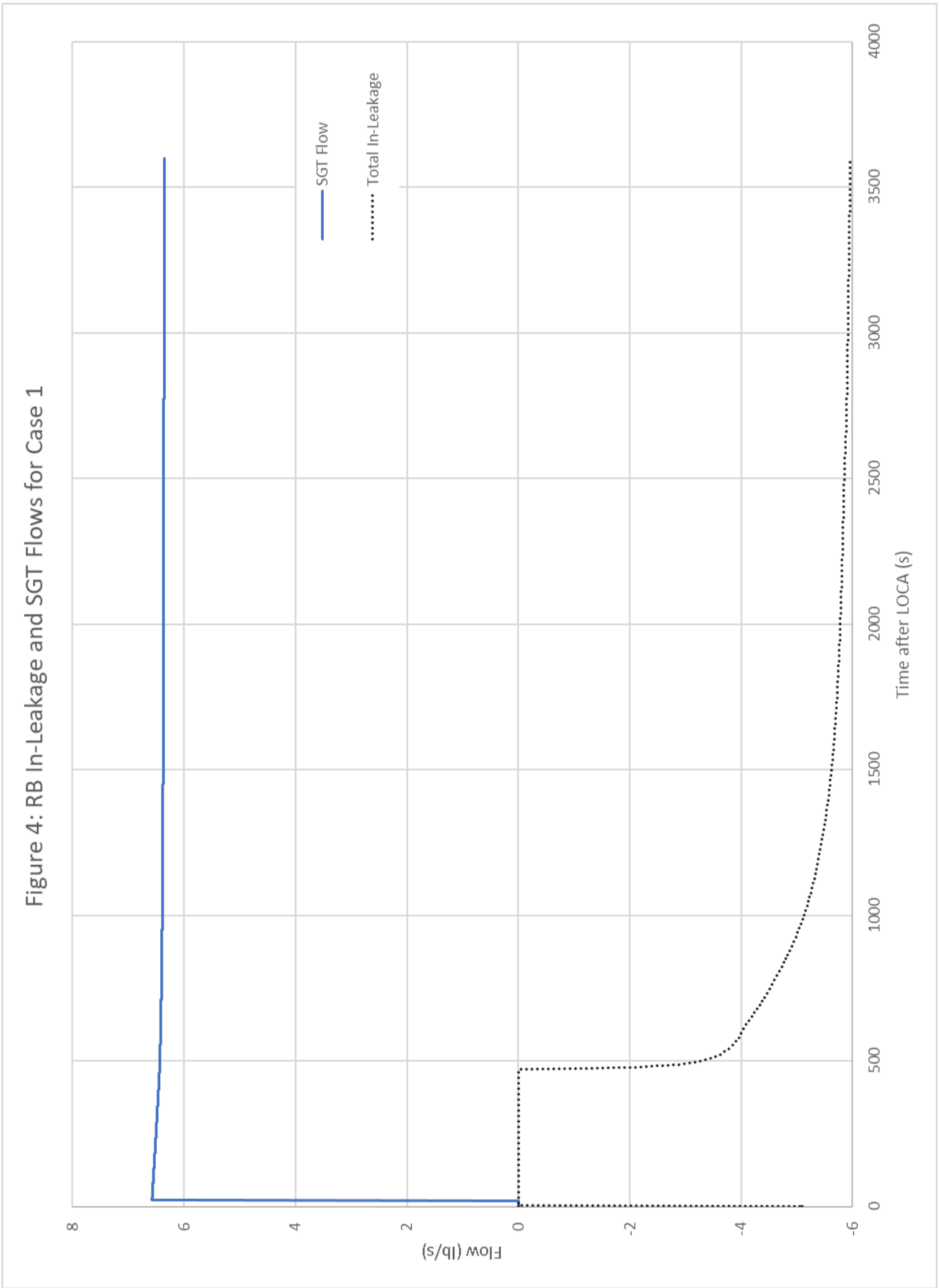

Figure 4: RB In-Leakage and SGT Flows for Case 1

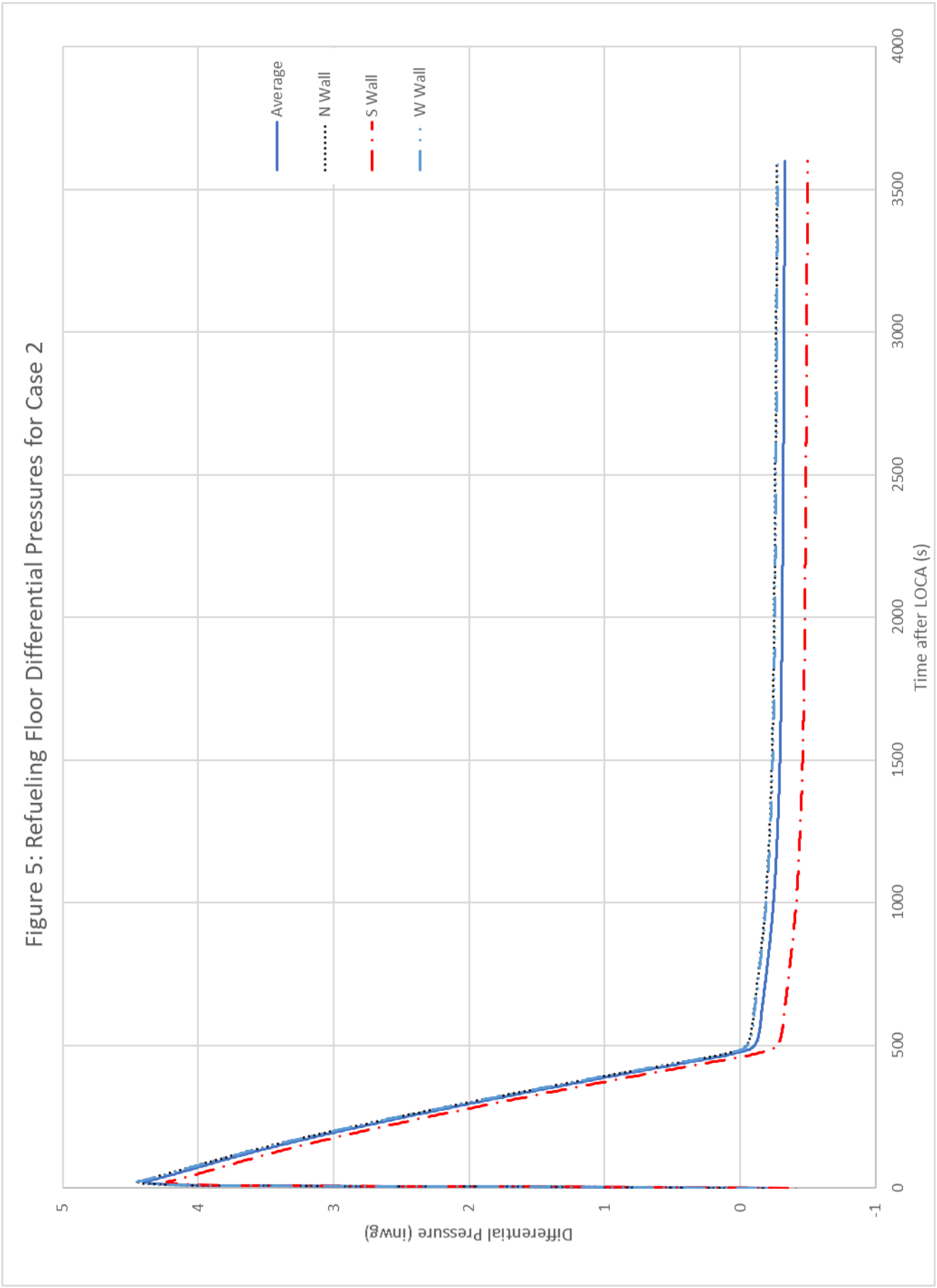

Figure 5: Refueling Floor Differential Pressures for Case 2

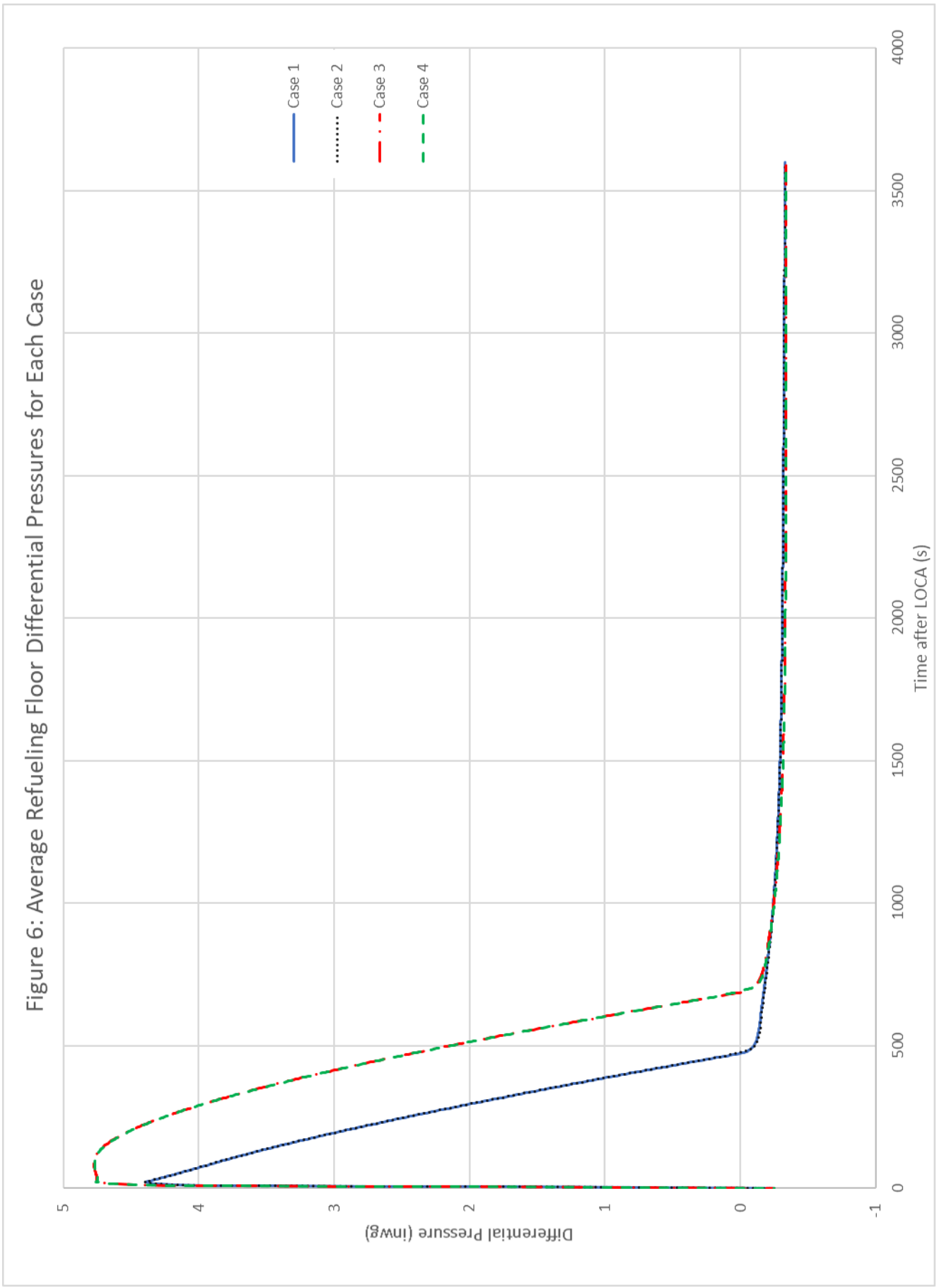

Figure 6: Average Refueling Floor Differential Pressures for Each Case

9. CONCLUSION

The average differential pressure inside the JAF Reactor Building after a design basis LOCA will be less than the Technical Specification criteria of -0.25 inwg with respect to the outside air pressure after a drawdown time of 1032 seconds (17.2 minutes) under the limiting outside air temperature and wind conditions conforming with the RG 1.183 guidance. Once the drawdown period is complete and the required negative RB pressure is re-established, there will be no unfiltered exfiltration from the Reactor Building.

10. ATTACHMENTS

A. GOTHIC Model Schematic Diagram

B. GOTHIC input File for Case 1 and Changes for Cases 2, 3, and 4

C. Calculation of GOTHIC Inputs

D. GOTHIC Results

E. Exelon TODI No. TODI-JAF-EC626767-01

F. Drawdown Test Case

Mar/05/2019 15:11:59
GOTHIC Version 8.2(QA) - Oct 2016
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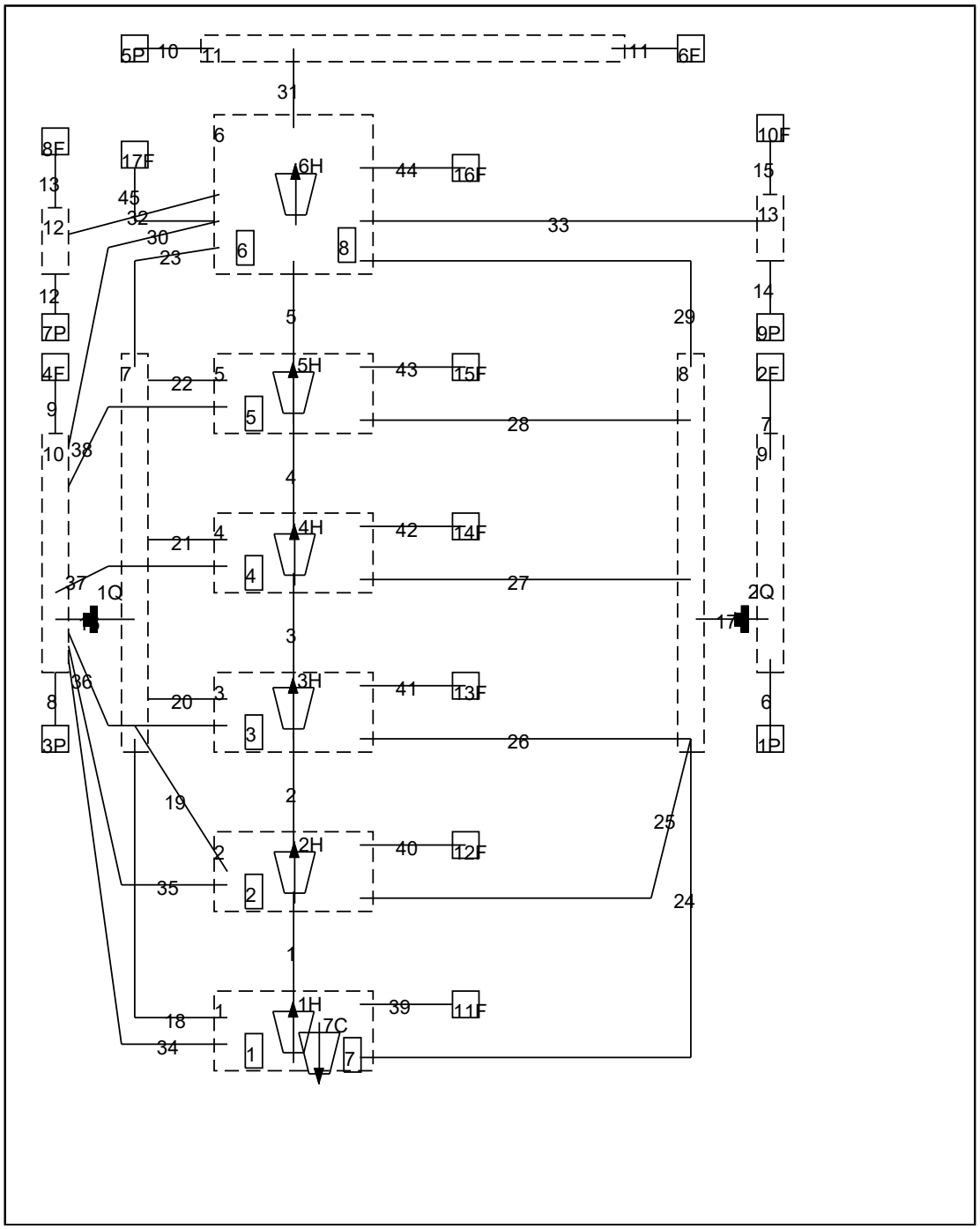

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GOTHIC Version 8.2(QA) - Oct 2016
File: C:\Users\jlwright\Documents\Exelon AST\JAF Drawdown\Gothic\Final\JAF Drawdown Case1.GTH

Control Volume Parameters

Vol #	Description	Vol (ft3)	Elev (ft)	Ht (ft)	Hyd. D. (ft)	L/V IA (ft2)	SA FF	Min Film (ft)	Min Film FF
1	RB El 227	394480.	227.5	44.5	21.3	DEFAULT		DEFAULT	
2	RB El 272	365571.	272.	28.	20.9	DEFAULT		DEFAULT	
3	RB El 300	315399.	300.	26.75	23.1	DEFAULT		DEFAULT	
4	RB El 326	182930.	326.75	17.75	18.1	DEFAULT		DEFAULT	
5	RB El 344	214400.	344.5	25.	22.4	DEFAULT		DEFAULT	
6	RB El 369	900880.	369.5	60.42	49.5	DEFAULT		DEFAULT	
7	RB HVAC Supply	1000.	352.5	6.	6.	DEFAULT		DEFAULT	
8	RB HVAC Exhaust	1000.	442.67	6.	6.	DEFAULT		DEFAULT	
9	Exhaust Ambient	1e+10	272.	400.	1e+06	DEFAULT		DEFAULT	
10	W Wall Ambient	1e+10	272.	400.	1e+06	DEFAULT		DEFAULT	
11	E Wall Ambient	1e+10	272.	400.	1e+06	DEFAULT		DEFAULT	
12	N Wall Ambient	1e+10	272.	400.	1e+06	DEFAULT		DEFAULT	
13	S Wall Ambient	1e+10	272.	400.	1e+06	DEFAULT		DEFAULT	

Control Volume Options

Vol #	S Wave Damper	Pool HMT Mult	Pool Opt	Pool Pres. Correction	Pool Dp. FF	Gas Tracking	Burn Opt	ICIP Drag
1	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
2	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
3	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
4	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
5	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
6	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
7	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
8	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
9	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
10	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
11	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
12	1.	DEFAULT	LOCAL	ON		ON	NONE	ON
13	1.	DEFAULT	LOCAL	ON		ON	NONE	ON

Mar/05/2019 15:13:28
GOTHIC Version 8.2(QA) - Oct 2016
File: C:\Users\jlwright\Documents\Exelon AST\JAF Drawdown\Gothic\Final\JAF Drawdown Case1.GTH

Laminar Leakage

Vol #	Lk Rate Factor (%/hr)	Ref Press (psia)	Ref Temp (F)	Ref Humid (%)	Sink or Src	Model Option	Rep Wall	Subvol Option	Leak Area (ft2)
1	0.					CNST T		UNIFORM	DEFAULT
2	0.					CNST T		UNIFORM	DEFAULT
3	0.					CNST T		UNIFORM	DEFAULT
4	0.					CNST T		UNIFORM	DEFAULT
5	0.					CNST T		UNIFORM	DEFAULT
6	0.					CNST T		UNIFORM	DEFAULT
7	0.					CNST T		UNIFORM	DEFAULT
8	0.					CNST T		UNIFORM	DEFAULT
9	0.					CNST T		UNIFORM	DEFAULT
10	0.					CNST T		UNIFORM	DEFAULT
11	0.					CNST T		UNIFORM	DEFAULT
12	0.					CNST T		UNIFORM	DEFAULT
13	0.					CNST T		UNIFORM	DEFAULT

Turbulent Leakage

Vol #	Lk Rate Factor (%/hr)	Ref Press (psia)	Ref Temp (F)	Ref Humid (%)	Sink or Src	Model Option	Rep Wall	Subvol Option	Leak Area (ft2)	fL/D
1	0.					CNST T		UNIFORM	DEFAULT	
2	0.					CNST T		UNIFORM	DEFAULT	
3	0.					CNST T		UNIFORM	DEFAULT	
4	0.					CNST T		UNIFORM	DEFAULT	
5	0.					CNST T		UNIFORM	DEFAULT	
6	0.					CNST T		UNIFORM	DEFAULT	
7	0.					CNST T		UNIFORM	DEFAULT	
8	0.					CNST T		UNIFORM	DEFAULT	
9	0.					CNST T		UNIFORM	DEFAULT	
10	0.					CNST T		UNIFORM	DEFAULT	
11	0.					CNST T		UNIFORM	DEFAULT	
12	0.					CNST T		UNIFORM	DEFAULT	
13	0.					CNST T		UNIFORM	DEFAULT	

Discrete Burn Parameters

Vol #	Min H2 Frac	Min O2 Frac	Max H2O Frac	Burn Length (ft)	Flame Speed (ft/s)	Burn Rate FF	Un Burn Frac	Burn Opt
1	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR

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Discrete Burn Parameters (cont.)

Vol #	Min H2 Frac	Min O2 Frac	Max H2O Frac	Burn Length (ft)	Flame Speed (ft/s)	Burn Rate FF	Un Burn Frac	Burn Opt
2	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
3	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
4	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
5	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
6	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
7	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
8	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
9	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
10	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
11	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
12	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR
13	0.07	0.05	0.55	DEFAULT	DEFAULT		DEFAULT	FBR

Continuous Burn Parameters

Vol Vol #	Min H2 Flow (lbm/s)	Min O2 Frac	Max H2O Frac	Max H2O/H2 Ratio	Burn Frac
1	0.	0.05	0.55	1000.	1.
2	0.	0.05	0.55	1000.	1.
3	0.	0.05	0.55	1000.	1.
4	0.	0.05	0.55	1000.	1.
5	0.	0.05	0.55	1000.	1.
6	0.	0.05	0.55	1000.	1.
7	0.	0.05	0.55	1000.	1.
8	0.	0.05	0.55	1000.	1.
9	0.	0.05	0.55	1000.	1.
10	0.	0.05	0.55	1000.	1.
11	0.	0.05	0.55	1000.	1.
12	0.	0.05	0.55	1000.	1.
13	0.	0.05	0.55	1000.	1.

Mechanistic Burn Rate Parameters

Vol #	Min H2 Frac	Min O2 Frac	Max H2O Frac	Da No.	Lam Burn Rate (lbm/ft3-s)	FF	Burn Temp Limit (F)	FF	Turb Burn Opt	Turb Burn FF
1	0.	0.	1.	1.	DEFAULT		350.		EDIS	

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Mechanistic Burn Rate Parameters (cont.)

Vol #	Min H2 Frac	Min O2 Frac	Max H2O Frac	Da No.	Lam Burn Rate (lbm/ft3-s)	FF	Burn Temp Limit (F)	FF	Turb Burn Opt	Turb Burn FF
2	0.	0.	1.	1.	DEFAULT		350.		EDIS	
3	0.	0.	1.	1.	DEFAULT		350.		EDIS	
4	0.	0.	1.	1.	DEFAULT		350.		EDIS	
5	0.	0.	1.	1.	DEFAULT		350.		EDIS	
6	0.	0.	1.	1.	DEFAULT		350.		EDIS	
7	0.	0.	1.	1.	DEFAULT		350.		EDIS	
8	0.	0.	1.	1.	DEFAULT		350.		EDIS	
9	0.	0.	1.	1.	DEFAULT		350.		EDIS	
10	0.	0.	1.	1.	DEFAULT		350.		EDIS	
11	0.	0.	1.	1.	DEFAULT		350.		EDIS	
12	0.	0.	1.	1.	DEFAULT		350.		EDIS	
13	0.	0.	1.	1.	DEFAULT		350.		EDIS	

Mechanistic Burn Propagation Parameters

Vol #	Unburned H2 Frac	FF	Burned H2 Frac	FF	CC Flow Vel (ft/s)	FF	Flame Thick (ft)	FF	Ig Min H2 Frac	Ig Min O2 Frac	Ig Max Steam Frac	Auto Ig Temp (F)	FF
1	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
2	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
3	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
4	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
5	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
6	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
7	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
8	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
9	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
10	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
11	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
12	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	
13	0.04		0.001		DEFAULT		0.164		0.04	0.05	0.55	DEFAULT	

Fluid Boundary Conditions - Table 1

BC#	Description	Press. (psia)	FF	Temp. (F)	FF	Flow (lbm/s)	FF	S P	J O	ON Trip	OFF Trip	Elev. (ft)
1P	Exhaust Wall Am	14.7		1	2T			N	N			272.
2F	Exhaust Wall Am	14.7		1	2T	v1e10		N	N			272.

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Fluid Boundary Conditions - Table 1 (cont.)

BC#	Description	Press. (psia)	FF	Temp. (F)	FF	Flow (lbm/s)	FF	S P	J O	ON Trip	OFF Trip	Elev. (ft)
3P	W Wall Ambient	14.7		1	2T			N	N			272.
4F	W Wall Ambient	14.7		1	2T	v1e10		N	N			272.
5P	E Wall Ambient	14.7		1	2T			N	N			272.
6F	E Wall Ambient	14.7		1	2T	v1e10		N	N			272.
7P	N Wall Ambient	14.7		1	2T			N	N			272.
8F	N Wall Ambient	14.7		1	2T	v1e10		N	N			272.
9P	S Wall Ambient	14.7		1	2T			N	N			272.
10F	S Wall Ambient	14.7		1	2T	v1e10		N	N			272.
11F	SGT 227	14.7		1	2T	V-0.2	1T	N	N			656.6
12F	SGT 272	14.7		1	2T	V-0.2	1T	N	N			656.6
13F	SGT 300	14.7		1	2T	V-0.2	1T	N	N			656.6
14F	SGT 326	14.7		1	2T	V-0.2	1T	N	N			656.6
15F	SGT 344	14.7		1	2T	V-0.2	1T	N	N			656.6
16F	SGT 369	14.7		1	2T	V-0	1T	N	N			656.6
17F	SFP Evap	1.945		125		0.063	9T	N	N			369.5

Fluid Boundary Conditions - Table 2

BC#	Liq. V. Frac.	FF	Stm. V. Frac.	FF	Drop D. (in)	FF	Drop GSD	Drop Frac.	FF	Cpld BC#	Flow Frac.	FF	Heat (Btu/s)	FF	Outlet Quality	FF
1P			H100	3T	NONE		1.								DEFAULT	
2F			H100	3T	NONE		1.								DEFAULT	
3P			H100	3T	NONE		1.								DEFAULT	
4F			H100	3T	NONE		1.								DEFAULT	
5P			H100	3T	NONE		1.								DEFAULT	
6F			H100	3T	NONE		1.								DEFAULT	
7P			H100	3T	NONE		1.								DEFAULT	
8F			H100	3T	NONE		1.								DEFAULT	
9P			H100	3T	NONE		1.								DEFAULT	
10F			H100	3T	NONE		1.								DEFAULT	
11F			H100	3T	NONE		1.								DEFAULT	
12F			H100	3T	NONE		1.								DEFAULT	
13F			H100	3T	NONE		1.								DEFAULT	
14F			H100	3T	NONE		1.								DEFAULT	
15F			H100	3T	NONE		1.								DEFAULT	
16F			H100	3T	NONE		1.								DEFAULT	
17F			1		NONE		1.								DEFAULT	

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Fluid Boundary Conditions - Table 3
Volume Fractions

BC#	Air Gas 1	FF	Gas 2	FF	Gas 3	FF	Gas 4	FF
1P	1.							
2F	1.							
3P	1.							
4F	1.							
5P	1.							
6F	1.							
7P	1.							
8F	1.							
9P	1.							
10F	1.							
11F								
12F								
13F								
14F								
15F								
16F								
17F	1.							

Fluid Boundary Conditions - Table 4
Volume Fractions

BC#	Gas 5	FF	Gas 6	FF	Gas 7	FF	Liquid Comp. Set	FF
1P								
2F								
3P								
4F								
5P								
6F								
7P								
8F								
9P								
10F								
11F								
12F								
13F								
14F								
15F								
16F								
17F								

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Flow Paths - Table 1

F.P. #	Description	Vol A	F	Elev (ft)	Ht (ft)	Vol B	F	Elev (ft)	Ht (ft)	Tilt (deg)	Rot. (deg)
1	RB 227-272	1	-	271.	1.	2	-	272.	1.		
2	RB 272-300	2	-	299.	1.	3	-	300.	1.		
3	RB 300-326	3	-	325.75	1.	4	-	326.75	1.		
4	RB 326-344	4	-	343.5	1.	5	-	344.5	1.		
5	RB 344-369	5	-	368.5	1.	6	-	369.5	1.		
6	Exhaust Ambient	9	-	272.	1.	1P	-	272.	1.		
7	Exhaust Ambient	9	-	272.	1.	2F	-	272.	1.		
8	N Wall Ambient	10	-	272.	1.	3P	-	272.	1.		
9	N Wall Ambient	10	-	272.	1.	4F	-	272.	1.		
10	E Wall Ambient	11	-	272.	1.	5P	-	272.	1.		
11	E Wall Ambient	11	-	272.	1.	6F	-	272.	1.		
12	N Wall Ambient	12	-	272.	1.	7P	-	272.	1.		
13	N Wall Ambient	12	-	272.	1.	8F	-	272.	1.		
14	S Wall Ambient	13	-	272.	1.	9P	-	272.	1.		
15	S Wall Ambient	13	-	272.	1.	10F	-	272.	1.		
16	RB Supply Fan	10	-	352.5	6.	7	-	352.5	6.		
17	RB Exhaust Fan	8	-	442.67	6.	9	-	442.67	6.		
18	RB 227 Supply	1	-	227.5	1.	7	-	352.5	1.		
19	RB 272 Supply	2	-	272.	1.	7	-	352.5	1.		
20	RB 300 Supply	3	-	300.	1.	7	-	352.5	1.		
21	RB 326 Supply	4	-	326.75	1.	7	-	352.5	1.		
22	RB 344 Supply	5	-	344.5	1.	7	-	352.5	1.		
23	RB 369 Supply	6	-	369.5	1.	7	-	352.5	1.		
24	RB 227 Exhaust	1	-	227.5	1.	8	-	442.67	1.		
25	RB 272 Exhaust	2	-	272.	1.	8	-	442.67	1.		
26	RB 300 Exhaust	3	-	300.	1.	8	-	442.67	1.		
27	RB 326 Exhaust	4	-	326.75	1.	8	-	442.67	1.		
28	RB 344 Exhaust	5	-	344.5	1.	8	-	442.67	1.		
29	RB 369 Exhaust	6	-	369.5	1.	8	-	442.67	1.		
30	W Refuel Wall	6	-	369.5	1.	10	-	369.5	1.		
31	E Refuel Wall	6	-	369.5	1.	11	-	369.5	1.		
32	N Refuel Wall	6	-	369.5	1.	12	-	369.5	1.		
33	S Refuel Wall	6	-	369.5	1.	13	-	369.5	1.		
34	RB 227 DP	1	-	271.	1.	10	-	272.	1.		
35	RB 272 DP	2	-	272.	1.	10	-	272.	1.		
36	RB 300 DP	3	-	300.	1.	10	-	300.	1.		
37	RB 326 DP	4	-	326.75	1.	10	-	326.75	1.		
38	RB 344 DP	5	-	344.5	1.	10	-	344.5	1.		
39	SGT 227	1	-	227.5	1.	11F	-	656.6	1.		
40	SGT 272	2	-	272.	1.	12F	-	656.6	1.		
41	SGT 300	3	-	300.	1.	13F	-	656.6	1.		
42	SGT 326	4	-	326.75	1.	14F	-	656.6	1.		
43	SGT 344	5	-	344.5	1.	15F	-	656.6	1.		
44	SGT 369 Refuel	6	-	369.5	1.	16F	-	656.6	1.		
45	SFP Evaporation	6	-	369.5	1.	17F	-	369.5	1.		

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Flow Paths - Table 2

Flow Path #	Flow Area (ft2)	Hyd. Diam. (ft)	Inertia Length (ft)	Friction Length (ft)	Relative Rough-ness	Lam Geom Fact	Dep Bend (deg)	Mom Trn Opt	Strat Flow Opt
1	91.	7.1	36.25			DEFA	0.	-	NONE
2	428.	20.5	27.375			DEFA	0.	-	NONE
3	428.	20.5	22.25			DEFA	0.	-	NONE
4	428.	20.5	21.375			DEFA	0.	-	NONE
5	428.	20.5	42.708			DEFA	0.	-	NONE
6	1e+10	1e+10	1.			DEFA	0.	-	NONE
7	1e+10	1e+10	1.			DEFA	0.	-	NONE
8	1e+10	1e+10	1.			DEFA	0.	-	NONE
9	1e+10	1e+10	1.			DEFA	0.	-	NONE
10	1e+10	1e+10	1.			DEFA	0.	-	NONE
11	1e+10	1e+10	1.			DEFA	0.	-	NONE
12	1e+10	1e+10	1.			DEFA	0.	-	NONE
13	1e+10	1e+10	1.			DEFA	0.	-	NONE
14	1e+10	1e+10	1.			DEFA	0.	-	NONE
15	1e+10	1e+10	1.			DEFA	0.	-	NONE
16	28.3	6.	1.			DEFA	0.	-	NONE
17	28.3	6.	1.			DEFA	0.	-	NONE
18	28.3	6.	1.			DEFA	0.	-	NONE
19	28.3	6.	1.			DEFA	0.	-	NONE
20	28.3	6.	1.			DEFA	0.	-	NONE
21	28.3	6.	1.			DEFA	0.	-	NONE
22	28.3	6.	1.			DEFA	0.	-	NONE
23	28.3	6.	1.			DEFA	0.	-	NONE
24	28.3	6.	1.			DEFA	0.	-	NONE
25	28.3	6.	1.			DEFA	0.	-	NONE
26	28.3	6.	1.			DEFA	0.	-	NONE
27	28.3	6.	1.			DEFA	0.	-	NONE
28	28.3	6.	1.			DEFA	0.	-	NONE
29	28.3	6.	1.			DEFA	0.	-	NONE
30	1.1	1.	1.			DEFA	0.	-	NONE
31	1.1	1.	1.			DEFA	0.	-	NONE
32	1.43	1.	1.			DEFA	0.	-	NONE
33	1.43	1.	1.			DEFA	0.	-	NONE
34	1e-12	1.	1.			DEFA	0.	-	NONE
35	1e-12	1.	1.			DEFA	0.	-	NONE
36	1e-12	1.	1.			DEFA	0.	-	NONE
37	1e-12	1.	1.			DEFA	0.	-	NONE
38	1e-12	1.	1.			DEFA	0.	-	NONE
39	1e-12	1.	1.			DEFA	0.	-	NONE
40	1e-12	1.	1.			DEFA	0.	-	NONE
41	1e-12	1.	1.			DEFA	0.	-	NONE
42	1e-12	1.	1.			DEFA	0.	-	NONE
43	1e-12	1.	1.			DEFA	0.	-	NONE
44	1e-12	1.	1.			DEFA	0.	-	NONE

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Flow Paths - Table 2 (cont.)

Flow Path #	Flow Area (ft2)	Hyd. Diam. (ft)	Inertia Length (ft)	Friction Length (ft)	Relative Rough-ness	Lam Geom Fact	Dep Bend (deg)	Mom Trn Opt	Strat Flow Opt
45	1240.	100.	1.			DEFA	0.	-	NONE

Flow Paths - Table 3

Flow Path #	Fwd. Loss Coeff.	FF	Rev. Loss Coeff.	FF	Comp. Opt.	Critical Flow Model	Exit Loss Coeff.	Drop Breakup Model	Homog. Flow Opt.
1	2.85		2.85		OFF	OFF	0.	OFF	OFF
2	2.85		2.85		OFF	OFF	0.	OFF	OFF
3	2.85		2.85		OFF	OFF	0.	OFF	OFF
4	2.85		2.85		OFF	OFF	0.	OFF	OFF
5	2.85		2.85		OFF	OFF	0.	OFF	OFF
6	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
7	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
8	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
9	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
10	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
11	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
12	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
13	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
14	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
15	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
16	1e-20		1e-20		OFF	OFF	0.	OFF	OFF
17	1e-20		1e-20		OFF	OFF	0.	OFF	OFF
18	310.8		310.8		OFF	OFF	0.	OFF	OFF
19	2074.3		2074.3		OFF	OFF	0.	OFF	OFF
20	196.4		196.4		OFF	OFF	0.	OFF	OFF
21	1327.5		1327.5		OFF	OFF	0.	OFF	OFF
22	2040.1		2040.1		OFF	OFF	0.	OFF	OFF
23	12.8		12.8		OFF	OFF	0.	OFF	OFF
24	6850.1		6850.1		OFF	OFF	0.	OFF	OFF
25	6110.1		6110.1		OFF	OFF	0.	OFF	OFF
26	68.5		68.5		OFF	OFF	0.	OFF	OFF
27	654.4		654.4		OFF	OFF	0.	OFF	OFF
28	977.6		977.6		OFF	OFF	0.	OFF	OFF
29	16.2		16.2		OFF	OFF	0.	OFF	OFF
30	1e+20		5.7		OFF	OFF	0.	OFF	OFF
31	1e+20		5.7		OFF	OFF	0.	OFF	OFF
32	1e+20		5.7		OFF	OFF	0.	OFF	OFF
33	1e+20		5.7		OFF	OFF	0.	OFF	OFF
34	2.85		2.85		OFF	OFF	0.	OFF	OFF

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Flow Paths - Table 3 (cont.)

Flow Path #	Fwd. Loss Coeff.	FF	Rev. Loss Coeff.	FF	Comp. Opt.	Critical Flow Model	Exit Loss Coeff.	Drop Breakup Model	Homog. Flow Opt.
35	2.85		2.85		OFF	OFF	0.	OFF	OFF
36	2.85		2.85		OFF	OFF	0.	OFF	OFF
37	2.85		2.85		OFF	OFF	0.	OFF	OFF
38	2.85		2.85		OFF	OFF	0.	OFF	OFF
39	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
40	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
41	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
42	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
43	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
44	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
45	1e-10		1e-10		OFF	OFF	0.	OFF	OFF

Flow Paths - Table 4

	Forward			Reverse				Prop	
Flow Path #	Min H2 Frac	Min O2 Frac	Max H2O Frac	Min H2 Frac	Min O2 Frac	Max H2O Frac	Burn Time Frac	With Zero Flow	Prop Opt
1	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
2	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
3	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
4	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
5	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
6	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
7	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
8	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
9	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
10	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
11	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
12	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
13	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
14	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
15	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
16	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
17	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
18	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
19	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
20	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
21	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
22	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
23	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW

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Flow Paths - Table 4 (cont.)

Flow Path #	Forward Min H2 Frac	Forward Min O2 Frac	Forward Max H2O Frac	Reverse Min H2 Frac	Reverse Min O2 Frac	Reverse Max H2O Frac	Burn Time Frac	Prop With Zero Flow	Prop Opt
24	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
25	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
26	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
27	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
28	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
29	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
30	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
31	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
32	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
33	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
34	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
35	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
36	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
37	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
38	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
39	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
40	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
41	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
42	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
43	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
44	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW
45	0.06	0.05	0.55	0.06	0.05	0.55	0.5	NO	COFLOW

Thermal Conductors

Cond #	Description	Vol A	Srf Opt	Vol B	Srf Opt	Cond Type	S. A. (ft2)	Init. T.(F)	I/X	Grp #
1	RB 227 Walls	1	1	1	4	1	74052.	104.	I	
2	RB 272 Walls	2	1	2	4	1	70113.	104.	I	
3	RB 300 Walls	3	1	3	4	1	54604.	104.	I	
4	RB 326 Walls	4	1	4	4	1	40453.	104.	I	
5	RB 344 Walls	5	1	5	4	1	38310.	104.	I	
6	RB 369 Walls	6	3	6	4	1	17920.	104.	I	
7	RB 227 - Torus	1	5	1	6	4	31445.	104.	I	
8	RB 369 - SFP	6	3	6	8	5	1240.	104.	I	

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Thermal Conductors - Radiation Parameters

Cond #	Therm. Rad. Side A	Emiss. Side A	Therm. Rad. Side B	Emiss. Side B	Scope
1	No		No		FULL
2	No		No		FULL
3	No		No		FULL
4	No		No		FULL
5	No		No		FULL
6	No		No		FULL
7	No		No		FULL
8	No		No		FULL

Conductor Surface Options - Table 1

Surf Opt #	Description	Heat Transfer Option	Nominal Value	FF	Cnd/ Cnv Opt	Cnd Opt	Sp Cnv HTC	Nat Cnv Opt	For Cnv Opt
1	Interior Wall	Direct		4T		DLM-FM		VERT SURF	OFF
2	Int Ceiling	Direct		4T		DLM-FM		FACE DOWN	OFF
3	Int Floor	Direct		4T		DLM-FM		FACE UP	OFF
4	Insulated	Sp Heat	0.						
5	Torus	Direct		4T		DLM-FM		HORZ CYL	OFF
6	SP Temp	Sp Temp	1.	5T					
7	DW Temp	Sp Temp	1.	6T					
8	SFP Temp	Sp Temp	125.						
9	Outside Air	Sp Temp	93.						

Conductor Surface Options - Table 2

Surf Opt #	Phase Opt	Min Liq Fract	Max Liq Fract	Convection Bulk Temp Model	FF	Condensation Bulk Temp Model	FF	Rad to Steam Emissivity Dry	Wet
1	VAP			Tg-Tf		Tb-Tw		DEFAULT	DEFAULT
2	VAP			Tg-Tf		Tb-Tw		DEFAULT	DEFAULT
3	VAP			Tg-Tf		Tb-Tw		DEFAULT	DEFAULT
4									
5	VAP			Tg-Tf		Tb-Tw		DEFAULT	DEFAULT
6									
7									
8									
9									

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Conductor Surface Options - Table 3

Surf Opt #	Char. Length (ft)	Nom Vel (ft/s)	Vel FF	Minimum Conv HTC (B/h-f2-F)	Char. Height (ft)	Cond. Length (ft)
1				DEFAULT	DEFAULT	DEFAULT
2				DEFAULT	DEFAULT	DEFAULT
3				DEFAULT	DEFAULT	DEFAULT
4						
5				DEFAULT	DEFAULT	DEFAULT
6						
7						
8						
9						

Conductor Surface Options - Table 4

Surf Opt #	Const CT	Total Heat (Btu)	Peak Time (sec)	Exp XT	Initial Value (B/h-f2-F)	BD Exp yt	Post-BD Exp xt	Post-BD Direct FF
1								
2								
3								
4								
5								
6								
7								
8								
9								

Conductor Surface Options - Forced Convection Variables
htc = (k/l) * (A + B*Re**C*Pr**D)

Surf Opt #	Conv Var A Nom.	FF	Conv Var B Nom.	FF	Conv Var C Nom.	FF	Conv Var D Nom.	FF
1	0.		0.023		0.8		0.4	
2	0.		0.023		0.8		0.4	
3	0.		0.023		0.8		0.4	
4	0.		0.023		0.8		0.4	
5	0.		0.023		0.8		0.4	
6	0.		0.023		0.8		0.4	
7	0.		0.023		0.8		0.4	

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Conductor Surface Options - Forced Convection Variables (con

htc = (k/l) * (A + B*Re**C*Pr**D)

Surf Opt #	Conv Var A Nom.	FF	Conv Var B Nom.	FF	Conv Var C Nom.	FF	Conv Var D Nom.	FF
8	0.		0.023		0.8		0.4	
9	0.		0.023		0.8		0.4	

Conductor Surface Options - Natural Convection Variables

htc = (k/l) * (A + B*Gr**C*Pr**D)

Surf Opt #	Conv Var A Nom.	FF	Conv Var B Nom.	FF	Conv Var C Nom.	FF	Conv Var D Nom.	FF
1	0.		0.59		0.25		0.25	
2	0.		0.59		0.25		0.25	
3	0.		0.59		0.25		0.25	
4	0.		0.59		0.25		0.25	
5	0.		0.59		0.25		0.25	
6	0.		0.59		0.25		0.25	
7	0.		0.59		0.25		0.25	
8	0.		0.59		0.25		0.25	
9	0.		0.59		0.25		0.25	

Thermal Conductor Types

Type #	Description	Geom	Thick. (in)	O.D. (in)	Regions	Heat (Btu/ft3-s)	Heat FF
1	1' Conc Wall	WALL	12.	0.	1	0.	
2	Refuel Wall	WALL	1.5	0.	1	0.	
3	Refuel Ceiling	WALL	5.5	0.	3	0.	
4	Torus	WALL	0.5	0.	1	0.	
5	SFP Surface	WALL	0.001	0.	1	0.	

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Thermal Conductor Type
1
1’ Conc Wall

Region	Mat. #	Bdry. (in)	Thick (in)	Sub-regs.	Heat Factor
1	1	0.	12.	10	0.

Thermal Conductor Type
2
Refuel Wall

Region	Mat. #	Bdry. (in)	Thick (in)	Sub-regs.	Heat Factor
1	3	0.	1.5	6	0.

Thermal Conductor Type
3
Refuel Ceiling

Region	Mat. #	Bdry. (in)	Thick (in)	Sub-regs.	Heat Factor
1	1	0.	3.5	5	0.
2	4	3.5	1.	5	0.
3	5	4.5	1.	5	0.

Thermal Conductor Type
4
Torus

Region	Mat. #	Bdry. (in)	Thick (in)	Sub-regs.	Heat Factor
1	2	0.	0.5	10	0.

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Thermal Conductor Type
5
SFP Surface

Region	Mat. #	Bdry. (in)	Thick (in)	Sub-regs.	Heat Factor
1	6	0.	0.001	1	0.

Cooler/Heater

Heater Cooler #	Description	Vol. #	On Trip #	Off Trip #	Flow Rate (CFM)	Flow Rate FF	Heat Rate (Btu/s)	Heat Rate FF	Phs Opt	Ctrlr Loc
1H	RB 227	1	1				349.3		VTI	1
2H	RB 272	2	1				77.1		VTI	2
3H	RB 300	3	1				123.9		VTI	3
4H	RB 326	4	1				81.		VTI	4
5H	RB 344	5	1				141.5		VTI	5
6H	RB 369 Refuel	6	1				76.7		VTI	6
7C	ECCS Coolers	1	1				349.3		VTI	1

Volumetric Fan - Table 1

Vol Fan #	Description	Flow Path #	On Trip #	Off Trip #	Min DP (psi)	Max DP (psi)
1Q	RB Supply Fan	16			DEFAULT	DEFAULT
2Q	RB Exhaust Fan	17	4	3	DEFAULT	DEFAULT

Volumetric Fan - Table 2

Vol Fan #	Flow Option	Flow Rate (CFM)	Flow Rate FF	Heat Option	Heat Rate (Btu/s)	Heat Rate FF	Disch Vol
1Q	Time	1.	7T	Time			7
2Q	Time	1.	8T	Time			9

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Volume Initial Conditions

Vol #	Total Pressure (psia)	Vapor Temp. (F)	Liquid Temp. (F)	Relative Humidity (%)	Liquid Volume Fract.	Liq. Comp. Set	Vapor Tracer Set	Liquid Tracer Set
def	14.7	104.	104.	20.	0.	NONE	NONE	NONE

Initial Volume Fractions

Vol #	Air Gas 1	Gas 2	Gas 3	Gas 4	Gas 5	Gas 6	Gas 7
def	1.	0.	0.	0.	0.	0.	0.

Drop Fields - Physical Parameters

Field No.	Description	Dnom (in)	Geom Std Dev	Min V Frac
1	Default	0.00393	1.	1e-10

Drop Fields - General Options

Field No.	Unfm Dist	Temp Equil	Velocity Equil	Entrain-ment
1	YES	NO	NO	YES

Drop Fields - Agglomeration Options

Field No.	Inter-field	Intra-field	Therm Diff	FF	Turb Diff	FF	Grav Coll	FF
1	YES	YES	YES		YES		YES	

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Drop Fields - Deposition Options

Field No.	Impaction	FF	Grav Settle	FF	Therm Diff	FF	Turb Diff	FF	Thermophoresis	FF	Diffusiophoresis	FF
1	YES		YES		YES		YES		NO		NO	

Noncondensing Gases

Gas No.	Description	Symbol	Type	Mol. Weight	Lennard-Jones Parameters Diameter (Ang)	e/K (K)
1	Air	Air	POLY	28.97	3.617	97.

Noncondensing Gases - Cp/Visc. Equations

Gas No.	Cp Tmin (R)	Equation Tmax (R)	(Required) Cp (Btu/lbm-R)	Visc. Tmin (R)	Equation Tmax (R)	(Optional) Viscosity (lbm/ft-hr)
1	200.	3000.	0.2889163+5.130			

Materials

Type #	Description	Gap	Tracer Tracking
1	Concrete	NO	NO
2	Steel	NO	NO
3	Siding Insulation	NO	NO
4	Roof Insulation	NO	NO
5	Built Up Roofing	NO	NO
6	Water	NO	NO

Material Type 1 Concrete

Temp. (F)	Density (lbm/ft3)	Cond. (Btu/hr-ft-F)	Sp. Heat (Btu/lbm-F)
	140.	1.	0.2

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Material Type
2
Steel

Temp. (F)	Density (lbm/ft3)	Cond. (Btu/hr-ft-F)	Sp. Heat (Btu/lbm-F)
	489.	26.2	0.12

Material Type
3
Siding Insulation

Temp. (F)	Density (lbm/ft3)	Cond. (Btu/hr-ft-F)	Sp. Heat (Btu/lbm-F)
	2.5	0.02	0.2

Material Type
4
Roof Insulation

Temp. (F)	Density (lbm/ft3)	Cond. (Btu/hr-ft-F)	Sp. Heat (Btu/lbm-F)
	4.5	0.02	0.4

Material Type
5
Built Up Roofing

Temp. (F)	Density (lbm/ft3)	Cond. (Btu/hr-ft-F)	Sp. Heat (Btu/lbm-F)
	70.	0.1	0.35

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Material Type
6
Water

Temp. (F)	Density (lbm/ft3)	Cond. (Btu/hr-ft-F)	Sp. Heat (Btu/lbm-F)
	62.32	0.348	0.999

Component Trips

Trip #	Description	Sense Variable	Sensor 1 Loc.	Sensor 2 Loc.	Var. Limit	Set Point	Delay Time	Rset Trip	Cond Trip	Cond Type
1	LOCA Start	TIME			GE	1000.	0.			AND
2	Initial	TIME			GE	0.	0.			AND
3	RB Fan Off	CONT VAR	5C		LT	-0.251	0.	4	1	OR
4	RB Fan On	CONT VAR	5C		GT	-0.249	0.	3	5	AND
5	LOCA Time	CONT VAR	6C		LT	0.	0.			AND

Forcing Function Tables

FF#	Description	Ind. Var.	Dep. Var.	Points
0	Constant	-	-	0
1T	SGT Flow	Ind. Var.	Dep. Var.	5
2T	OA Temperature	Ind. Var.	Dep. Var.	4
3T	OA Humidity	Ind. Var.	Dep. Var.	4
4T	Cond HTC Coefs	Ind. Var.	Dep. Var.	4
5T	SP Temp	Ind. Var.	Dep. Var.	28
6T	DW Temp	Ind. Var.	Dep. Var.	4
7T	RB Supply Fan	Ind. Var.	Dep. Var.	10
8T	RB Exhaust Fan	Ind. Var.	Dep. Var.	10
9T	SFP Evaporation	Ind. Var.	Dep. Var.	4

Function
1T
SGT Flow
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0.	0.	1000.	0.

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Function (cont.)
1T
SGT Flow
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
1021. 1e+06	0. 93.33	1021.01	93.33

Function
2T
OA Temperature
Ind. Var.: Ind. Var.
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0. 1000.01	104. 93.	1000. 1e+06	104. 93.

Function
3T
OA Humidity
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0. 1000.01	0.2 0.	1000. 1e+06	0.2 0.

Function
4T
Cond HTC Coefs
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0. 999.91	0. 1.	999.9 1e+06	0. 1.

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Function
5T
SP Temp
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0.	95.	1000.	95.
1006.26	104.	1020.6	123.
1032.8	129.	1040.1	131.
1051.	132.	1061.6	133.
1069.5	134.	1076.7	135.
1096.8	136.	1164.	136.9
1258.	140.	1351.	143.5
1445.	146.1	1560.	148.6
1593.	150.4	1767.	153.2
2192.	156.6	3481.	164.1
6120.	173.6	13980.	188.6
28113.	202.5	38199.	207.2
50799.	210.1	61007.	210.7
74778.	210.2	87400.	209.

Function
6T
DW Temp
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0.	150.	1000.	150.
1000.1	294.	1e+06	294.

Function
7T
RB Supply Fan
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0.	128000.	1000.	128000.
1005.	118000.	1006.67	98000.
1008.34	68000.	1010.01	38000.
1010.84	28000.	1011.67	18000.

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Function (cont.)
7T
RB Supply Fan
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
1015.	0.	1e+06	0.

Function
8T
RB Exhaust Fan
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0.	137000.	1000.	137000.
1002.22	65000.	1002.78	60000.
1003.34	50000.	1003.62	40000.
1003.9	30000.	1004.18	20000.
1005.	0.	1e+06	0.

Function
9T
SFP Evaporation
Ind. Var.:
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0.	0.	1000.	0.
1000.1	1.	1e+10	1.

Control Variables

CV #	Description	Func. Form	Initial Value	Coeff. G	Coeff. a0	Min	Max	Upd. Int. Mult.
1C	DP W side	mult	0.	27.7	0.	-1e+32	1e+32	0.
2C	DP E side	mult	0.	27.7	0.	-1e+32	1e+32	0.
3C	DP N Side	mult	0.	27.7	0.	-1e+32	1e+32	0.
4C	DP S Side	mult	0.	27.7	0.	-1e+32	1e+32	0.

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Control Variables (cont.)

CV #	Description	Func. Form	Initial Value	Coeff. G	Coeff. a0	Min	Max	Upd. Int. Mult.
5C	Avg DP Refuel	sum	0.	1.	0.	-1e+32	1e+32	0.
6C	Time After LO	sum	0.	1.	-1000.	-1e+32	1e+32	0.
7C	DP 227	mult	0.	27.7	0.	-1e+32	1e+32	0.
8C	DP 272	mult	0.	27.7	0.	-1e+32	1e+32	0.
9C	DP 300	mult	0.	27.7	0.	-1e+32	1e+32	0.
10C	DP 326	mult	0.	27.7	0.	-1e+32	1e+32	0.
11C	DP 344	mult	0.	27.7	0.	-1e+32	1e+32	0.
12C	Total Leakage	sum	0.	1.	0.	-1e+32	1e+32	0.
13C	Total SGT Flo	sum	0.	1.	0.	-1e+32	1e+32	0.

Function Components
Control Variable 1C
DP W side: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ30	1.	-1e+32	1e+32

Function Components
Control Variable 2C
DP E side: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ31	1.	-1e+32	1e+32

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Function Components
Control Variable 3C
DP N Side: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ32	1.	-1e+32	1e+32

Function Components
Control Variable 4C
DP S Side: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ33	1.	-1e+32	1e+32

Function Components
Control Variable 5C
Avg DP Refuel: G=1.0 a0=0. min=-1.e32 max=1.e32
sum
Y=G*(a0+a1X1+a2X2+...+anXn)

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Cvval(0)	cv1C	0.25	-1e+32	1e+32
2	Cvval(0)	cv2C	0.25	-1e+32	1e+32
3	Cvval(0)	cv3C	0.25	-1e+32	1e+32
4	Cvval(0)	cv4C	0.25	-1e+32	1e+32

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Function Components
Control Variable 6C
Time After LOCA: G=1.0 a0=-1000 min=-1.e32 max=1.e32
sum
Y=G*(a0+a1X1+a2X2+...+anXn)

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Etime	cM	1.	-1e+32	1e+32

Function Components
Control Variable 7C
DP 227: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ34	1.	-1e+32	1e+32

Function Components
Control Variable 8C
DP 272: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ35	1.	-1e+32	1e+32

Function Components
Control Variable 9C
DP 300: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ36	1.	-1e+32	1e+32

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Function Components
Control Variable 10C
DP 326: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ37	1.	-1e+32	1e+32

Function Components
Control Variable 11C
DP 344: G=27.7 a0=0. min=-1.e32 max=1.e32
mult
Y=G*(a1X1*a2X2*...*anXn), a0 unused

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Dpjnc	cJ38	1.	-1e+32	1e+32

Function Components
Control Variable 12C
Total Leakage: G=1.0 a0=0. min=-1.e32 max=1.e32
sum
Y=G*(a0+a1X1+a2X2+...+anXn)

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Wjncc	cJ31	1.	-1e+32	1e+32
2	Wjncc	cJ30	1.	-1e+32	1e+32
3	Wjncc	cJ32	1.	-1e+32	1e+32
4	Wjncc	cJ33	1.	-1e+32	1e+32

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Function Components
Control Variable 13C
Total SGT Flow: G=1.0 a0=0. min=-1.e32 max=1.e32
sum
Y=G*(a0+a1X1+a2X2+...+anXn)

#	X: Gothic_s Name	X: Variable location	a: Mult. coef.	Min. Value	Max Value
1	Wvjncc	cJ39	1.	-1e+32	1e+32
2	Wvjncc	cJ40	1.	-1e+32	1e+32
3	Wvjncc	cJ41	1.	-1e+32	1e+32
4	Wvjncc	cJ42	1.	-1e+32	1e+32
5	Wvjncc	cJ43	1.	-1e+32	1e+32
6	Wvjncc	cJ44	1.	-1e+32	1e+32

Time Domain Data (Seconds)

Time Dom	DT Min	DT Max	DT Ratio	End Time	Print Int	Graph Int	Gas Error Relax T	Dump Int	Ph Chng T Scale	L Flow Shutoff
1	0.001	1.	1.	999.9	100.	2.	DEFAULT	0.	DEFAULT	DEFAULT
2	0.001	1.	1e+20	1000.	50.	2.	DEFAULT	0.	DEFAULT	DEFAULT
3	0.001	0.1	1.	4600.	50.	2.	DEFAULT	0.	DEFAULT	DEFAULT

Solution Options

Time Dom	Solution Method	Imp Conv Limit	Imp Iter Limit	Pres Sol Method	Pres Conv Limit	Pres Iter Limit	Differ Scheme	Burn Sharp
1	SEMI-IMP	0.	1	DIRECT	0.	1	FOUP	0.
2	SEMI-IMP	0.	1	DIRECT	0.	1	FOUP	0.
3	SEMI-IMP	0.	1	DIRECT	0.	1	FOUP	0.

Control Limits

Time Dom	Tot. Pres. Change (psia)	Stm. Enth. Change (Btu/lbm)	Domain End Dt Controls	--V Interface HT Shutoff-- Start V Frac	End V Frac	Ramp Exp
1	DEFAULT	DEFAULT	ON	DEFAULT	DEFAULT	DEFAULT
2	DEFAULT	DEFAULT	ON	DEFAULT	DEFAULT	DEFAULT
3	DEFAULT	DEFAULT	ON	DEFAULT	DEFAULT	DEFAULT

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Run Options	
Option	Setting
Restart Option	NONE
Start Time (sec)	0.0
Parallel Processes	1
Preprocessor Multithreading	YES
Revaporization Fraction	DEFAULT
Maximum Mist Density (lbm/ft3)	DEFAULT
Drop Diam. From Mist (in)	DEFAULT
Minimum HT Coeff. (B/h-ft2-F)	0.0
Reference Pressure (psia)	IGNORE
Maximum Pressure (psia)	DEFAULT
Forced Ent. Drop Diam. (in)	DEFAULT
Vapor Phase Head Correction	INCLUDE
Kinetic Energy	IGNORE
Vapor Phase	INCLUDE
Liquid Phase	INCLUDE
Drop Phase	INCLUDE
Force Equilibrium	IGNORE
Drop-Liq. Conversion	INCLUDE
QA Logging	OFF
Debug Output Level	0
Debug Starting Time Step	0
Debug Time Step Frequency	1
Restart Dump on CPU Interval (sec)	3600.
Pressure Initialization Iteration	0
Pressure Initialization Convergenc	1.0e-6
Solver Command Line Options	

Restart Options	
Option	Setting
Restart Data File	
Graphics Data File	
Restart Time Step #	0
Restart Time Control	NEW

Graphs							
Graph #	Description	Curve Number 1	2	3	4	5	Curve Ops
0	M & E Imbalance	EM	EE				

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Graphs (cont.)

Graph #	Description	Curve Number 1	2	3	4	5	Curve Ops
1	RB Temperatures	TV1	TV2	TV3	TV4	TV5	
2	Refuel Floor Te	TV6					
3	RB Pressures	PR1	PR2	PR3	PR4	PR5	
4	Refuel Floor Pr	PR6					
5	Refuel Floor Di	cv1C	cv2C	cv3C	cv4C	cv5C	
6	RB Differential	cv7C	cv8C	cv9C	cv10C	cv11C	
7	Leakage Flows	FV31	FV30	FV32	FV33		
8	SGT and Total L	cv12C	cv13C				
9	Avg Refuel Floo	cv5C					

Data Files

File #	Name	Type	Inter-polate	Output Files	Detail Level	Format Option
1	JAF Drawdown Ca	TIME	YES	SINGLE	FULL	

Table List

Entry	Description
1	Flow Paths - Table 1
2	Flow Paths - Table 2
3	Flow Paths - Table 3

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Data Files

File #	Name	Type	Inter-polate	Output Files	Detail Level	Format Option
1	**JAF Drawdown Ca**	TIME	YES	SINGLE	FULL	

Fluid Boundary Conditions - Table 1

BC#	Description	Press. (psia)	FF	Temp. (F)	FF	Flow (lbm/s)	FF	S P	J O	ON Trip	OFF Trip	Elev. (ft)
1P	Exhaust Wall Am	14.7		1	2T			N	N			272.
2F	Exhaust Wall Am	14.7		1	2T	v1e10		N	N			272.
3P	W Wall Ambient	**14.6973**		1	2T			N	N			272.
4F	W Wall Ambient	**14.6973**		1	2T	v1e10		N	N			272.
5P	E Wall Ambient	**14.6973**		1	2T			N	N			272.
6F	E Wall Ambient	**14.6973**		1	2T	v1e10		N	N			272.
7P	N Wall Ambient	**14.6971**		1	2T			N	N			272.
8F	N Wall Ambient	**14.6971**		1	2T	v1e10		N	N			272.
9P	S Wall Ambient	**14.7053**		1	2T			N	N			272.
10F	S Wall Ambient	**14.7053**		1	2T	v1e10		N	N			272.
11F	SGT 227	14.7		1	2T	V-0.2	1T	N	N			656.6
12F	SGT 272	14.7		1	2T	V-0.2	1T	N	N			656.6
13F	SGT 300	14.7		1	2T	V-0.2	1T	N	N			656.6
14F	SGT 326	14.7		1	2T	V-0.2	1T	N	N			656.6
15F	SGT 344	14.7		1	2T	V-0.2	1T	N	N			656.6
16F	SGT 369	14.7		1	2T	V-0	1T	N	N			656.6
17F	SFP Evap	1.945		125		0.063	9T	N	N			369.5

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Thermal Conductors

Cond #	Description	Vol A	Srf Opt	Vol B	Srf Opt	Cond Type	S. A. (ft2)	Init. T.(F)	I/X	Grp #
1	RB 227 Walls	1	1	1	4	1	74052.	**70.**	I	
2	RB 272 Walls	2	1	2	4	1	70113.	**70.**	I	
3	RB 300 Walls	3	1	3	4	1	54604.	**70.**	I	
4	RB 326 Walls	4	1	4	4	1	40453.	**70.**	I	
5	RB 344 Walls	5	1	5	4	1	38310.	**70.**	I	
6	RB 369 Walls	6	3	6	4	1	17920.	**70.**	I	
7	RB 227 - Torus	1	5	1	6	4	31445.	**70.**	I	
8	RB 369 - SFP	6	3	6	8	5	1240.	**70.**	I	

Volume Initial Conditions

Vol #	Total Pressure (psia)	Vapor Temp. (F)	Liquid Temp. (F)	Relative Humidity (%)	Liquid Volume Fract.	Liq. Comp. Set	Vapor Tracer Set	Liquid Tracer Set
def	14.7	**70.**	**70.**	20.	0.	NONE	NONE	NONE

Data Files

File #	Name	Type	Inter-polate	Output Files	Detail Level	Format Option
1	**JAF Drawdown Ca**	TIME	YES	SINGLE	FULL	

Conductor Surface Options - Table 1

Surf Opt #	Description	Heat Transfer Option	Nominal Value	FF	Cnd/ Cnv Opt	Cnd Opt	Sp Cnv HTC	Nat Cnv Opt	For Cnv Opt
1	Interior Wall	Direct		4T		DLM-FM		VERT SURF	OFF
2	Int Ceiling	Direct		4T		DLM-FM		FACE DOWN	OFF
3	Int Floor	Direct		4T		DLM-FM		FACE UP	OFF
4	Insulated	Sp Heat	0.						
5	Torus	Direct		4T		DLM-FM		HORZ CYL	OFF
6	SP Temp	Sp Temp	1.	5T					
7	DW Temp	Sp Temp	1.	6T					
8	SFP Temp	Sp Temp	125.						
9	Outside Air	Sp Temp	**-10.**						

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Function
2T
OA Temperature
Ind. Var.: Ind. Var.
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0.	**70.**	1000.	**70.**
1000.01	**-10.**	1e+06	**-10.**

Modifications in: C:\Users\jlwright\Documents\Exelon AST\JAF Drawdown\Gothic\Final\JAF Drawdown Case4.GTH
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Thermal Conductors

Cond #	Description	Vol A	Srf Opt	Vol B	Srf Opt	Cond Type	S. A. (ft2)	Init. T.(F)	I/X	Grp #
1	RB 227 Walls	1	1	1	4	1	74052.	**70.**	I	
2	RB 272 Walls	2	1	2	4	1	70113.	**70.**	I	
3	RB 300 Walls	3	1	3	4	1	54604.	**70.**	I	
4	RB 326 Walls	4	1	4	4	1	40453.	**70.**	I	
5	RB 344 Walls	5	1	5	4	1	38310.	**70.**	I	
6	RB 369 Walls	6	3	6	4	1	17920.	**70.**	I	
7	RB 227 - Torus	1	5	1	6	4	31445.	**70.**	I	
8	RB 369 - SFP	6	3	6	8	5	1240.	**70.**	I	

Volume Initial Conditions

Vol #	Total Pressure (psia)	Vapor Temp. (F)	Liquid Temp. (F)	Relative Humidity (%)	Liquid Volume Fract.	Liq. Comp. Set	Vapor Tracer Set	Liquid Tracer Set
def	14.7	**70.**	**70.**	20.	0.	NONE	NONE	NONE

Data Files

File #	Name	Type	Inter-polate	Output Files	Detail Level	Format Option
1	**JAF Drawdown Ca**	TIME	YES	SINGLE	FULL	

Fluid Boundary Conditions - Table 1

BC#	Description	Press. (psia)	FF	Temp. (F)	FF	Flow (lbm/s)	FF	S P	J O	ON Trip	OFF Trip	Elev. (ft)
1P	Exhaust Wall Am	14.7		1	2T			N	N			272.
2F	Exhaust Wall Am	14.7		1	2T	v1e10		N	N			272.
3P	W Wall Ambient	**14.6967**		1	2T			N	N			272.
4F	W Wall Ambient	**14.6967**		1	2T	v1e10		N	N			272.
5P	E Wall Ambient	**14.6967**		1	2T			N	N			272.
6F	E Wall Ambient	**14.6967**		1	2T	v1e10		N	N			272.
7P	N Wall Ambient	**14.6965**		1	2T			N	N			272.
8F	N Wall Ambient	**14.6965**		1	2T	v1e10		N	N			272.
9P	S Wall Ambient	**14.7066**		1	2T			N	N			272.
10F	S Wall Ambient	**14.7066**		1	2T	v1e10		N	N			272.

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Fluid Boundary Conditions - Table 1 (cont.)

BC#	Description	Press. (psia)	FF	Temp. (F)	FF	Flow (lbm/s)	FF	S P	J O	ON Trip	OFF Trip	Elev. (ft)
11F	SGT 227	14.7		1	2T	V-0.2	1T	N	N			656.6
12F	SGT 272	14.7		1	2T	V-0.2	1T	N	N			656.6
13F	SGT 300	14.7		1	2T	V-0.2	1T	N	N			656.6
14F	SGT 326	14.7		1	2T	V-0.2	1T	N	N			656.6
15F	SGT 344	14.7		1	2T	V-0.2	1T	N	N			656.6
16F	SGT 369	14.7		1	2T	V-0	1T	N	N			656.6
17F	SFP Evap	1.945		125		0.063	9T	N	N			369.5

Conductor Surface Options - Table 1

Surf Opt #	Description	Heat Transfer Option	Nominal Value	FF	Cnd/ Cnv Opt	Cnd Opt	Sp Cnv HTC	Nat Cnv Opt	For Cnv Opt
1	Interior Wall	Direct		4T		DLM-FM		VERT SURF	OFF
2	Int Ceiling	Direct		4T		DLM-FM		FACE DOWN	OFF
3	Int Floor	Direct		4T		DLM-FM		FACE UP	OFF
4	Insulated	Sp Heat	0.						
5	Torus	Direct		4T		DLM-FM		HORZ CYL	OFF
6	SP Temp	Sp Temp	1.	5T					
7	DW Temp	Sp Temp	1.	6T					
8	SFP Temp	Sp Temp	125.						
9	Outside Air	Sp Temp	**-10.**						

Function
2T
OA Temperature
Ind. Var.: Ind. Var.
Dep. Var.:

Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0.	**70.**	1000.	**70.**
1000.01	**-10.**	1e+06	**-10.**

Table 1: Reactor Building Volumes

	Reference Values			Gothic Inputs				
Elev (ft)	Room #	Room Description	Volume (ft^3)	CV No.	Volume (ft^3)	Height (ft)	Aw (ft^2)	Dh (ft)
227.5	227-1	West Crescent	62180	1	394480	44.5	74052	21.3
	227-2	East Crescent	111200					
	227-3	Lower Torus Room	9690					
	227-4	Lower Torus Room	9690					
	227-5	Lower Torus Room	9690					
	227-6	Lower Torus Room	9690					
	227-7	Lower Torus Room	9690					
	227-8	Lower Torus Room	9690					
	227-9	Lower Torus Room	9690					
	227-10	Lower Torus Room	9690					
	244-1	Upper Torus Room	18150					
	244-2	Upper Torus Room	17390					
	244-3	Upper Torus Room	17960					
	244-4	Upper Torus Room	16440					
	244-5	Upper Torus Room	18390					
	244-6	Upper Torus Room	20460					
	244-7	Upper Torus Room	18350					
	244-8	Upper Torus Room	16440					
272	272-1	HPCI Room	2712	2	365571	28	70113	20.9
	272-2	RCIC Room	2968					
	272-3	General Area	17558					
	272-4	West CRD Area	32880					
	272-5	RHR HX A	8260					
	272-6	West CRD Area	29380					
	272-7	CRD Pump Area	58120					
	272-8	CRD Repair Area	8990					
	272-9-A	MCC Area by HPCI Rm	16201					
	272-9-B	MCC Area by RCIC Rm	14564					
	272-10	Track Bay Area	43710					
	272-11	RHR HX B	8790					
	272-12	East CRD Area 1	29798					
	272-13	East CRD Area 2	33650					
	272-14	Neutron TIP Room	8310					
	272-15	General Area Entrance Area	36030					
	272-16	General Area MCC/CRD	13650					
300	300-1	RWCU Pump Rm B	2000	3	315399	26.75	54604	23.1
	300-2	RWCU Pump Rm A	1992					
	300-3A		94000					
	300-3B		1067					
	300-3C		1434					
	300-3D		4470					
	300-3E		9455					
	300-3F		153					
	300-3G		408					

	Reference Values			Gothic Inputs				
Elev (ft)	Room #	Room Description	Volume (ft^3)	CV No.	Volume (ft^3)	Height (ft)	Aw (ft^2)	Dh (ft)
	300-4		52940					
	300-5		14700					
	300-6		10350					
	300-7	RWCU Non-Regen HX Rm	23940					
	300-8		25160					
	300-9	Large Hatch Area	72340					
	300-10	Cleanup/Decant Pump Rm	990					
326.75	326-1	Standby Liquid Control	25600	4	182930	17.75	40453	18.1
	326-2		13950					
	326-3	RWCU Holding Pump B Rm	3340					
	326-4	General SW Area	65000					
	326-5	General SE Area	52320					
	326-6	Cont Equip Room	8930					
	326-7	RWCU Holding Pump A Rm	3340					
	326-8	Fuel Pool HX Room	10450					
344.5	344-1	Large Hatch Area	72330	5	214400	25	38310	22.4
	344-2	General SW Area	94660					
	344-3	Battery Room A Surround	31890					
	344-4	East of Battery Room A	15520					
369.5	369-1	Refueling Floor	900880	6	900880	60.4167	72851	49.5
429.92		Roof						
Total			2373660		2373660			

Table 2: Reactor Building Flow Paths

FP Description	Reference Junction / Volumes	FP #	Vol 1	Vol 2	A (ft^2)	Dh (ft)	Inertia L (ft)
227 - 272 Stairwell	2 / 272-2 to 227-10	1	1	2	91	7.1	36.25
272 - 300 Large Hatch	18 / 272-10 to 300-9	2	2	3	428	20.5	27.375
300 - 326 Large Hatch	40 / 300-9 to 326-5	3	3	4	428	20.5	22.25
326 - 344 Large Hatch	52 / 326-5 to 344-1	4	4	5	428	20.5	21.375
344 - 369 Large Hatch	55 / 344-1 to 369-1	5	5	6	428	20.5	42.708

Table 3: Reactor Building Thermal Conductors

	Reference Values				Gothic		
Elevation	ID	Volume	Orient. *	A (ft^2)	TC #	Vol 1 & 2	A (ft^2)
227	1	227-1	1	1685	1	1	74052
	2	227-1	3	1685			
	3	227-1	2	8936			
	4	227-2	1	3014			
	5	227-2	2	14990			
	6	227-2	3	3014			
	136	227-3	1	741			
	137	227-3	2	1461			
	138	227-4	1	741			
	139	227-4	2	1461			
	140	227-5	1	741			
	141	227-5	2	1461			
	142	227-6	1	741			
	143	227-6	2	1461			
	144	227-7	1	741			
	145	227-7	2	1461			
	146	227-8	1	741			
	147	227-8	2	1461			
	148	227-9	1	741			
	149	227-9	2	1461			
	150	227-10	1	741			
	151	227-10	2	1461			
	152	244-1	3	741			
	153	244-1	2	2148			
	154	244-2	3	741			
	155	244-2	2	2148			
	156	244-3	3	741			
	157	244-3	2	2148			
	158	244-4	3	741			
	159	244-4	2	2148			
	160	244-5	3	741			
	161	244-5	2	2148			
	162	244-6	3	741			
	163	244-6	2	2148			
	164	244-7	3	741			
	165	244-7	2	2148			
	166	244-8	3	741			
	167	244-8	2	2148			
272	7	272-1	1	309.5	2	2	70113
	8	272-1	2	618			
	9	272-1	3	309.5			
	10	272-2	1	334			
	11	272-2	2	762			

Elevation	Reference Values ID	Volume	Orient. *	A (ft^2)	Gothic TC #	Vol 1 & 2	A (ft^2)
	12	272-2	3	334			
	13	272-3	1	733			
	14	272-3	2	1285			
	15	272-3	3	733			
	16	272-4	1	1306			
	17	272-4	2	1749			
	18	272-4	2	952			
	19	272-4	3	1306			
	20	272-5	1	331.5			
	21	272-5	2	2120			
	22	272-5	3	331.5			
	23	272-6	1	1116			
	24	272-6	2	524			
	25	272-6	2	1501			
	26	272-6	3	1116			
	27	272-7	1	2352			
	28	272-7	2	5970			
	29	272-7	3	2352			
	30	272-8	1	631			
	31	272-8	2	1473			
	32	272-8	3	631			
	36	272-98	1	853.5			
	37	272-98	2	1403			
	38	272-98	3	853.5			
	33	272-9A	1	853.5			
	34	272-9A	2	1403			
	35	272-9A	3	853.5			
	39	272-10	1	1390			
	40	272-10	2	2696			
	41	272-10	3	1390			
	42	272-11	1	366			
	43	272-11	2	2226			
	44	272-11	3	366			
	45	272-12	1	1267			
	46	272-12	2	889			
	47	272-12	2	850			
	48	272-12	3	1267			
	49	272-13	1	1378.5			
	50	272-13	2	544			
	51	272-13	2	1575			
	52	272-13	3	1378.5			
	53	272-14	1	833			
	54	272-14	2	175			
	55	272-14	2	3305			
	56	272-14	3	833			

	Reference Values				Gothic		
Elevation	ID	Volume	Orient. *	A (ft^2)	TC #	Vol 1 & 2	A (ft^2)
	57	272-15	1	1893.5			
	58	272-15	2	3120			
	59	272-15	3	1893.5			
	60	272-16	1	960			
	61	272-16	2	1157			
	62	272-16	3	960			
300	63	300-1	1	200	3	3	54604
	64	300-1	2	125			
	65	300-1	2	415			
	66	300-1	3	200			
	67	300-2	1	200			
	68	300-2	2	125			
	69	300-2	2	415			
	70	300-2	3	200			
	182	300-3A	1	4277.635			
	183	300-3A	2	4752.015			
	184	300-3A	3	4247.33			
	168	300-3B	1	168.5			
	169	300-3B	2	292.61			
	170	300-3C	2	117.3			
	171	300-3C	3	200.5			
	172	300-3D	1	268.33			
	173	300-3D	2	113.1			
	174	300-3D	3	326.67			
	175	300-3E	1	392.375			
	176	300-3E	2	752.375			
	177	300-3E	3	402.5			
	178	300-3F	1	19.16			
	179	300-3F	2	94.6			
	180	300-3G	1	51			
	181	300-3G	2	106			
	71	300-4	1	2530			
	72	300-4	2	1150			
	73	300-4	2	3015			
	74	300-4	3	2530			
	75	300-5	1	380			
	76	300-5	2	767			
	77	300-5	2	1521			
	78	300-5	3	380			
	79	300-6	1	399			
	80	300-6	2	1944			
	81	300-6	3	399			
	82	300-7	1	796.5			
	83	300-7	2	971			
	84	300-7	2	1506			

	Reference Values				Gothic		
Elevation	ID	Volume	Orient. *	A (ft^2)	TC #	Vol 1 & 2	A (ft^2)
	85	300-7	3	796.5			
	86	300-8	1	1035			
	87	300-8	2	2963			
	88	300-8	3	1035			
	89	300-9	1	3080			
	90	300-9	2	5081			
	91	300-9	2	137			
	92	300-9	3	3080			
	93	300-10	1	115.5			
	94	300-10	2	415			
	95	300-10	3	115.5			
326	96	326-1	1	1548.5	4	4	40453
	97	326-1	2	393			
	98	326-1	2	1556			
	99	326-1	3	1548.5			
	100	326-2	1	826.5			
	101	326-2	2	2627			
	102	326-2	3	826.5			
	103	326-3	1	327.5			
	104	326-3	2	726			
	105	326-3	3	327.5			
	106	326-4	1	4248			
	107	326-4	2	422.5			
	108	326-4	2	3298.5			
	109	326-4	3	4248			
	110	326-5	1	2884.5			
	111	326-5	2	4428			
	112	326-5	3	2884.5			
	113	326-6	1	581.8			
	114	326-6	2	1511			
	115	326-6	3	581.8			
	116	326-7	1	327.4			
	117	326-7	2	726			
	118	326-7	3	327.4			
	119	326-8	1	681			
	120	326-8	2	544			
	121	326-8	2	1371			
	122	326-8	3	681			
344	123	344-1	1	3301	5	5	38310
	124	344-1	2	4618			
	125	344-1	3	3301			
	126	344-2	1	4663			
	127	344-2	2	4404			
	128	344-2	3	4663			
	129	344-3	1	1596			

	Reference Values				Gothic		
Elevation	ID	Volume	Orient. *	A (ft^2)	TC #	Vol 1 & 2	A (ft^2)
	130	344-3	2	3958			
	131	344-3	3	1706			
	132	344-4	1	954			
	133	344-4	2	4192			
	134	344-4	3	954			
369	135	369-1	1	17920	6	6	17920

* Orientation:

1 - Floor

2 - Wall

3 - Ceiling

Table 4: Reactor Building Heat Loads

Elevation (ft)	Reference Values Space	Heat Load (BTU/hr)	Notes	Gothic CV	Heat Load (BTU/s)
369	1	6550	1	6	76.7
		113000	2		
		18500	3		
		138000	4		
344	2A/B	44740		5	141.5
	3&4	24990			
	5	428460			
	8A	1225			
	11A/B	10100			
326	12A/B	6400		4	81.0
	9	237290			
	10	43440			
	13	4380			
300	15	300000		3	123.9
	17A/B	89400			
	18	38102			
	19A/B	18650			
272	16A/B	12938	5	2	77.1
	21	212190			
	22	9535			
	23	6200			
	24	9000			
	25	6660			
	26	0			
	27	7900			
	28	13040			
227		1257600	6	1	349.3

Notes:

1 DW head heat load
2 Roof heat load
3 Refueling elevation wall heat load
4 Lighting heat load
5 Includes RHR HX and piping heat load at LOCA conditions
6 Total Crescent Area LOCA heat load

Table 5: Surface and Atmospheric Pressures Due To Wind

Parameter		Summer Conditions		Winter Conditions	
Wind speed		20 mph		20 mph	
		1760 fpm		1760 fpm	
Temperature (F)		93 F		-10 F	
Air density		0.0718 lb/ft3		0.0883 lb/ft3	
Velocity P (Pv)		0.1849 inwg		0.2274 inwg	
		0.0067 psi		0.0082 psi	
Face	Cp	Surface P Ps (inwg)	Atm P P (psi)	Surface P Ps (inwg)	Atm P P (psi)
S	0.8	0.1479	14.7053	0.1819	14.7066
N	-0.43	-0.0795	14.6971	-0.0978	14.6965
E/W	-0.4	-0.0740	14.6973	-0.0909	14.6967

Table 6: RB Ventilation System Loss Coefficients

	Supply		Exhaust	
Duct DP	5.813	inwg	6.164	inwg
Duct A	28.3	ft^2	28.3	ft^2

Elev	Flow	K
ft	cfm	
227	15500	310.8
272	6000	2074.3
300	19500	196.4
326	7500	1327.5
344	6050	2040.1
369	76500	12.8
Total	131050	

Flow	K
cfm	
3400	6850.1
3600	6110.1
34000	68.5
11000	654.4
9000	977.6
70000	16.2
131000	

Table 7: RB Ventilation Supply Flow During SC Isolation Valve Closure

Flow Rate	Vlv Pos	Vlv Closure	Time
(cfm)	(degree)	DT (s)	(s)
128000	0-30	5	0
118000	30-40	1.67	5
98000	40-50	1.67	6.67
68000	50-60	1.67	8.34
38000	60-65	0.83	10.01
28000	65-70	0.83	10.84
18000	70-90	3.33	11.67
0	90		15

Table 8: RB Ventilation Exhaust Flow During SC Isolation Valve Closure

Flow Rate	Vlv Pos	Vlv Closure	Time
(cfm)	(degree)	DT (s)	(s)
65000	0-40	2.22	2.22
60000	40-50	0.56	2.78
50000	50-60	0.56	3.34
40000	60-65	0.28	3.62
30000	65-70	0.28	3.9
20000	70-75	0.28	4.18
0	75-90	0.83	5.0

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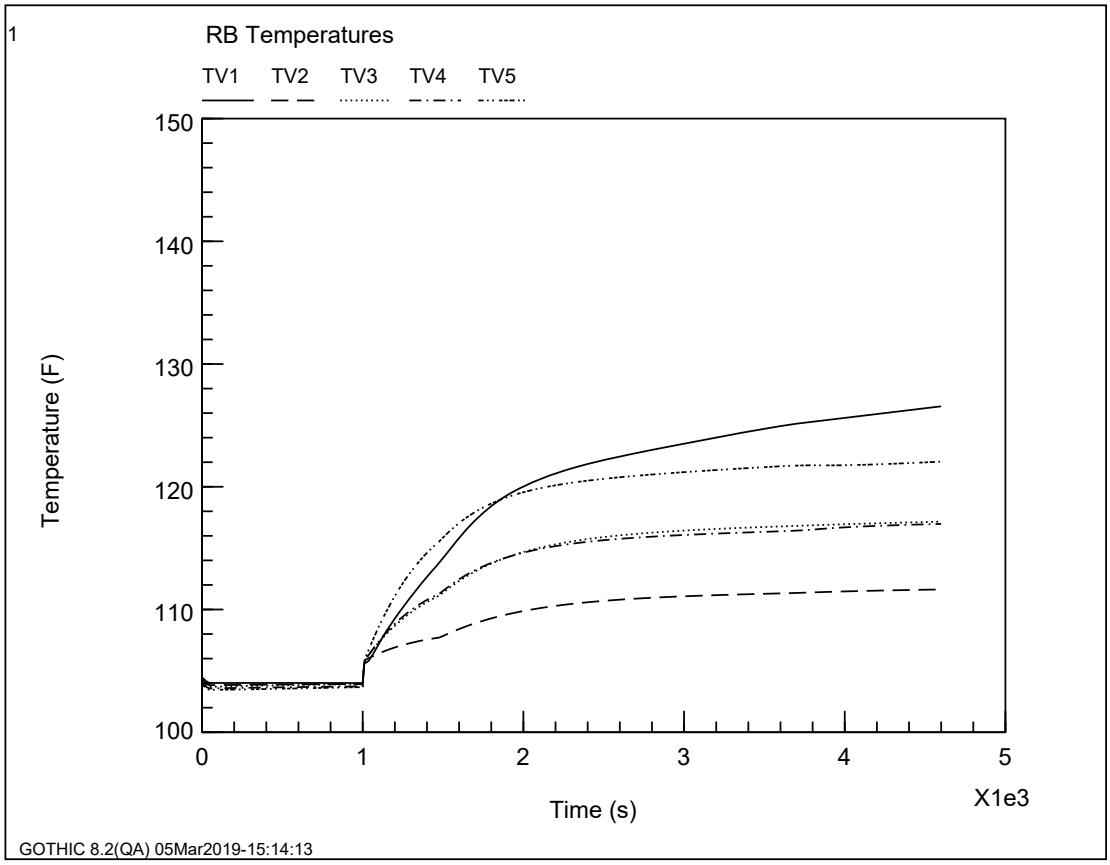

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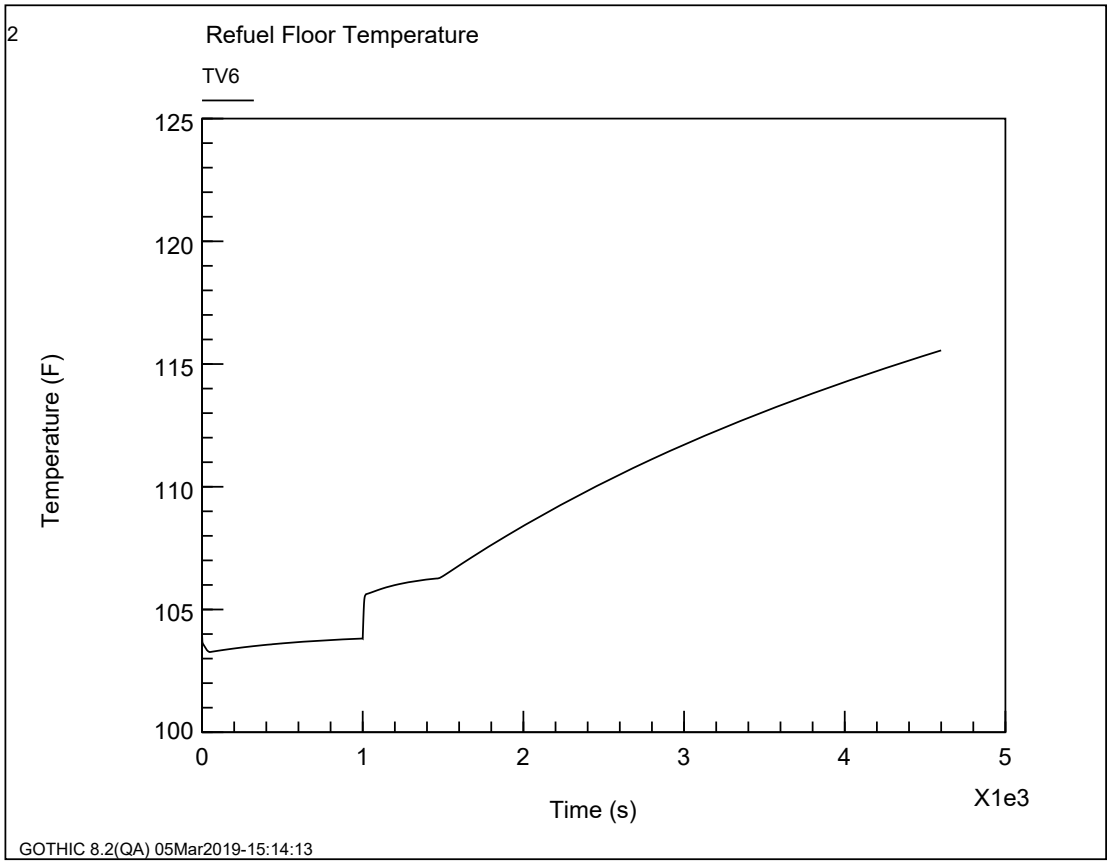

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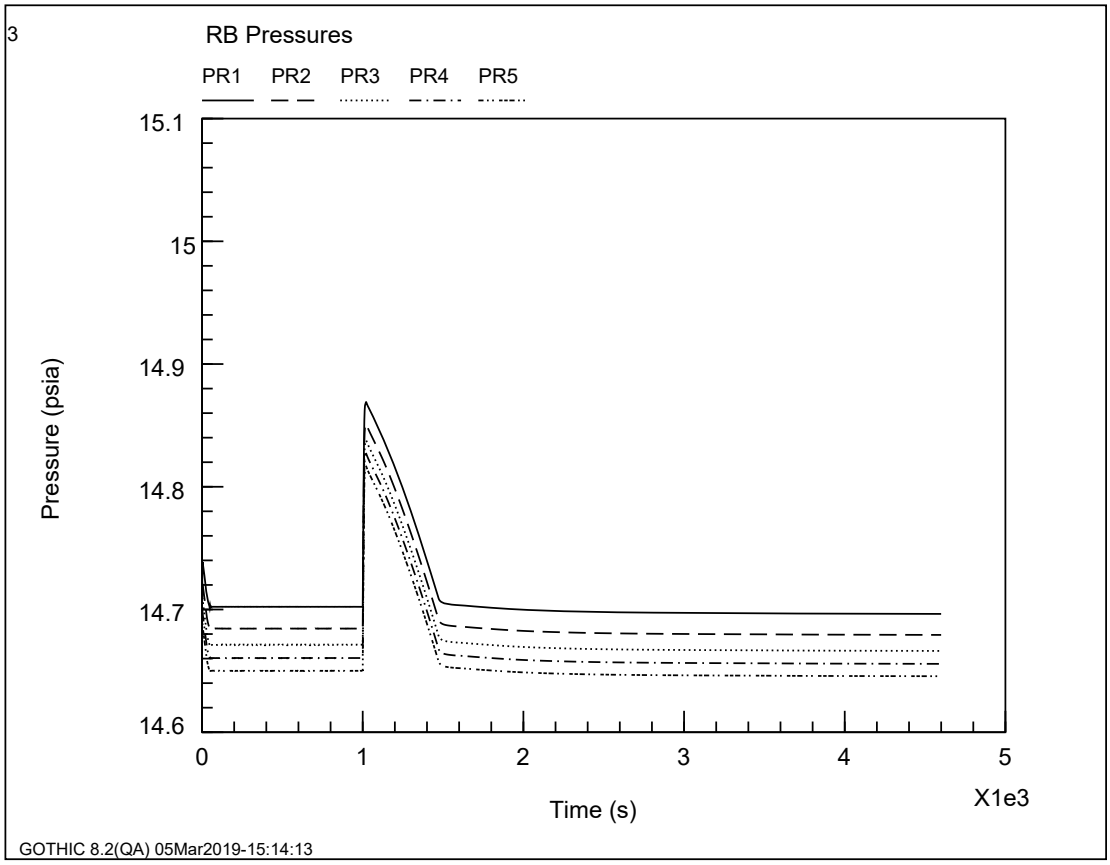

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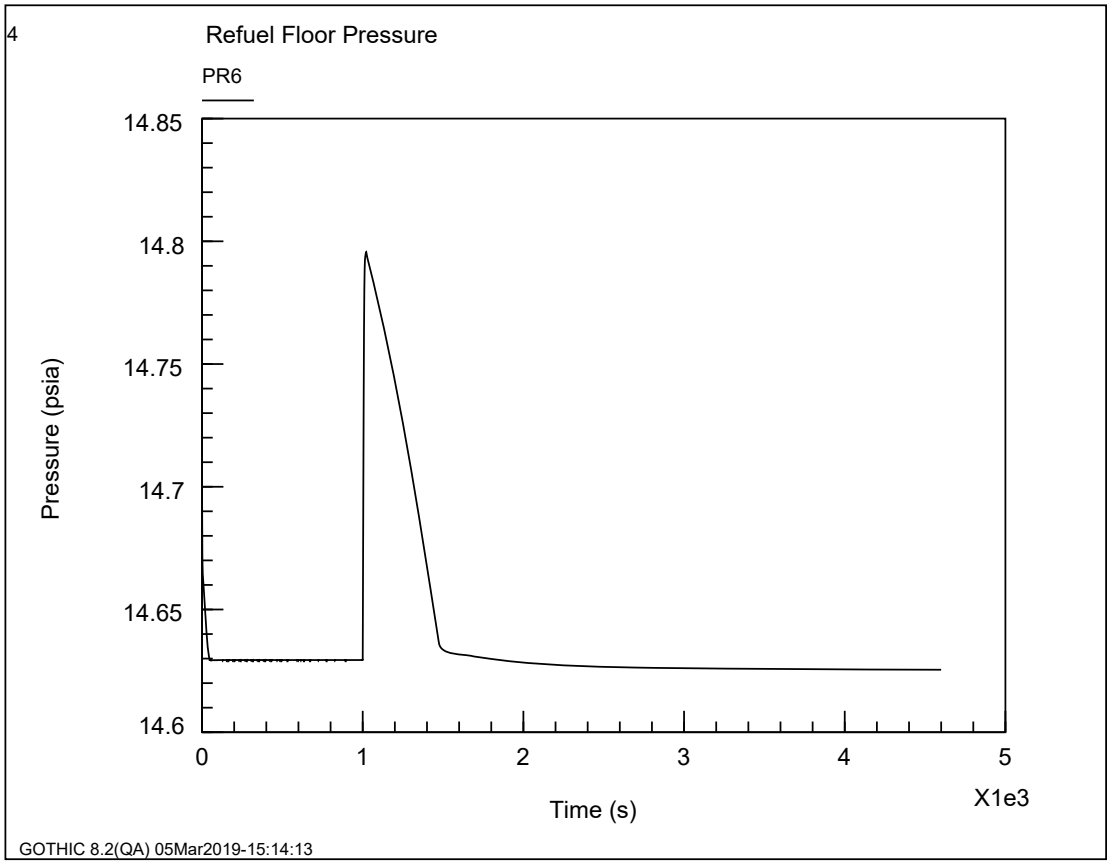

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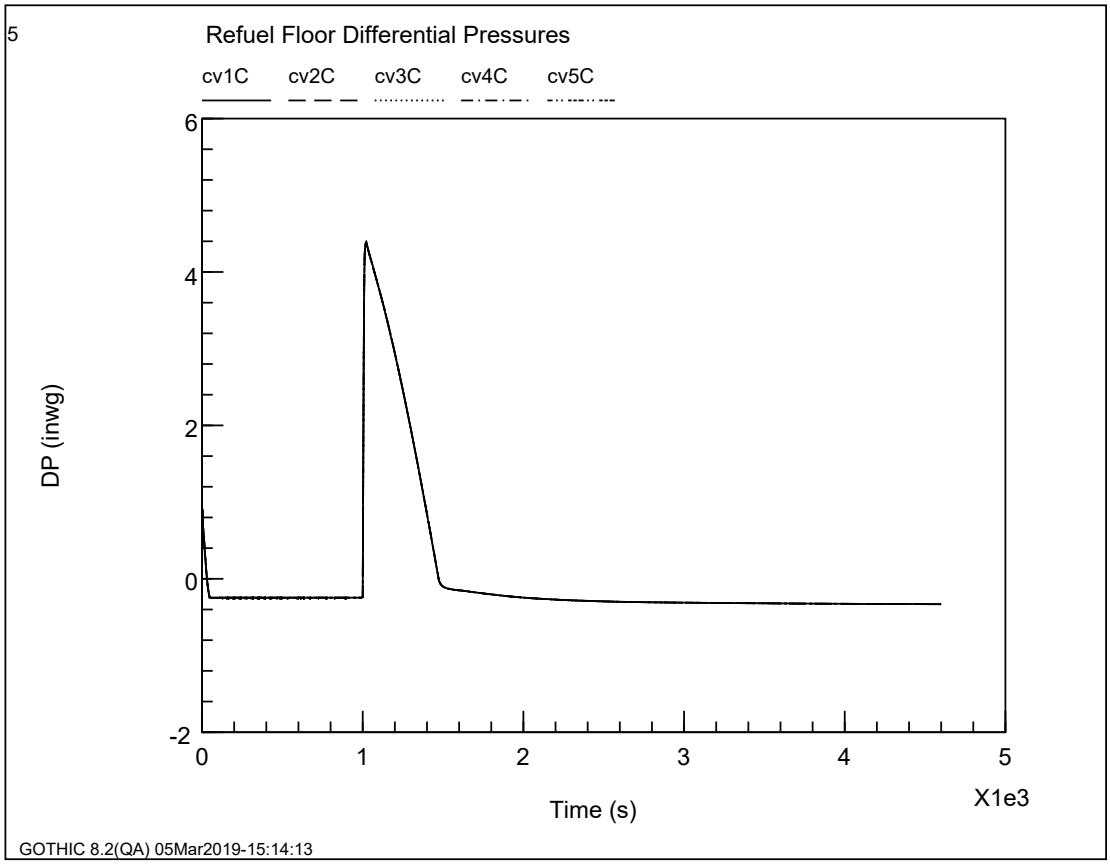

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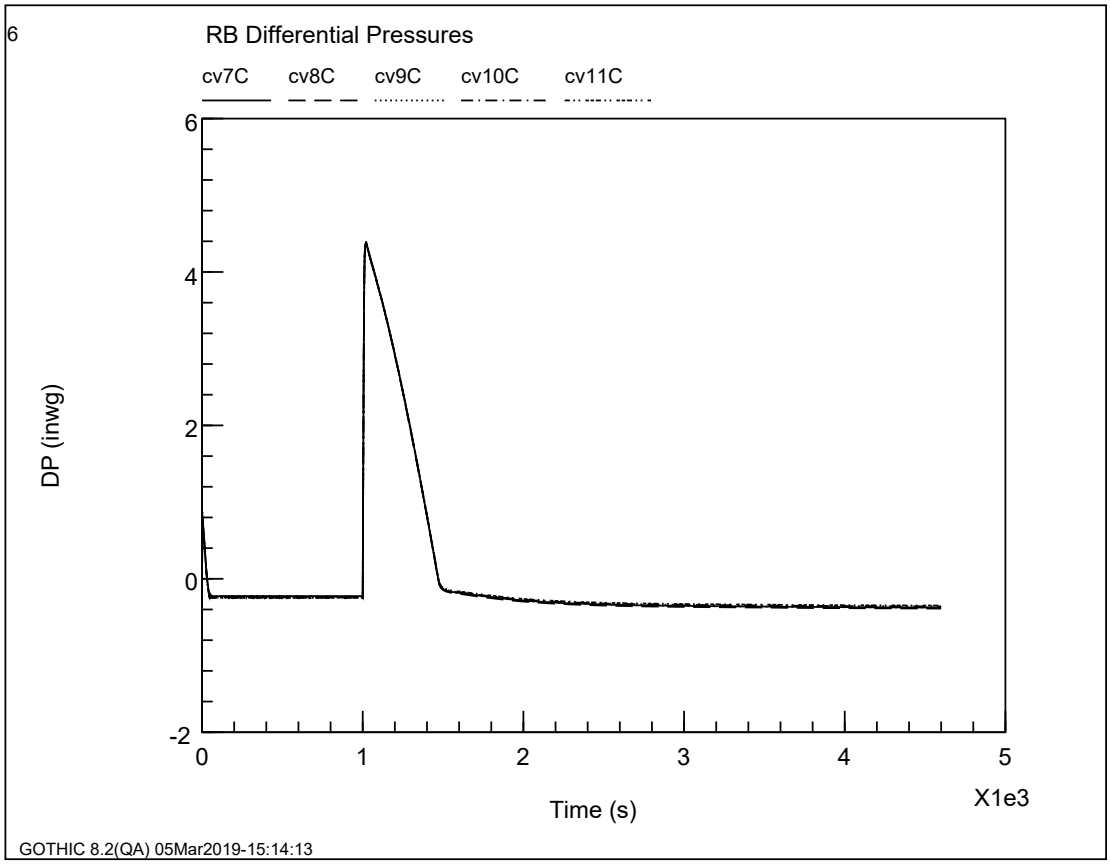

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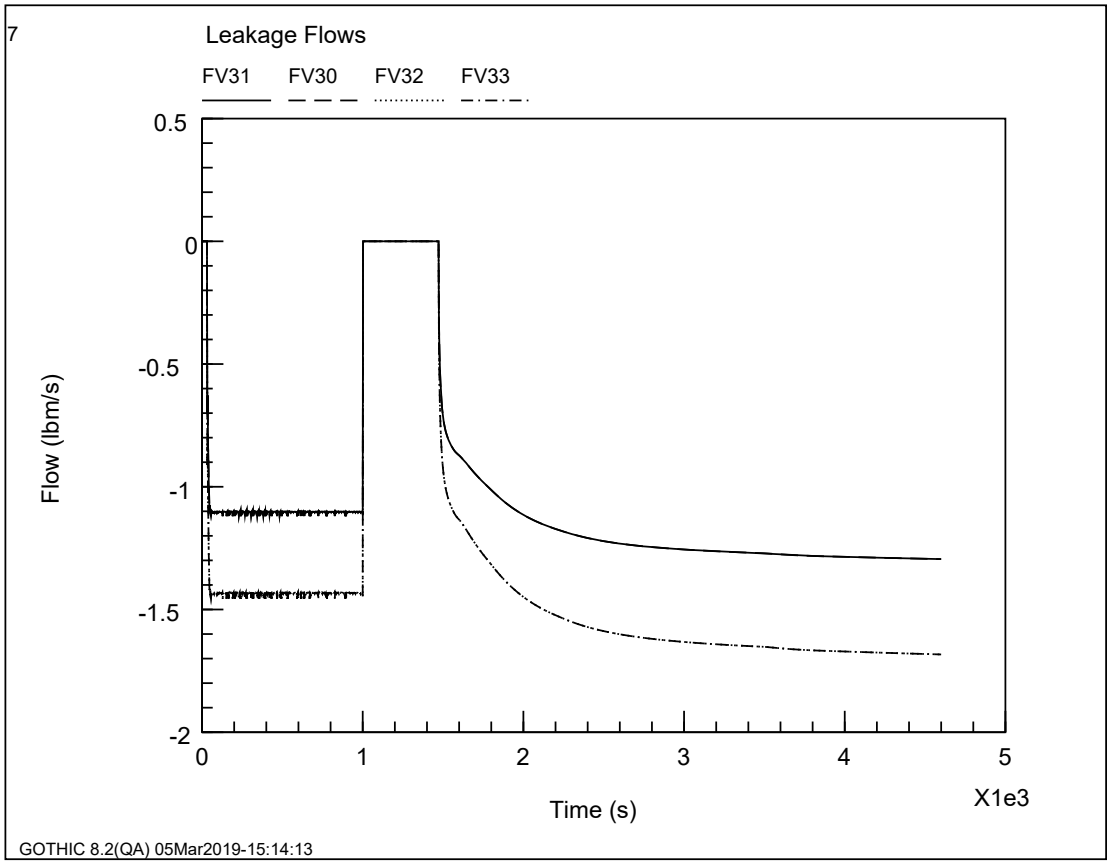

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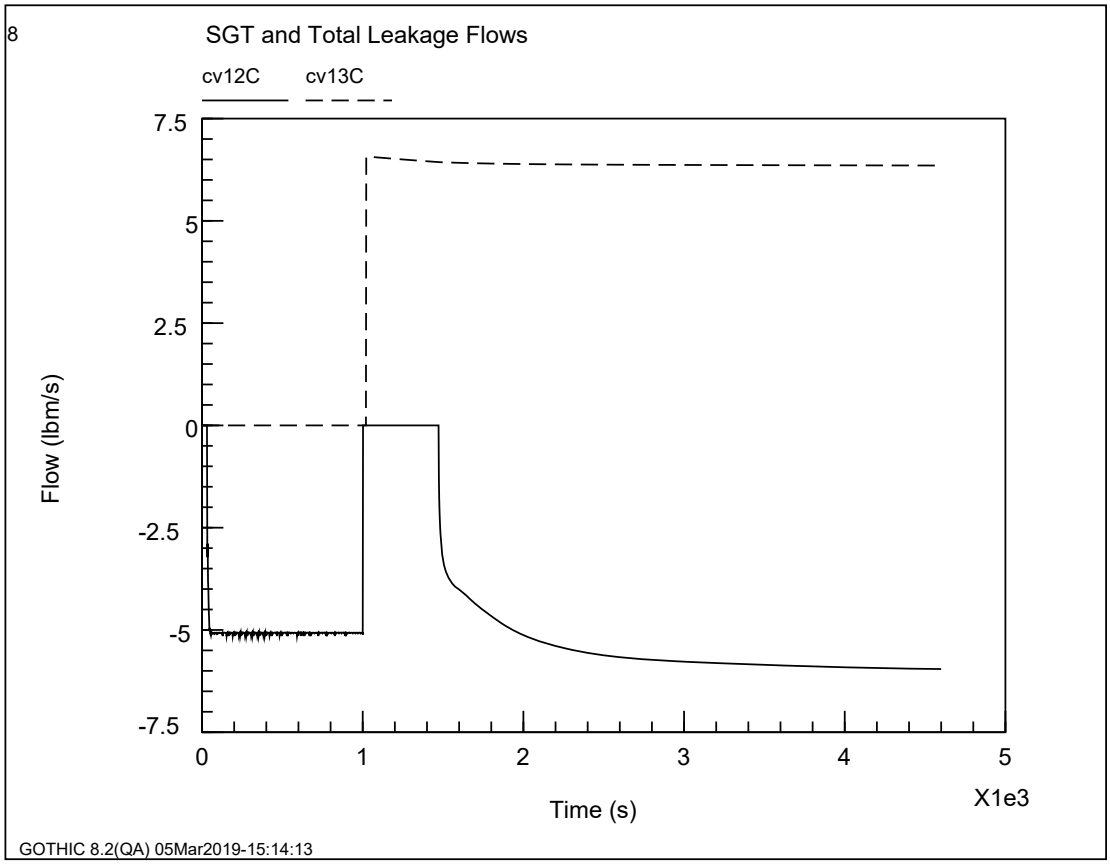

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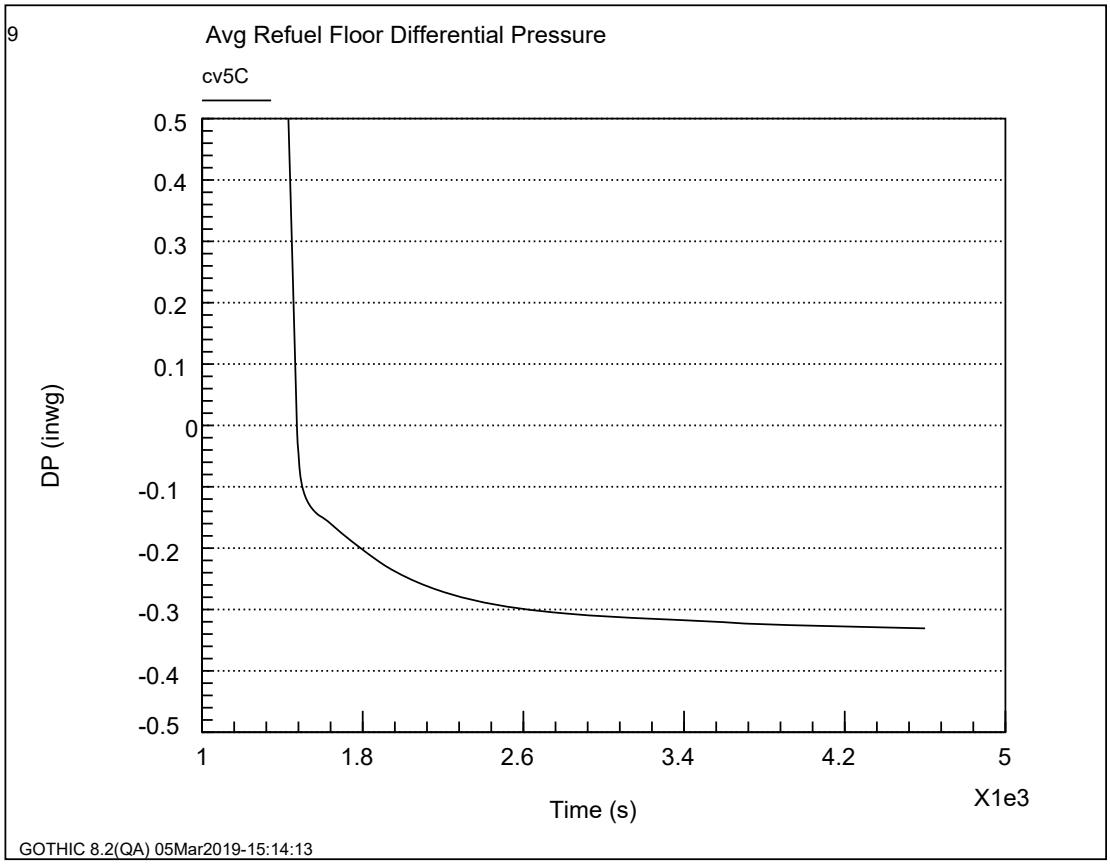

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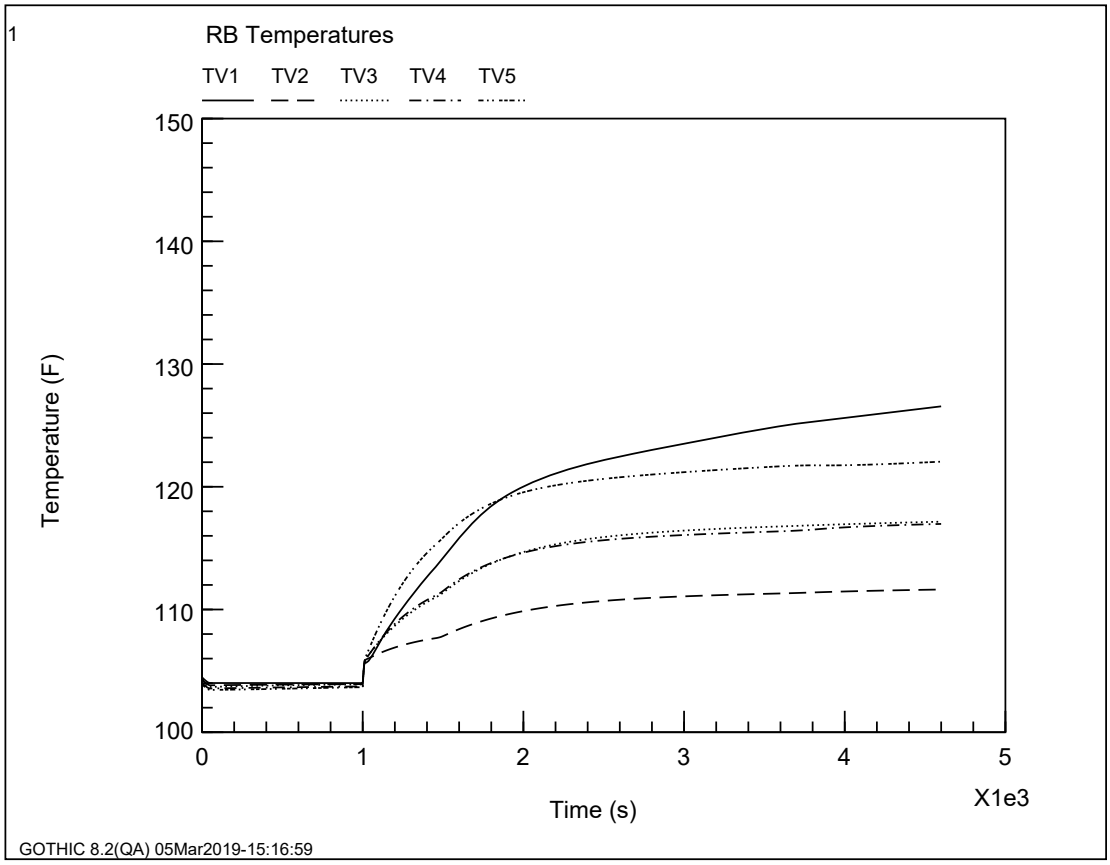

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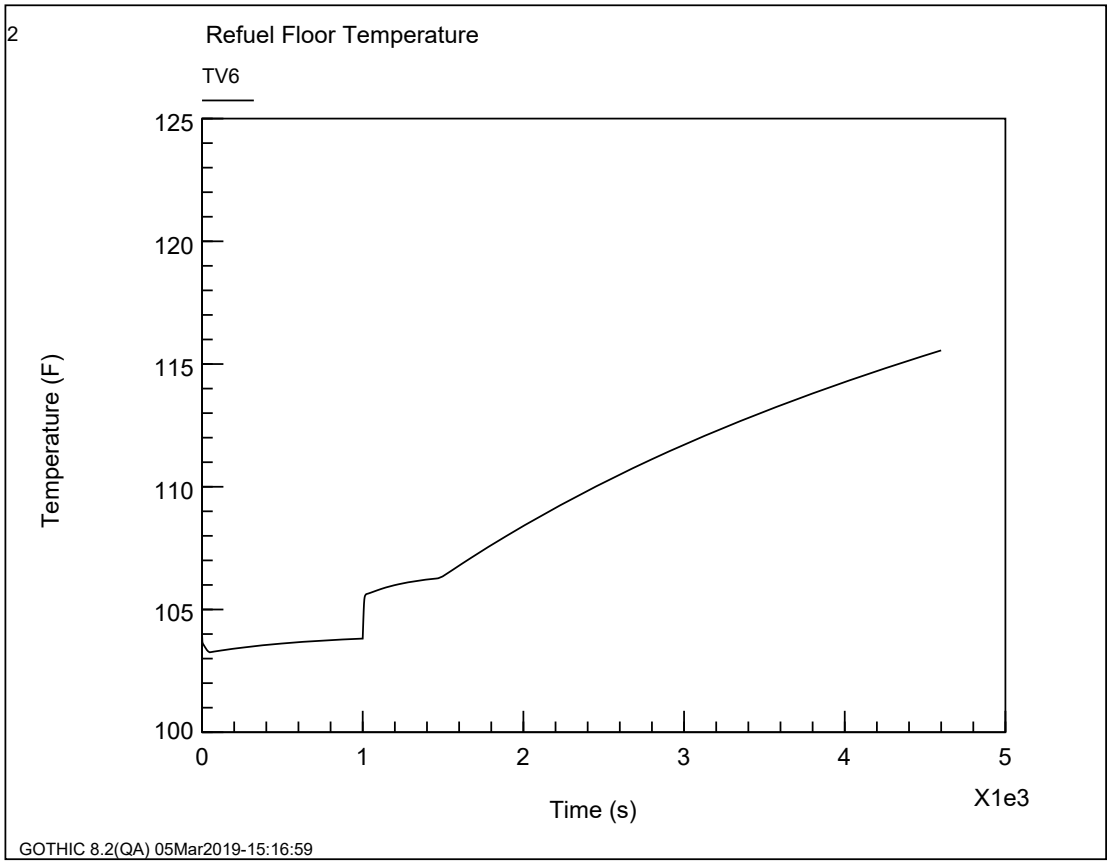

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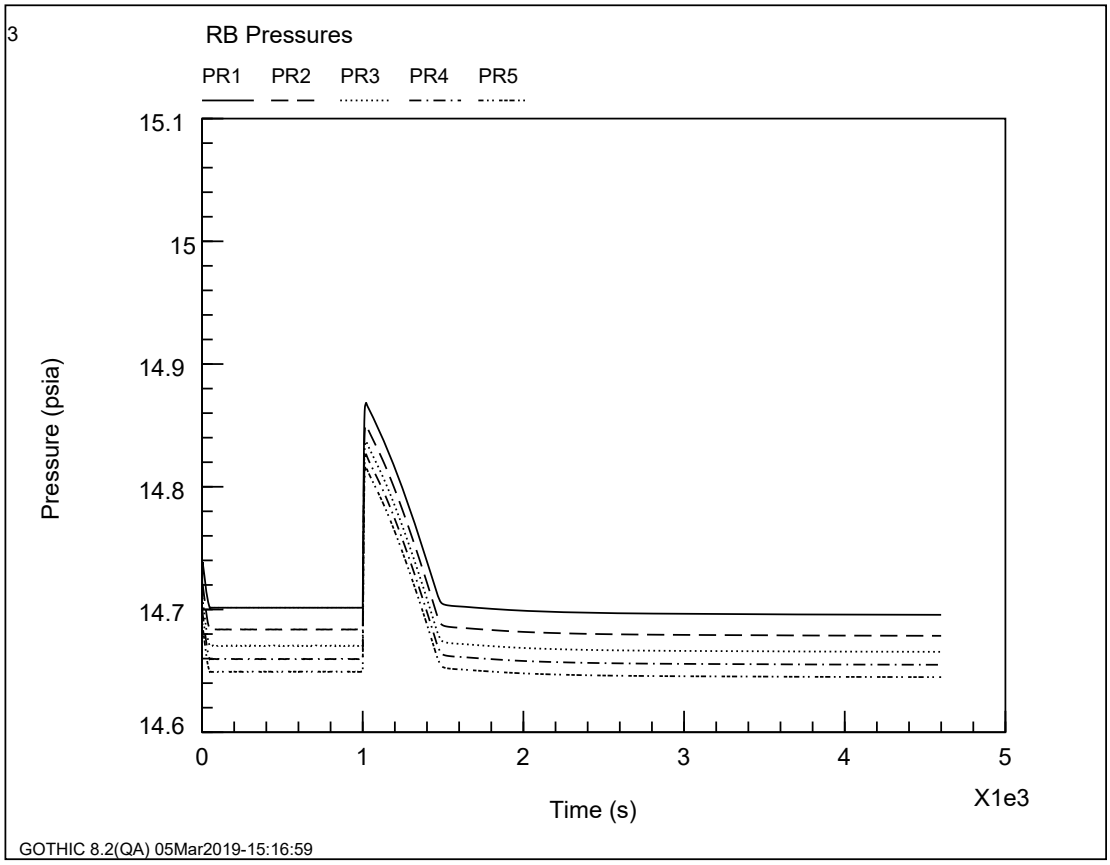

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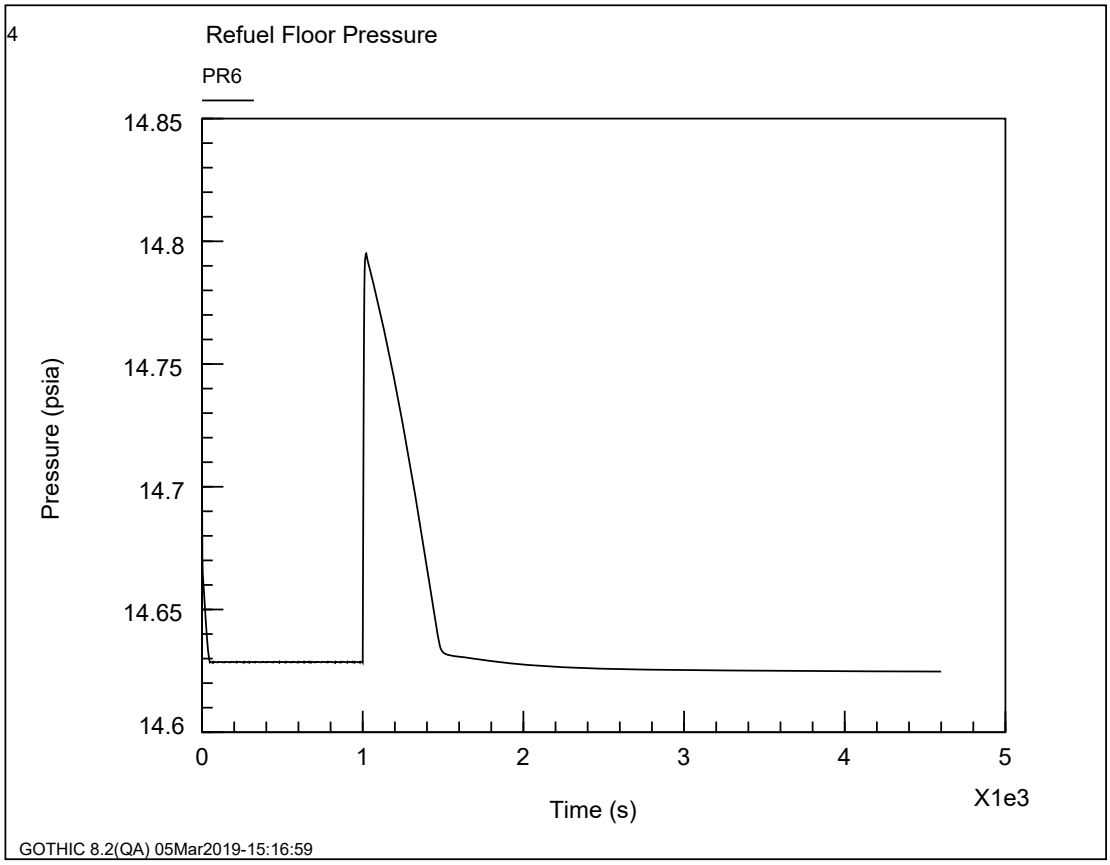

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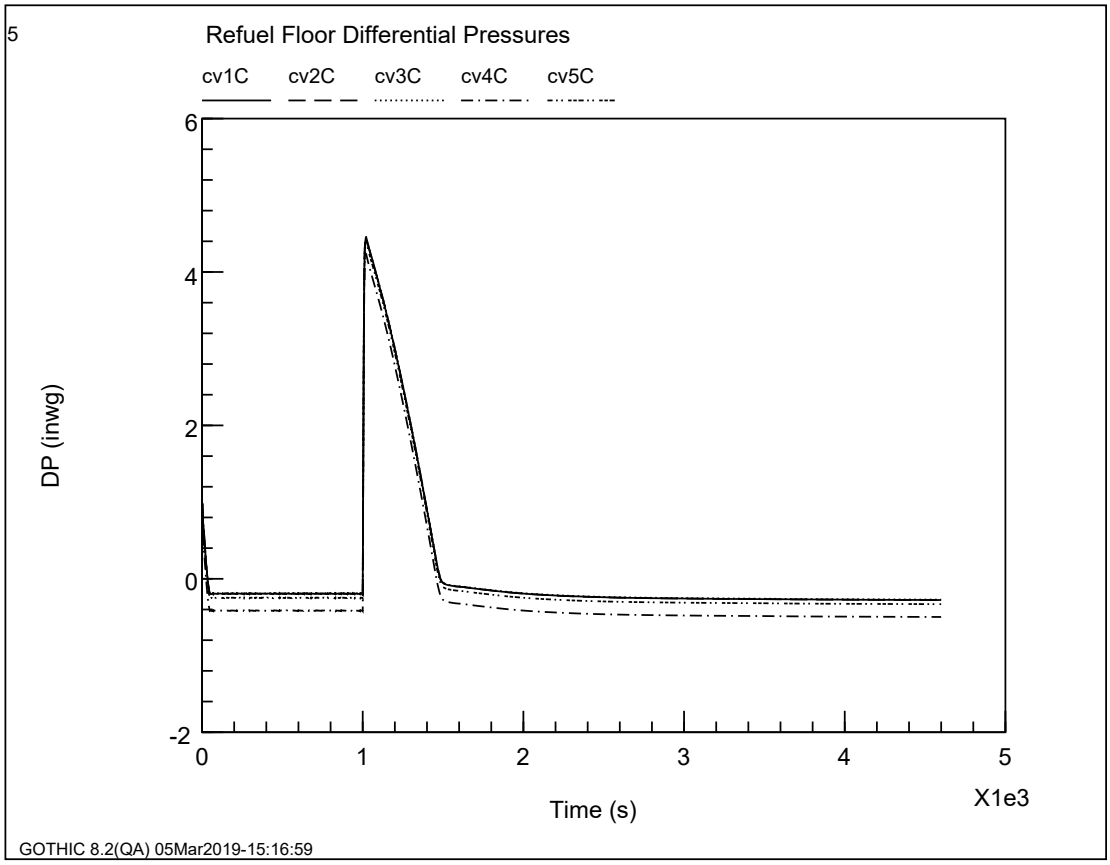

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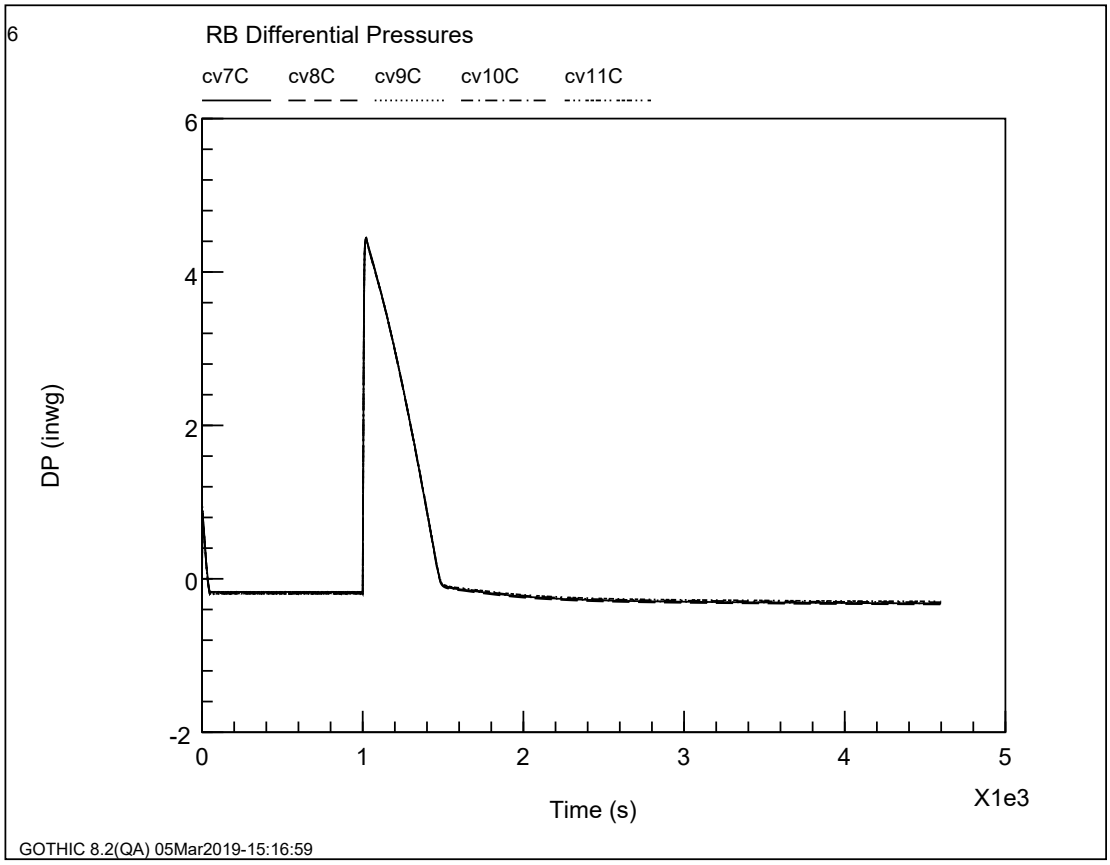

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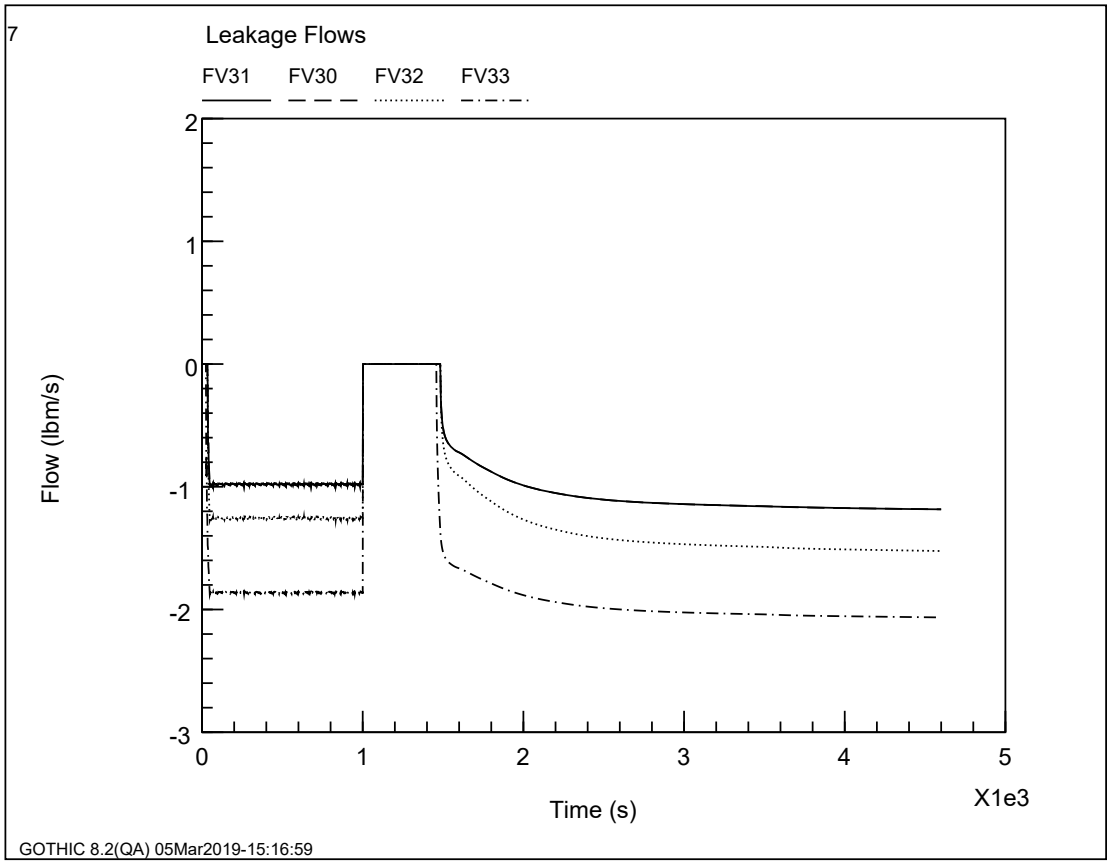

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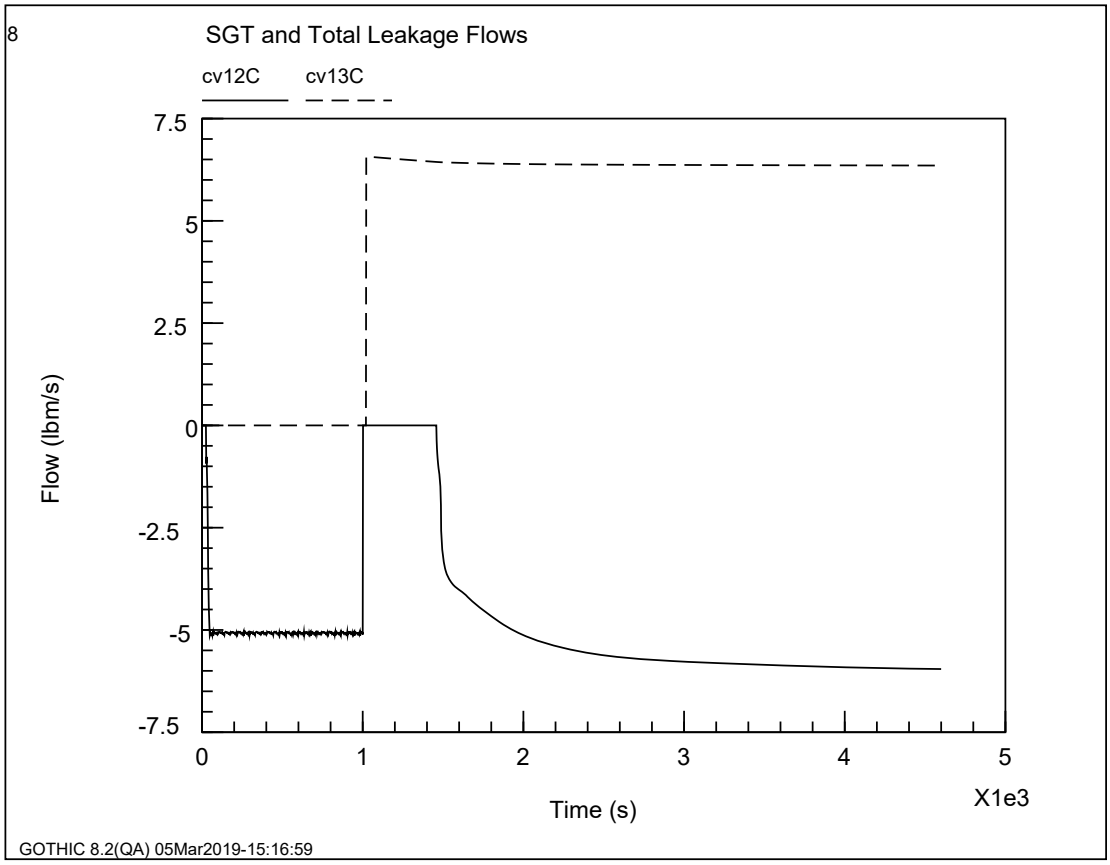

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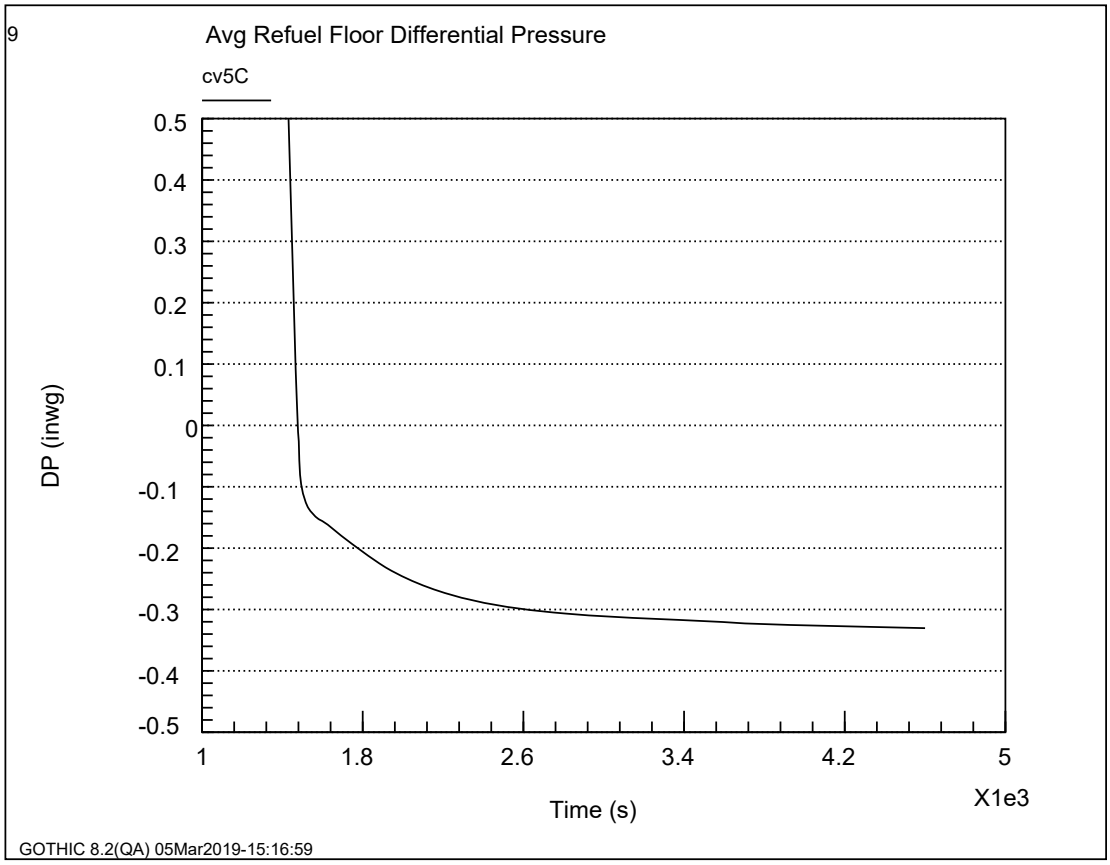

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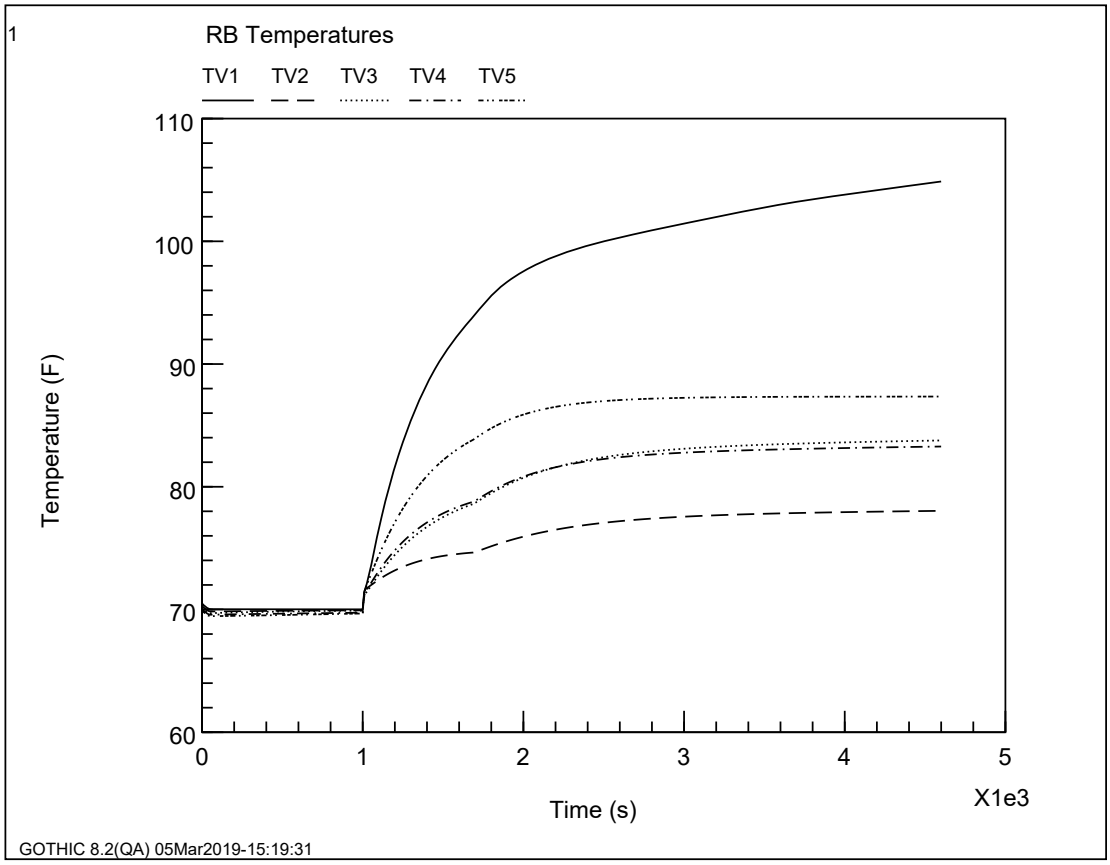

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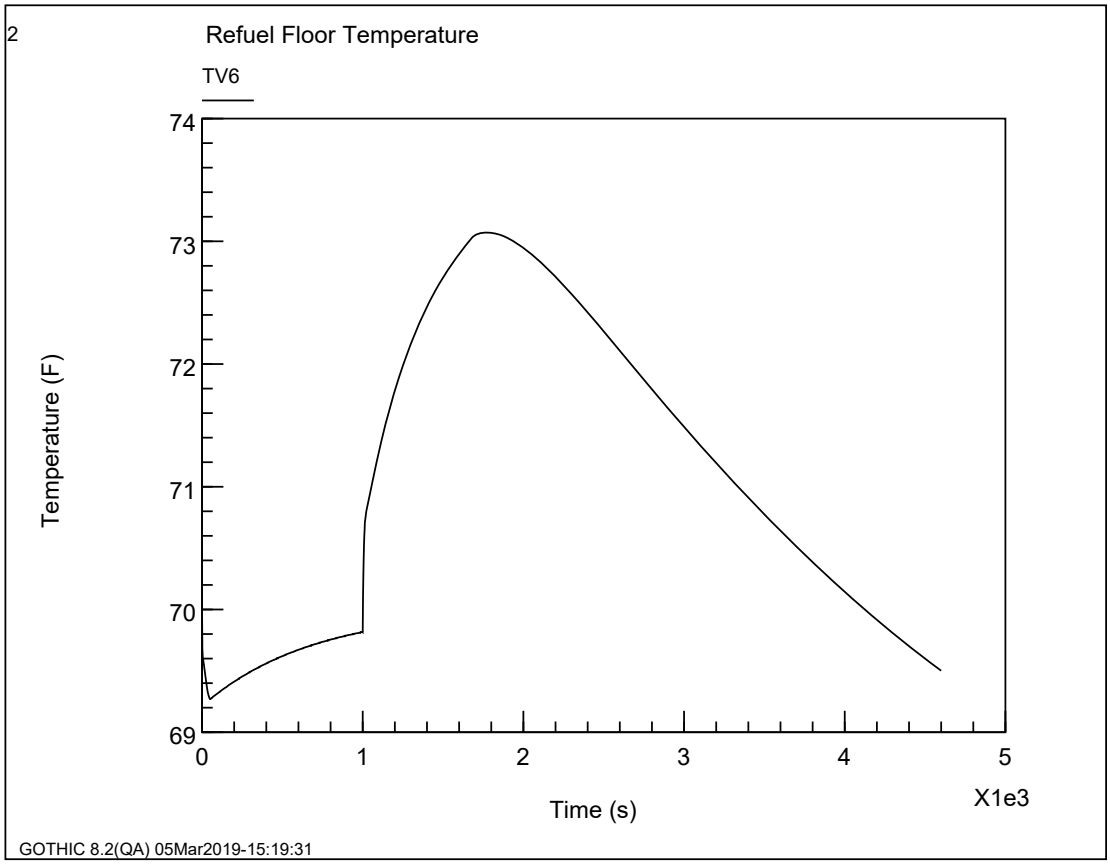

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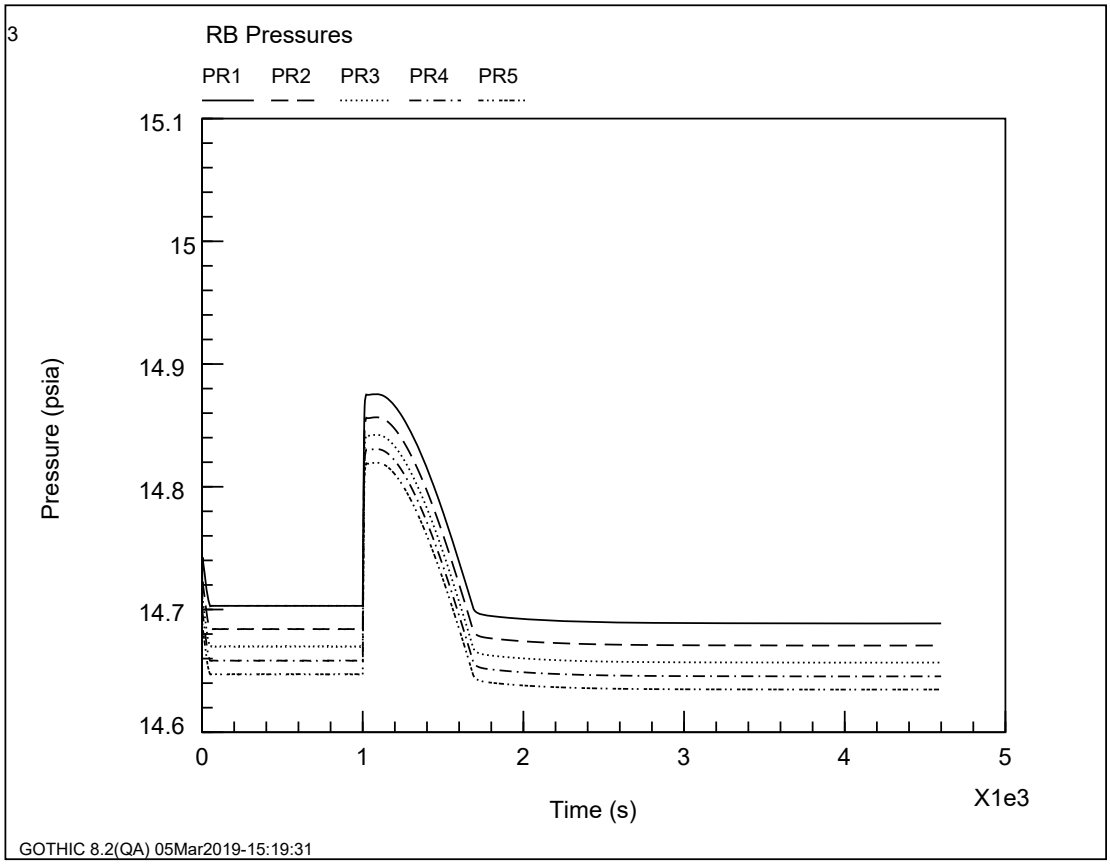

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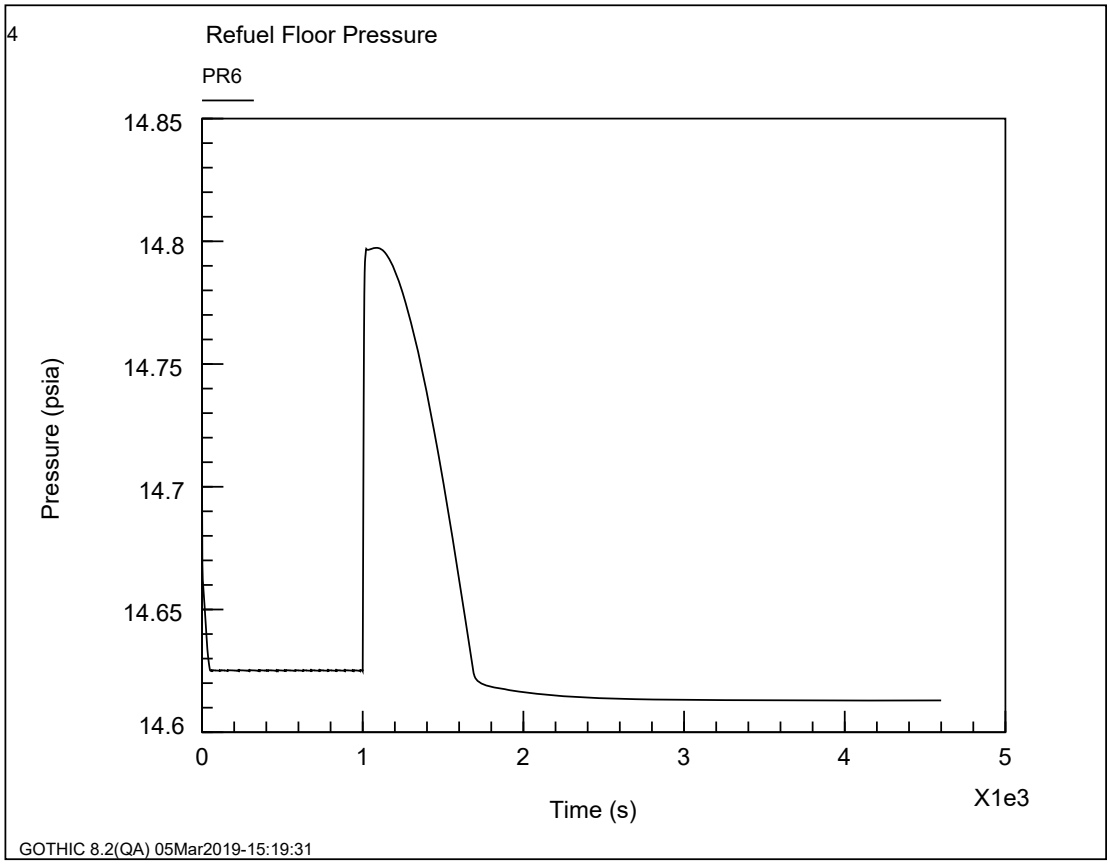

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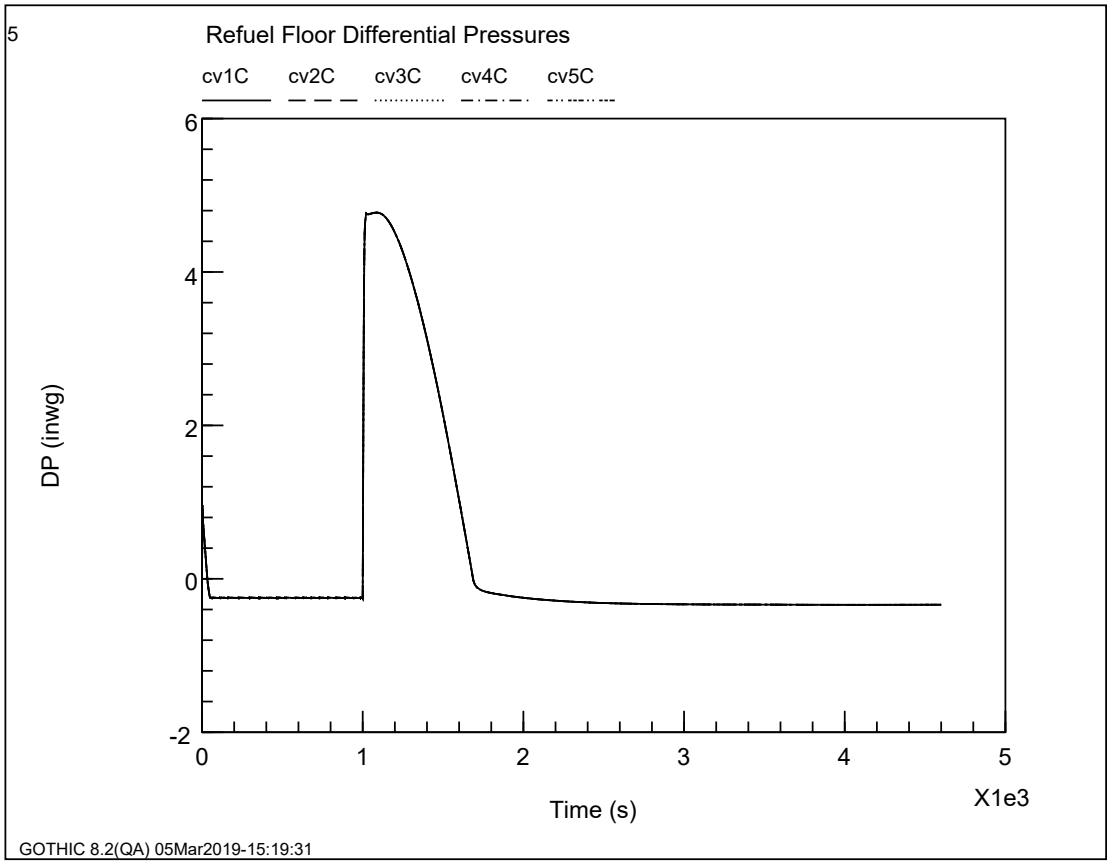

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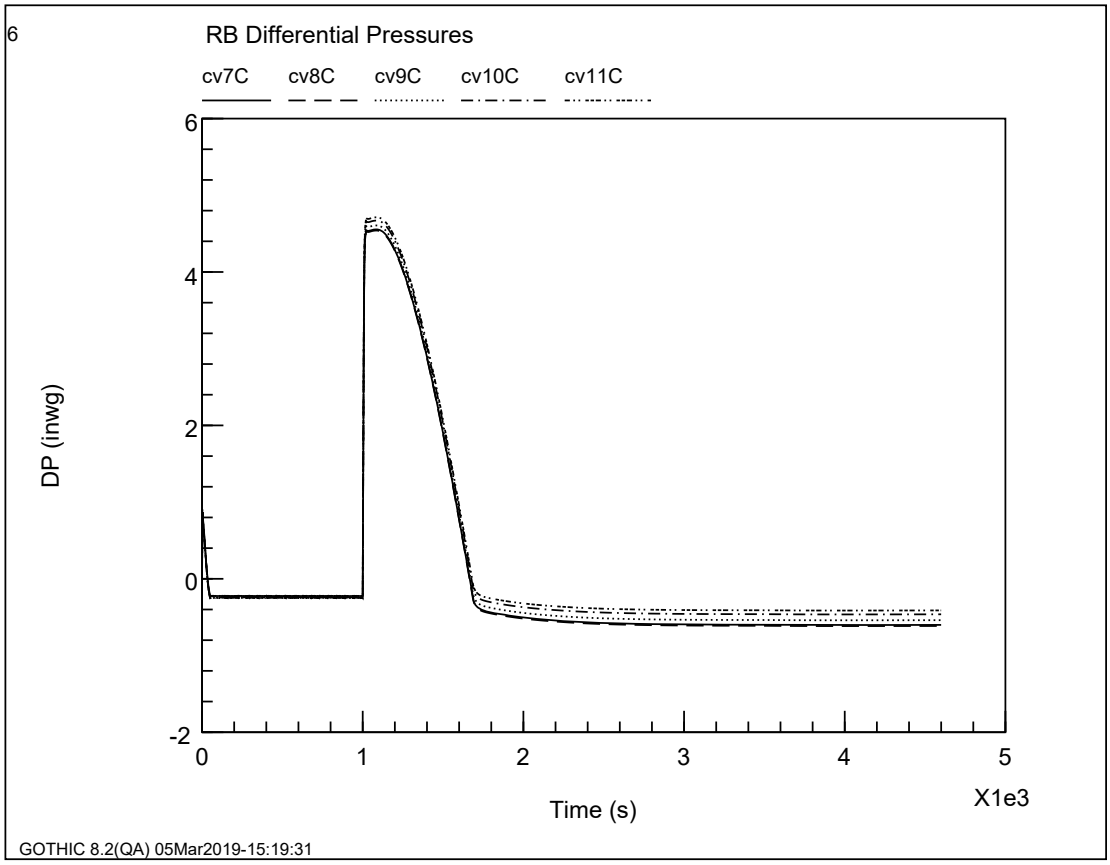

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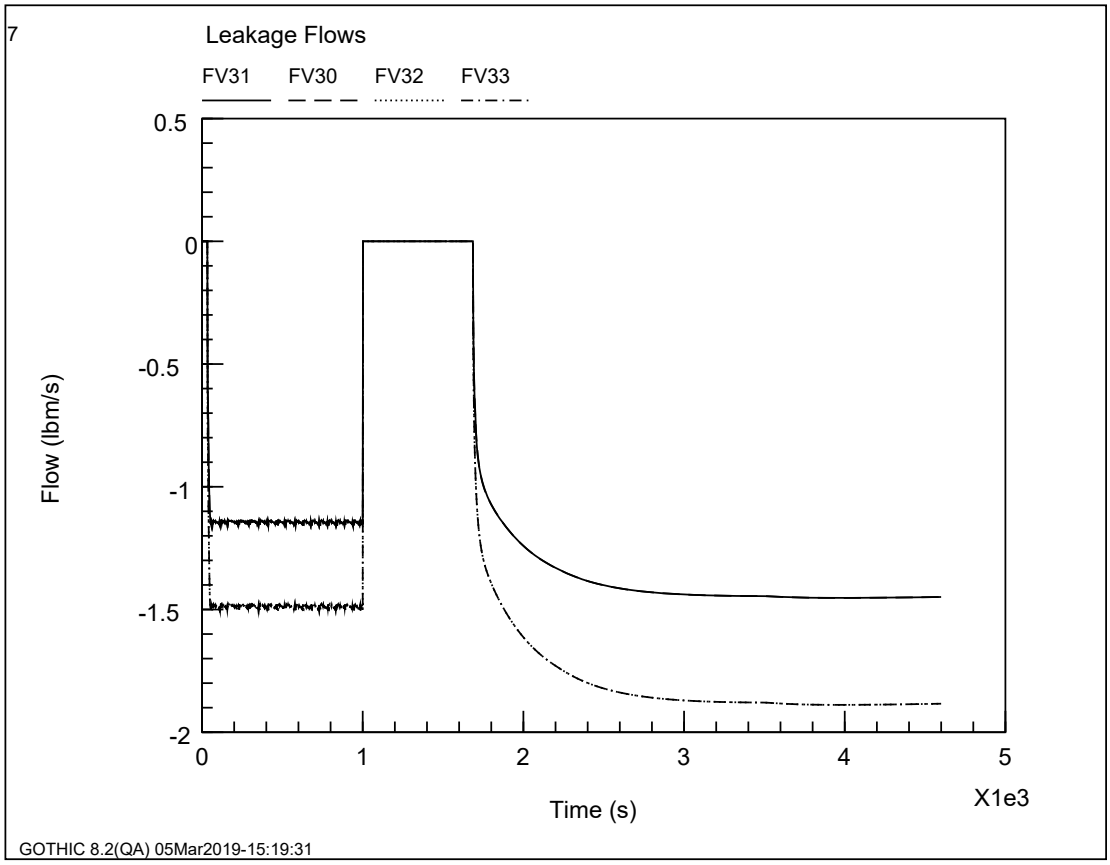

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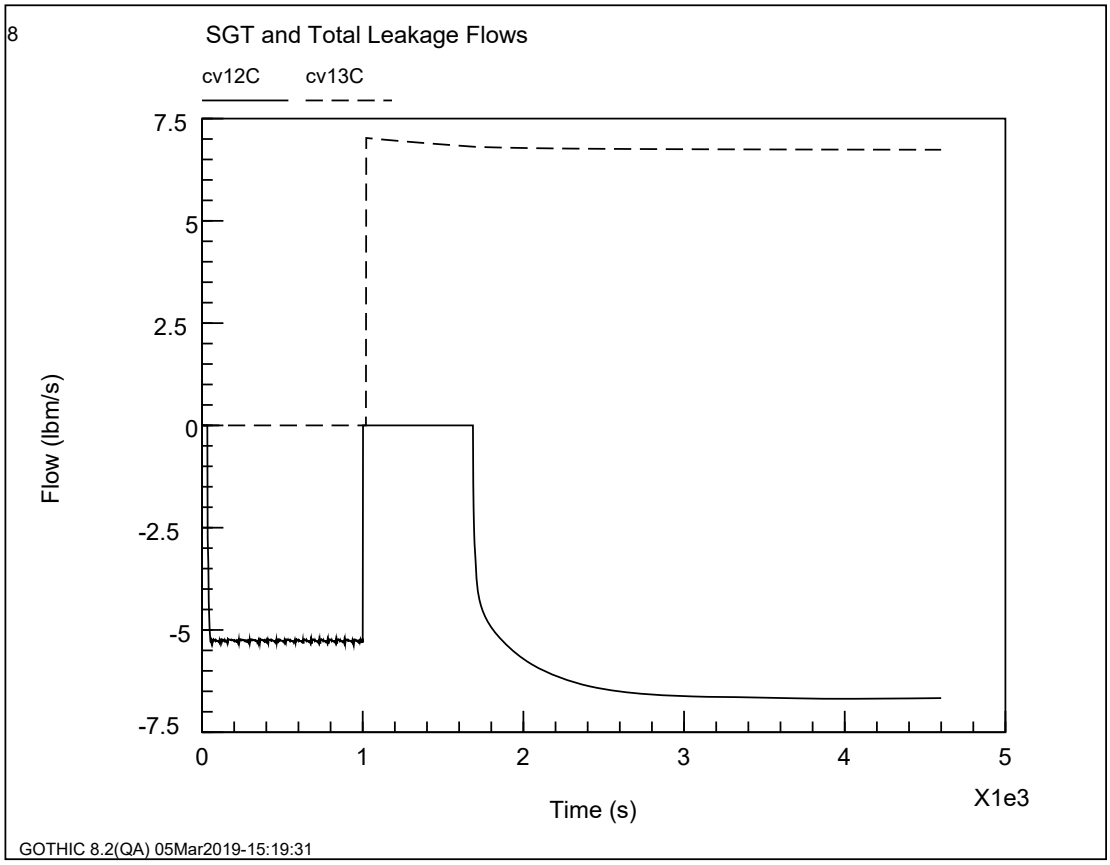

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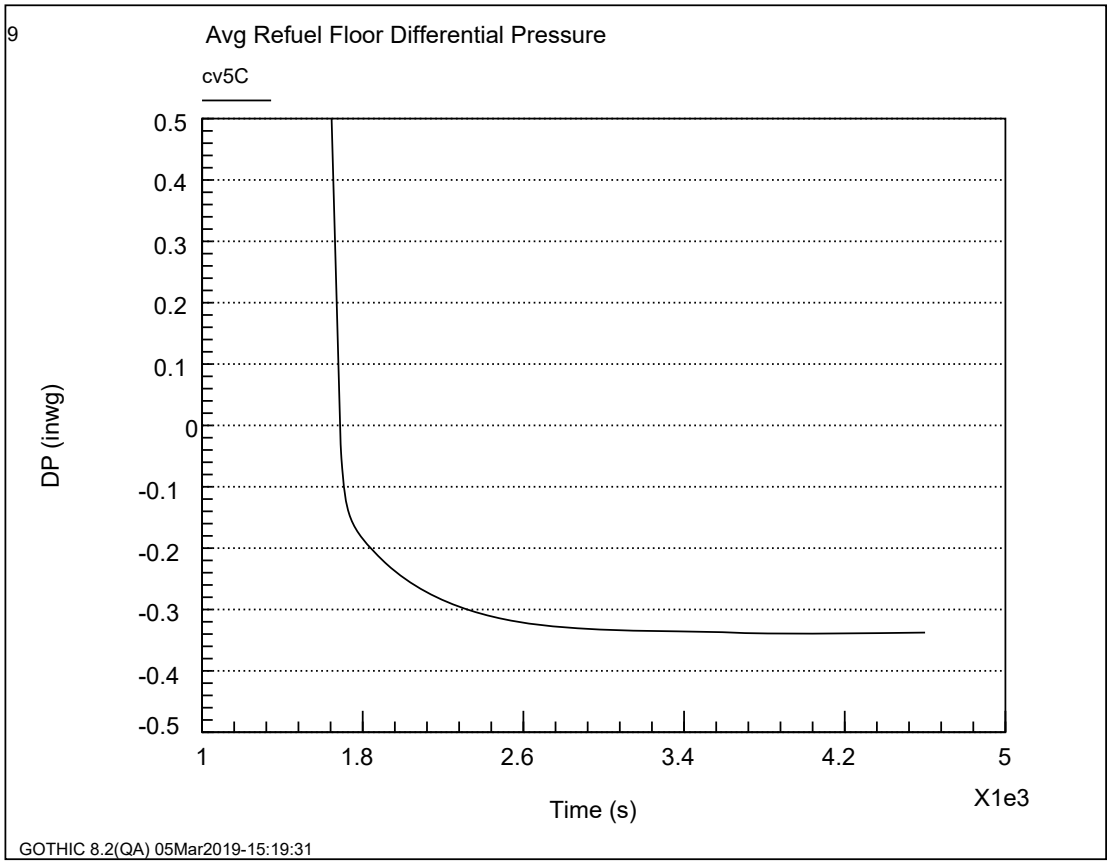

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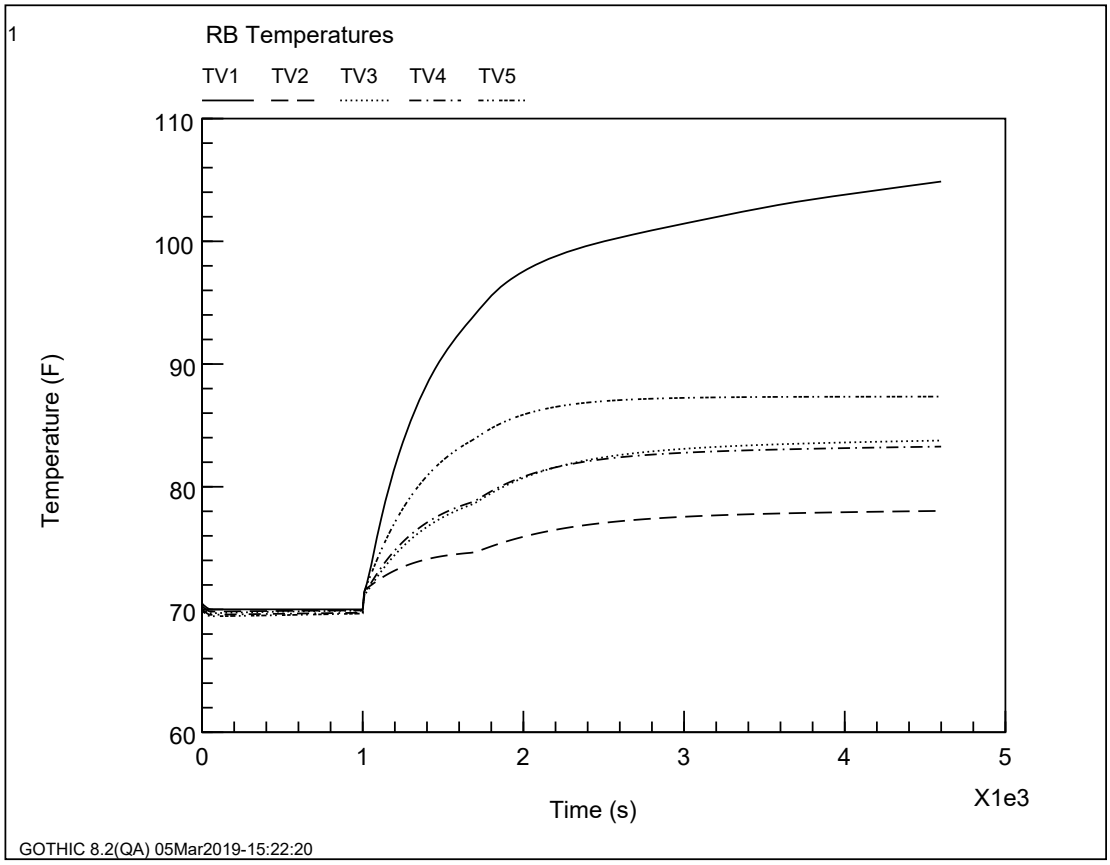

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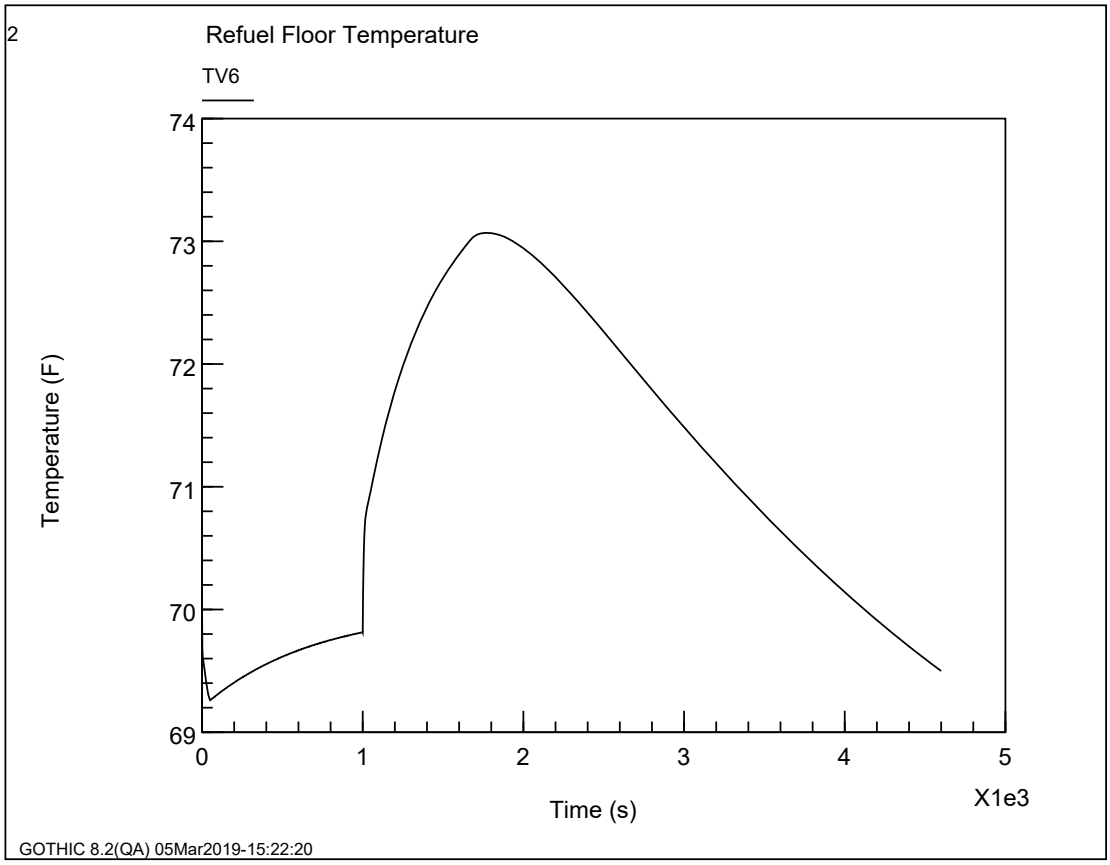

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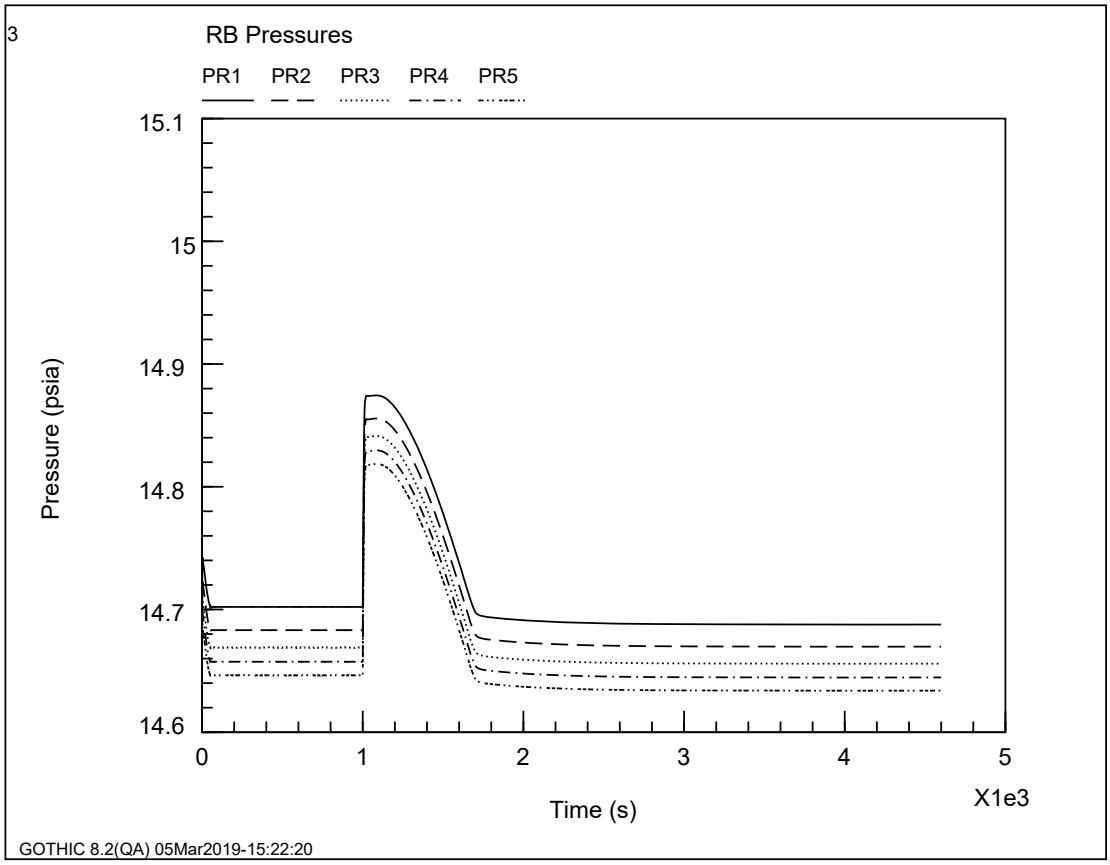

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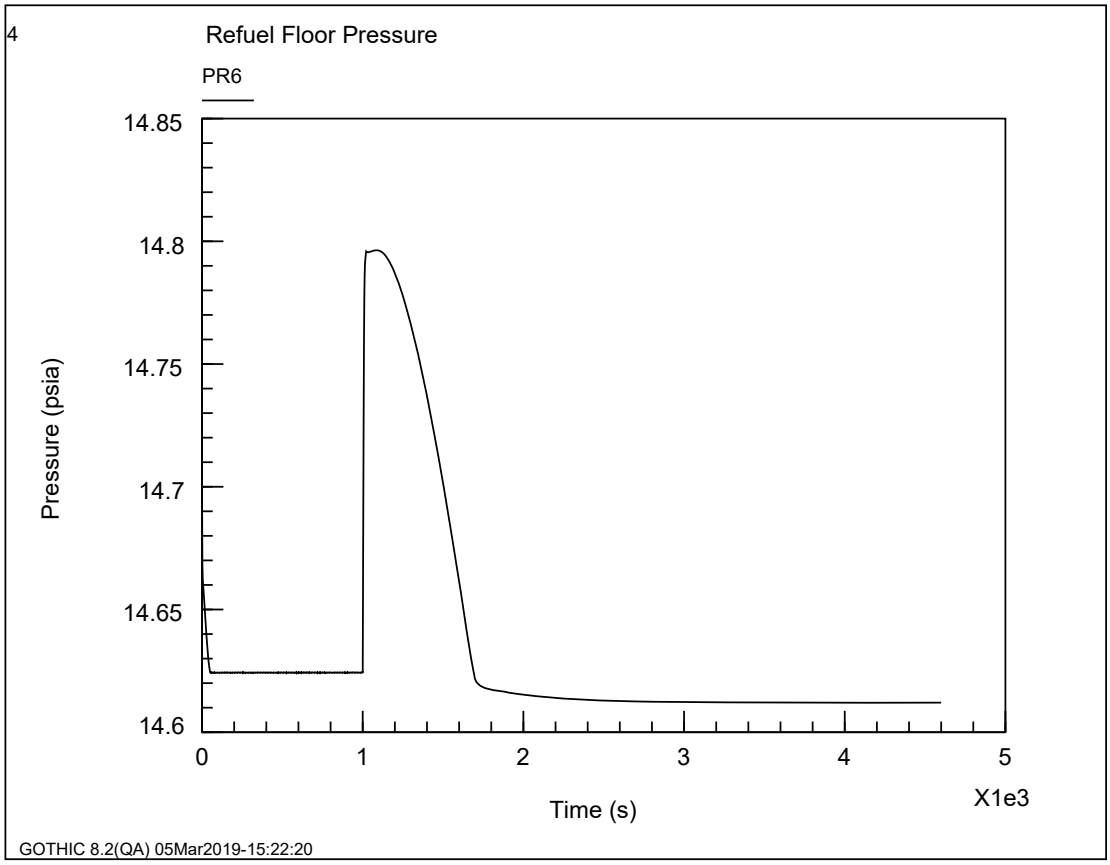

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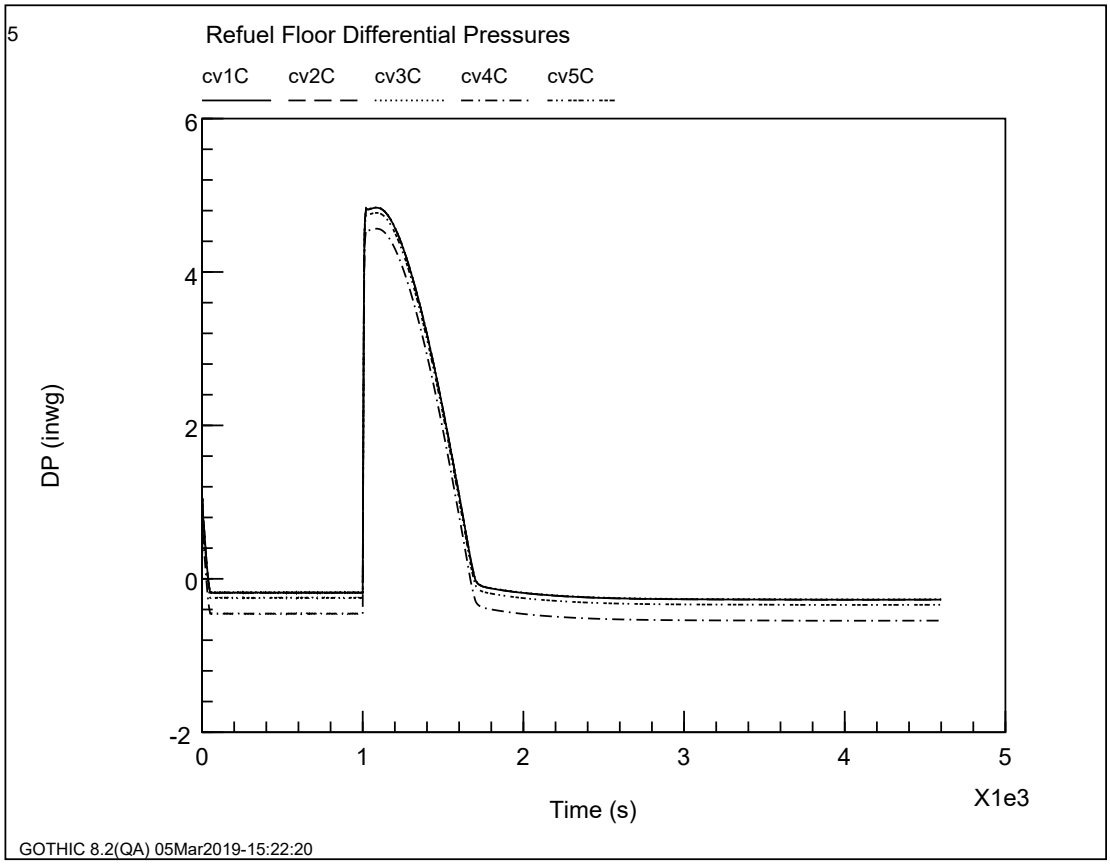

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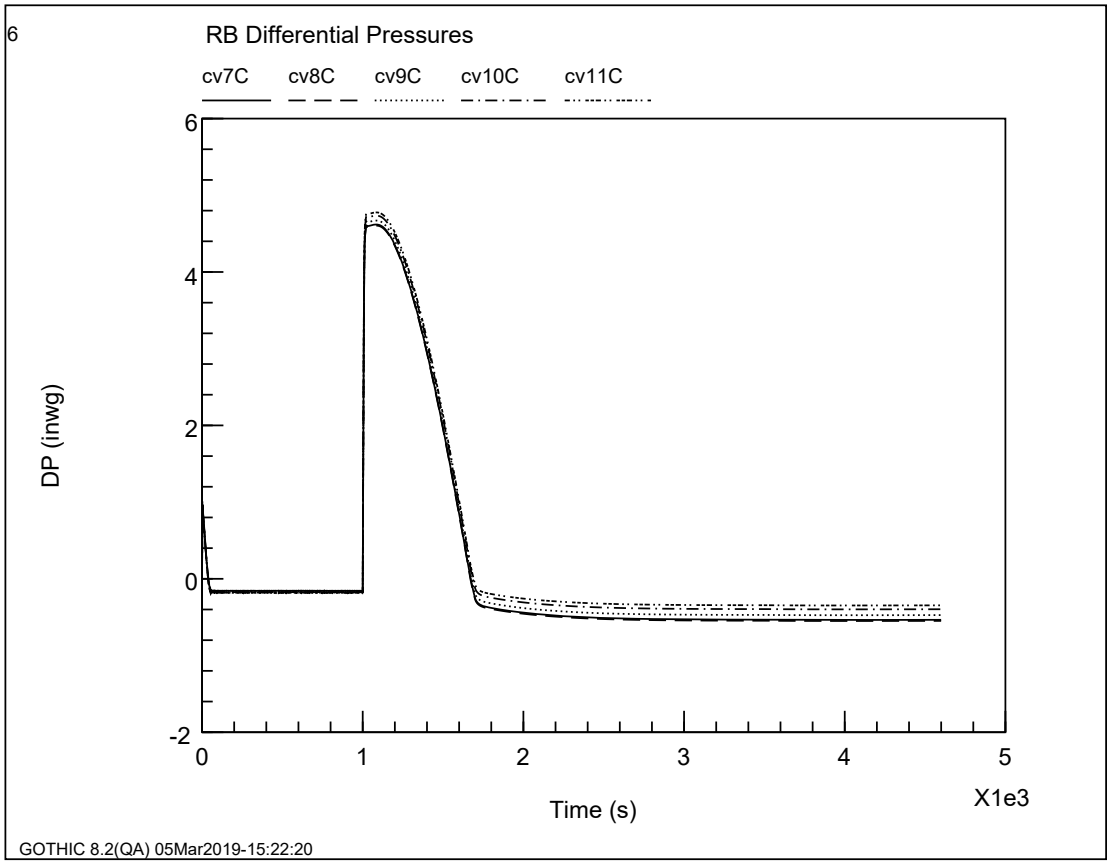

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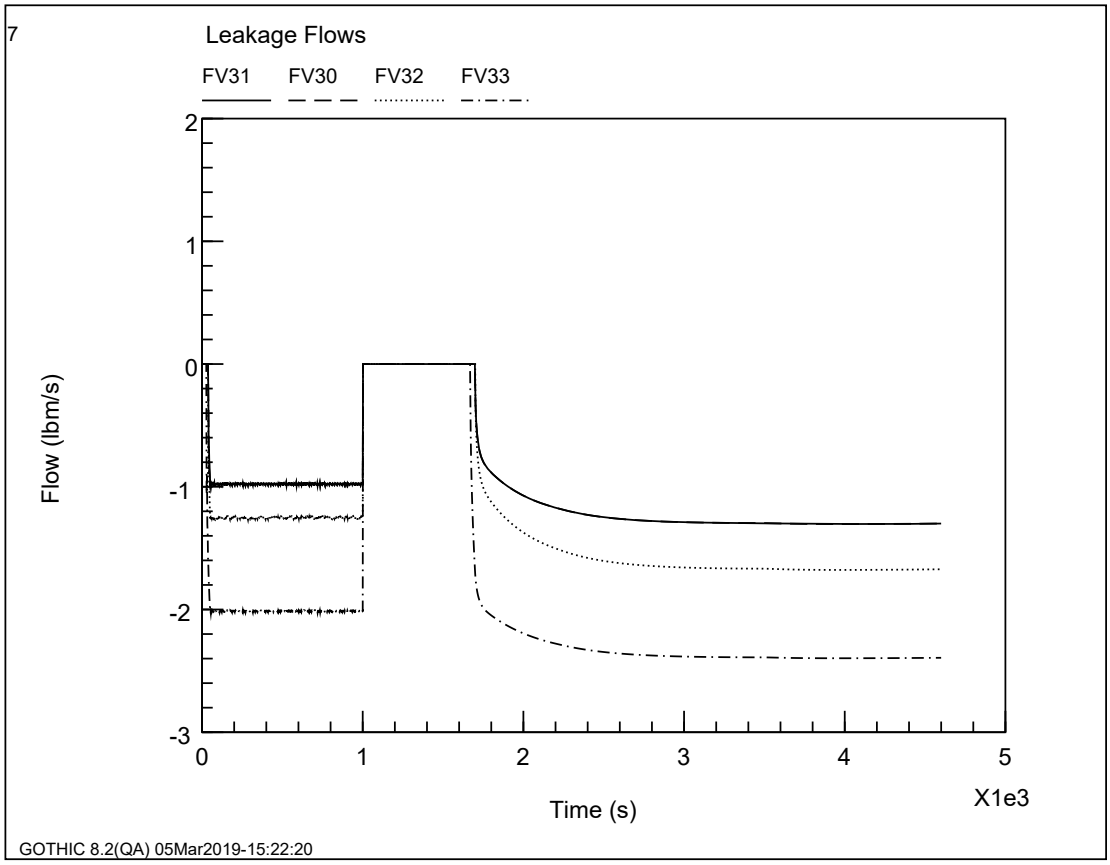

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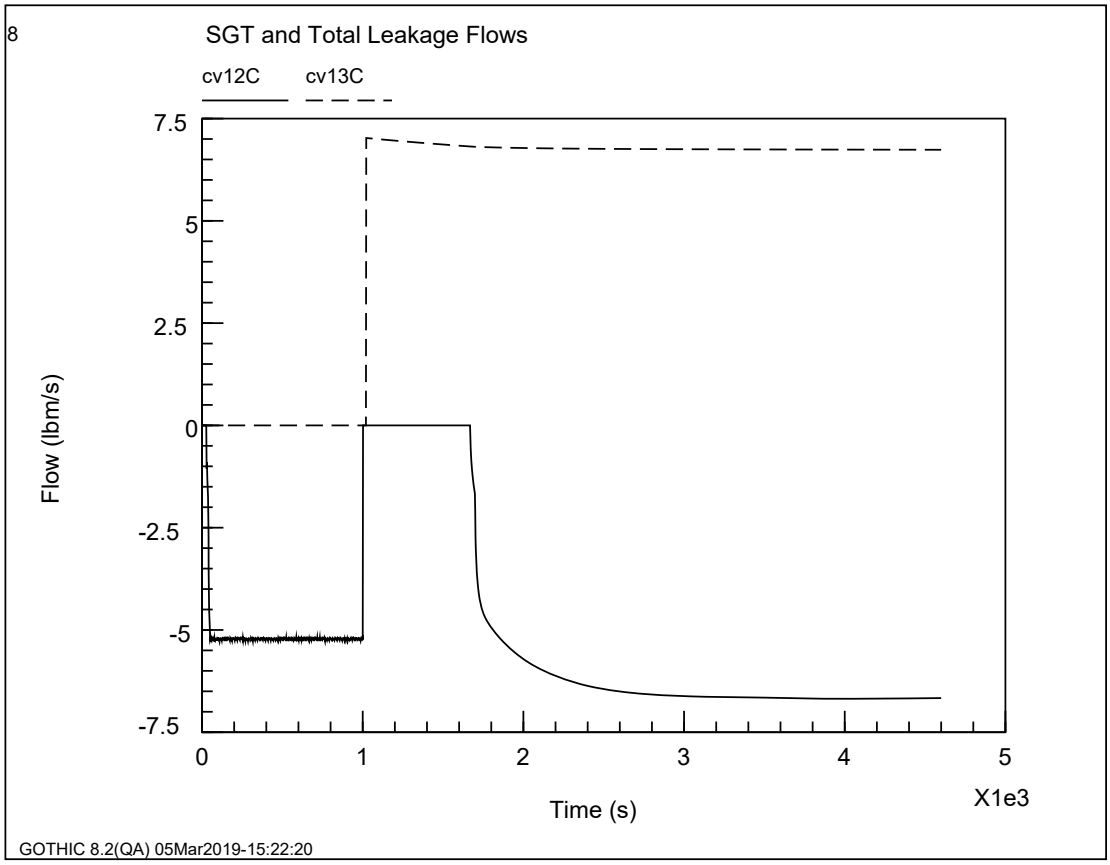

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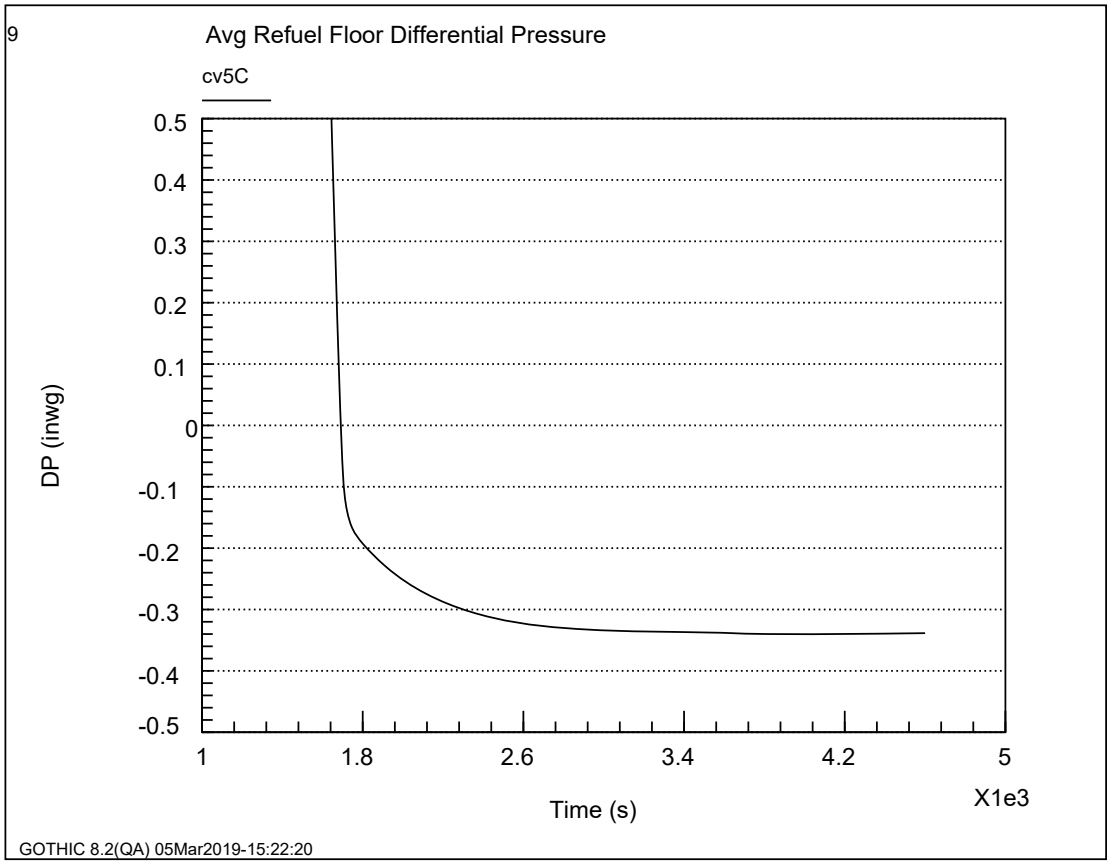

James A. FitzPatrick
Transmittal of Design Information

[X] Safety-Related [ ] Non-Safety-Related [ ] Augmented Quality	Transmittal of Design Information James A. FitzPatrick Unit(s): 1	DOC ID# TODI-JAF-EC626767-01 Page 1 of 4

To: Curtis Warchol

Organization: ENERCON Services, Inc.

Subject: JAF Secondary Containment Drawdown Analysis

Status of Information: [X] Verified [ ] Unverified

For Unverified TODIs include the Method and Schedule of Verification in the "Description of Information." List Action Tracking # assigned for verification of "Unverified" information:

Description of Information:

Input Parameters for JAF Secondary Containment Drawdown Analysis.

Limitations: None

References: Per attached table

Prepared by: Katherine Leaveck Date: 2/7/19
Printed Name/ Signature

Approved by: Guy Foster Date: 2/13/19
Printed Name/ Signature

Input Parameters for JAF Secondary Containment Drawdown Analysis

Item #	Parameter Description	Value	Reference/Comment
1	Drywell Temperature (LOCA)	Table 5-8 and Figure 5-2 of GE-NE-T23-00737-1	Table 5-8 of GE-NE-T23-00737-1 gives bounding DW temperature envelope which bounds DW temperature response for a DBA-LOCA from Figure 5-2.
2	Suppression Pool Temperature (LOCA)	Table 5-9 and Figure 5-3 of GE-NE-T23-00737-1	GE-NE-T23-00737-1
3	Spent Fuel Pool Temperature (LOCA)	≤ 125 F	125 F max SFP temperature after partial core offload per UFSAR 9.4.3. No SFP temperature increase after LOCA based on 12966-PE(N)-025-1.
4	RB Crescent Area and Torus Heat Loads (LOCA)	Crescent and Torus Area heat loads for lake temperature of 85 °F and uprated power. 628,800 BTU/hr for each crescent to maintain 110 °F.	JAF-CALC-SWS-02174.
5	RB Heat Loads for Above Grade Elevations (LOCA)	See Calculation 66-4 and 66-5	Note: Calculation 66-4 and 66-5 provide RB equipment heat loads during normal operation but many of these would not be operating post-LOCA.
6	RB Room Cooler Heat Removal Capacity after LOCA	The total required heat removal capability for the crescent area coolers in each crescent is 628,000 BTU/hr.	JAF-CALC-SWS-02174. Note: This is the heat removal capability required to maintain a 110 F crescent area temperature with 85 F UHS temperature under power uprate conditions.
7	Location and number of RB Differential Pressure Sensors	There are pressure sensors located outside each of the four RB walls on the 369' elevation that measure the average RB differential pressure with 01-125DPT-100A or 01-125DPT-100B.	JAF Plant Equipment Database FM-48A ST-39D

			Note: See ST-39D for info on pressure measurements for demonstrating this TS surveillance. See JAF-CALC-SC-03092 for variables and methodology.
8	RB/SC In-Leakage	In-leakage value should be based on two openings in series, each of which acting independently limits leakage to 6000 cfm at 0.25 in. H_2O differential pressure.	JAF Technical Specifications SR 3.6.4.1.4
9	RB/SC In-Leakage Locations	Assumed to be distributed on all four walls of building in proportion to wall length. No leakage assumed from roof.	UFSAR 5.3.4 item c
10	Wind Speed	ASHRAE manual gives a value of 20 mph for Syracuse.	Wind speed that is only exceeded 5% of the time.
11	SGTS Capacity	6000 cfm design flow	UFSAR 5.3.3.4 TS SR 3.6.4.1.4
12	SGTS Flow Control Method	SGT flow set at 5600-5800 cfm during surveillance testing by throttling manual SGT suction valve.	Flow rate adjustments are performed during ST-39D "Secondary Containment Leak Test".
13	SGTS Pressure Loss at Design Flow	8.202 inwg at 6000 cfm	01-125-2
14	SGTS Fan Performance	10 inwg static pressure at 6000 cfm design flow	100.00-209 Note: See reference 44347-71N-11958 for fan static pressure at other flow rates.
15	SGTS Suction Location(s) for LOCA conditions	1200 cfm from elevations 262', 280'-6", 307', 334' and 351'6" and 5000-10000 cfm from elevation 369'-6".	FM-48A OP-20 DBD-027
16	SGTS Delay time to load onto DG after LOCA/LOOP	11 seconds to close DG breakers per UFSAR Table 8.6-1	UFSAR Table 8.6-1

			Note: L15 supplying SGTS equipment is energized when the diesels load. FSAR uses 11 seconds as worst case. Loading calculation JAF-CALC-ELEC-02609 uses 7.2 seconds.
17	Delay time to start Secondary SGTS if Primary SGTS fails	N/A	Note: Both SGTS trains would start after a LOCA with no time delay other than that to load SGTS onto DG bus.
18	SGTS Isolation Valve Opening Time (Max)	9.5 seconds	ST-7E, ST-7F Note: This is the opening time after the SGTS is loaded onto the DG bus.
19	Time Delay to Trip RB Ventilation Fans and Start Isolation Valve Closure after LOCA	None. The isolation valves would close and exhaust fans 66-FN-13A/B automatically shut down on isolation signal. The supply fans and remaining exhaust fans would keep running in recirc mode after a LOCA.	JAF-CALC-RBC-03042 FE-1S JAF-CALC-ELEC-02609

DRAWDOWN TEST CASE

1. PURPOSE

The purpose of this attachment is to determine the Reactor Building (RB) pressure response following a RB isolation during normal operation at JAF and the resulting drawdown time for test conditions.

2. INPUTS

The inputs used in this attachment are the same as those from Section 2 in the body of the calculation.

3. ASSUMPTIONS

The following are the assumptions from the body of the calculation which are modified for the test case to minimize the drawdown time calculated for test conditions during normal operation:

1. The outside air temperature, initial RB temperature and wind speed are equal to the conditions for LOCA Case 4 since these result in the shortest LOCA drawdown time, i.e. -10 ^{o}F outside air temperature, 70 ^{o}F initial RB temperature and a 20 mph wind.

2. Normal operating heat loads are assumed for all areas in the Reactor Building, including the crescent and torus areas on the 227’ elevation and the RHR heat exchanger rooms on the 272’ elevation. The effect of heat gain from the outside to the 369’ elevation refueling floor will be neglected for the test case.

3. No credit is assumed for crescent area cooler heat removal since the ECCS pumps would not be operating during normal operation, which is consistent with the normal operation heat loads assumed above.

4. No single failures are assumed but it is assumed that only one SGT fan would be operating during the drawdown test.

5. The SGT fan starts and SGT valves begin to open immediately after RB ventilation system isolation occurs since there is no time delay to load the SGT system onto the DG bus since no LOOP is assumed for the test case. No delay in providing SGT flow during opening of the SGT isolation valves is also assumed for the test case.

6. Credit is assumed for secondary containment out-leakage during periods of positive RB pressurization since this will reduce the RB pressurization and result in a shorter drawdown time.

7. The SP temperature is assumed to remain constant at 70 ^{o}F. This SP temperature is consistent with the 70 F initial RB temperature and the winter conditions assumed above.

8. Evaporation from the SFP for the test case will be calculated based on an assumed SFP temperature of 100 ^{o}F and a RB relative humidity (RH) of 50%. The SFP temperature during normal operation would typically be lower than the 125 ^{o}F assumed for LOCA conditions and the RB relative humidity greater than the 0% RH used to calculate the LOCA evaporation rate, resulting in a lower SFP evaporation rate and shorter drawdown time. A 50% RH on the refueling floor is also reasonable based on an overall RB initial humidity of 20% since the refueling floor humidity would be higher due to SFP evaporation.

4. REFERENCES

The references are the same as those used in the body of the calculation.

5. METHOD OF ANALYSIS

The Case 4 GOTHIC model for LOCA conditions was modified for the assumptions from Section 3 of this attachment for the assumed test conditions during normal operation. The following sections describe the changes made for the test case model and the changes made to the GOTHIC model are shown in Appendix F2.

Flow Paths

The forward loss coefficients of the RB leakage flow paths (FP# 30-33) are set equal to the assumed loss coefficient of 5.7 used for the reverse loss coefficient to allow out-leakage during periods of positive RB pressurization. (Assumption 6)

Thermal Conductors

Conductor surface option 6 was modified to use a constant SP temperature of 95 ^{o}F instead of the function for the LOCA SP temperature profile. (Assumption 7)

RB Heat Loads

Table 4 from Attachment C was modified to calculate the RB heat loads during normal operation, which are shown in Table F1 of Appendix F1. The 227’ elevation heat load and RHR heat exchanger room heat load on the 272’ elevation were modified to use the normal heat load from Ref. 35 per Assumption 2. The heat gain from the walls and roof were removed from the 369’ refueling floor elevation heat load. The heat rate for GOTHIC heaters H1, H2 and H6 were modified to use the corresponding normal heat loads from Table 1 of Appendix F1. (Assumption 2)

RB Coolers

The heat removal rate for GOTHIC cooler 7C was set equal to zero to prevent heat removal by the crescent area coolers. (Assumption 3)

SGT

GOTHIC forcing function 1T was modified so that the SGT flow increases from zero to 5600 cfm immediately after RB isolation at 1000 seconds. (Assumption 5)

SFP Evaporation

Evaporation from the SFP for the test case will be calculated based on an assumed SFP temperature of 100 ^{o}F and a RB relative humidity (RH) of 50%. (Assumption 8) At these conditions, the SFP evaporation rate at the initial RB temperature of 70 ^{o}F is:

$$W_{SFP} = \frac{A}{h_{fg}}(P_w - P_a)(95 + 0.425V) = \frac{1240}{1036.67}(1.935 - 0.5 * 0.74)(95 + 0.425 * 0)$$
$$= 177.8\ lb/hr$$

Where:

W_{SFP} = SFP evaporation rate, lb/hr
A = SFP surface area = 31' x 40'= 1240 ft^2 (Ref. 28)
h_{fg} = latent heat of evaporation at SFP temperature
= 1036.67 BTU/lb at 100 ^{o}F (Table 3 Ref. 43 Chapter 6)
P_w = saturation vapor pressure at SFP temperature
= 1.935 inHg at 100 ^{o}F (Table 3 Ref. 43 Chapter 6)
P_a = saturation pressure at room air dew point
= 0.5*0.74 = 0.37 inHg at 70 ^{o}F with 50% RH (Table 3 Ref. 43 Chapter 6)
V = air velocity over water surface = 0 fpm assuming no forced air circulation

Multiplying the evaporation rate calculated above multiplied by an activity factor of 0.5 (Ref. 44 page 4.6) to account for the quiescent pool surface conditions and converting to lb/s gives a flow rate of 0.025 lb/s for the SFP flow boundary condition. (BC# 17F) The assumed SFP temperature of 100 ^{o}F and corresponding saturation pressure of 0.95 psia were also used for these boundary conditions in the test case.

6. RESULTS

The GOTHIC results for the test case are shown in Appendix F3. RB isolation occurs at 1000 seconds on each of these plots. Figure F1 below shows the average differential pressure on the refueling floor for the test case. The differential pressure increases rapidly from the initial RB pressure of -0.25 inwg and becomes positive. However, the positive RB pressure increase is less than that for Case 4 during LOCA conditions and again becomes negative after about 100 seconds. The RB pressure reaches -0.25 inwg at 564 seconds and continues to decrease, reaching a relatively constant value of about -0.37 inwg at 3600 seconds after RB isolation.

7. CONCLUSION

The differential pressure inside the JAF Reactor Building predicted by the GOTHIC model after RB isolation during normal operation, will be less than -0.25 inwg with respect to the outside air

pressure after a drawdown time of 564 seconds (9.4 minutes) under the assumed test conditions and with the assumed RB in-leakage.

8. APPENDICIES

F.1 Normal RB Heat Loads for Test Case

F.2 GOTHIC Input File Changes for Test Case

F.3 GOTHIC Results for Test Case

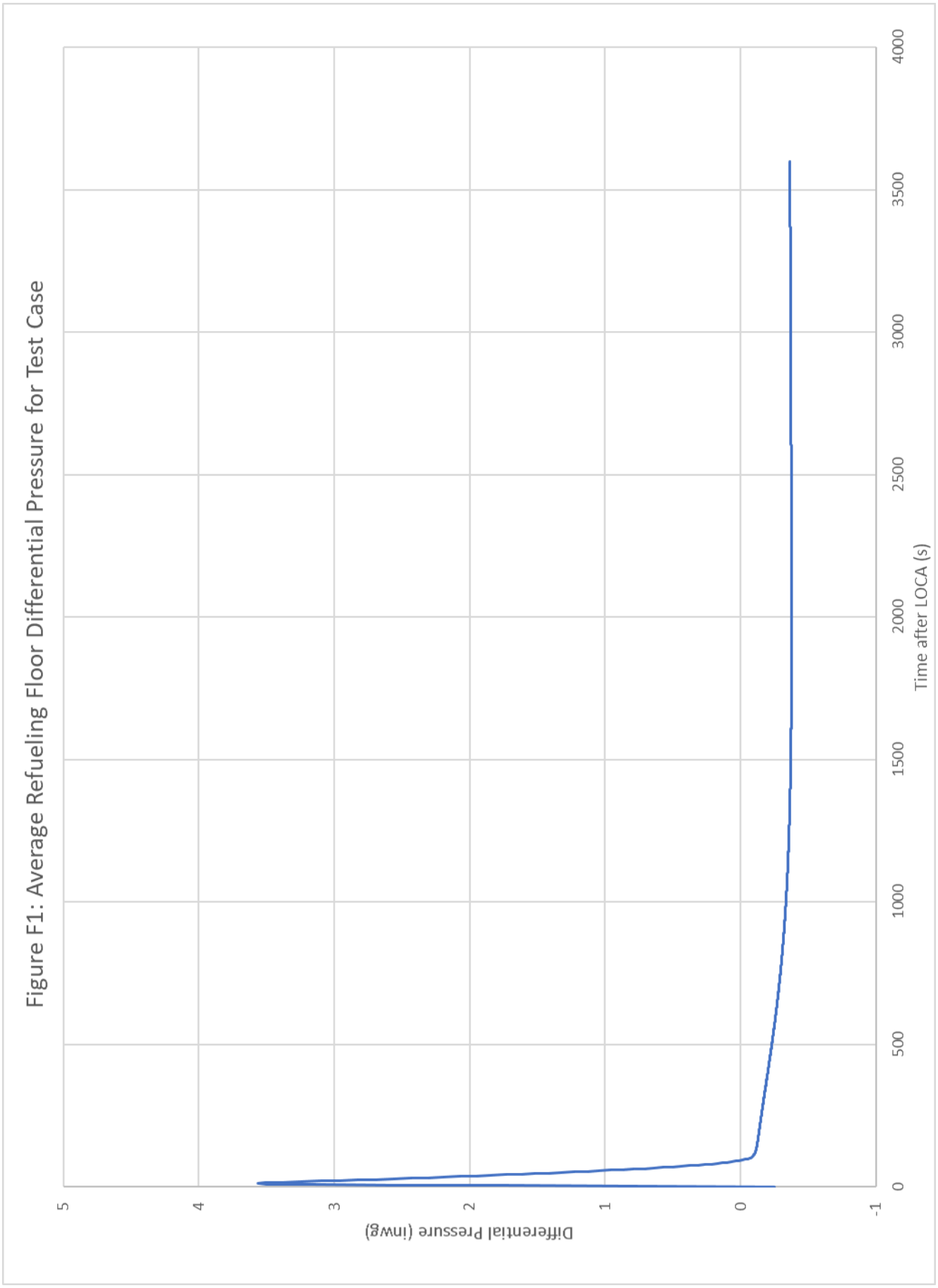
Figure F1: Average Refueling Floor Differential Pressure for Test Case
Differential Pressure (inwg)
5
4
3
2
1
0
-1
Time after LOCA (s)
0
500
1000
1500
2000
2500
3000
3500
4000

Table F1: Normal Reactor Building Heat Loads for Test Case

Elevation (ft)	Reference Values Space	Heat Load (BTU/hr)	Notes	Gothic CV	Heat Load (BTU/s)
369	1	6550	1	6	40.2
		138000	2		
344	2A/B	44740		5	141.5
	3&4	24990			
	5	428460			
	8A	1225			
	11A/B	10100			
326	12A/B	6400		4	81.0
	9	237290			
	10	43440			
	13	4380			
300	15	300000		3	123.9
	17A/B	89400			
	18	38102			
	19A/B	18650			
272	16A/B	3800	3	2	74.5
	21	212190			
	22	9535			
	23	6200			
	24	9000			
	25	6660			
	26	0			
	27	7900			
	28	13040			
227	32	164325	4	1	45.6

Notes:

1 DW head heat load
2 Lighting heat load
3 RHR HX room heat load during normal operation
4 227' elevation heat loads during normal operation

File Comparison: Double entries indicate differences. 10
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GOTHIC Version 8.2(QA) - Oct 2016

Flow Paths - Table 3

Flow Path #	Fwd. Loss Coeff.	FF	Rev. Loss Coeff.	FF	Comp. Opt.	Critical Flow Model	Exit Loss Coeff.	Drop Breakup Model	Homog. Flow Opt.
1	2.85		2.85		OFF	OFF	0.	OFF	OFF
2	2.85		2.85		OFF	OFF	0.	OFF	OFF
3	2.85		2.85		OFF	OFF	0.	OFF	OFF
4	2.85		2.85		OFF	OFF	0.	OFF	OFF
5	2.85		2.85		OFF	OFF	0.	OFF	OFF
6	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
7	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
8	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
9	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
10	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
11	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
12	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
13	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
14	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
15	1e-60		1e-60		OFF	OFF	0.	OFF	OFF
16	1e-20		1e-20		OFF	OFF	0.	OFF	OFF
17	1e-20		1e-20		OFF	OFF	0.	OFF	OFF
18	310.8		310.8		OFF	OFF	0.	OFF	OFF
19	2074.3		2074.3		OFF	OFF	0.	OFF	OFF
20	196.4		196.4		OFF	OFF	0.	OFF	OFF
21	1327.5		1327.5		OFF	OFF	0.	OFF	OFF
22	2040.1		2040.1		OFF	OFF	0.	OFF	OFF
23	12.8		12.8		OFF	OFF	0.	OFF	OFF
24	6850.1		6850.1		OFF	OFF	0.	OFF	OFF
25	6110.1		6110.1		OFF	OFF	0.	OFF	OFF
26	68.5		68.5		OFF	OFF	0.	OFF	OFF
27	654.4		654.4		OFF	OFF	0.	OFF	OFF
28	977.6		977.6		OFF	OFF	0.	OFF	OFF
29	16.2		16.2		OFF	OFF	0.	OFF	OFF
30	/5.7 \1e+20		5.7		OFF	OFF	0.	OFF	OFF
31	/5.7 \1e+20		5.7		OFF	OFF	0.	OFF	OFF
32	/5.7 \1e+20		5.7		OFF	OFF	0.	OFF	OFF
33	/5.7 \1e+20		5.7		OFF	OFF	0.	OFF	OFF
34	2.85		2.85		OFF	OFF	0.	OFF	OFF
35	2.85		2.85		OFF	OFF	0.	OFF	OFF
36	2.85		2.85		OFF	OFF	0.	OFF	OFF
37	2.85		2.85		OFF	OFF	0.	OFF	OFF
38	2.85		2.85		OFF	OFF	0.	OFF	OFF
39	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
40	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
41	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
42	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
43	1e-10		1e-10		OFF	OFF	0.	OFF	OFF

File Comparison: Double entries indicate differences. 11
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GOTHIC Version 8.2(QA) - Oct 2016

Flow Paths - Table 3 (cont.)

Flow Path #	Fwd. Loss Coeff.	FF	Rev. Loss Coeff.	FF	Comp. Opt.	Critical Flow Model	Exit Loss Coeff.	Drop Breakup Model	Homog. Flow Opt.
44	1e-10		1e-10		OFF	OFF	0.	OFF	OFF
45	1e-10		1e-10		OFF	OFF	0.	OFF	OFF

Forcing Function Tables

FF#	Description	Ind. Var.	Dep. Var.	Points
0	Constant	-	-	0
1T	SGT Flow	Ind. Var.	Dep. Var.	/4 \5
2T	OA Temperature	Ind. Var.	Dep. Var.	4
3T	OA Humidity	Ind. Var.	Dep. Var.	4
4T	Cond HTC Coefs	Ind. Var.	Dep. Var.	4
5T	SP Temp	Ind. Var.	Dep. Var.	28
6T	DW Temp	Ind. Var.	Dep. Var.	4
7T	RB Supply Fan	Ind. Var.	Dep. Var.	10
8T	RB Exhaust Fan	Ind. Var.	Dep. Var.	10
9T	SFP Evaporation	Ind. Var.	Dep. Var.	4

Data Files

File #	Name	Type	Inter-polate	Output Files	Detail Level	Format Option
1	**/JAF Drawdown Te \JAF Drawdown Ca**	TIME	YES	SINGLE	FULL	

Fluid Boundary Conditions - Table 1

BC#	Description	Press. (psia)	FF	Temp. (F)	FF	Flow (lbm/s)	FF	S P	J O	ON Trip	OFF Trip	Elev. (ft)
1P	Exhaust Wall Am	14.7		1	2T			N	N			272.
2F	Exhaust Wall Am	14.7		1	2T	v1e10		N	N			272.
3P	W Wall Ambient	14.6967		1	2T			N	N			272.
4F	W Wall Ambient	14.6967		1	2T	v1e10		N	N			272.
5P	E Wall Ambient	14.6967		1	2T			N	N			272.
6F	E Wall Ambient	14.6967		1	2T	v1e10		N	N			272.
7P	N Wall Ambient	14.6965		1	2T			N	N			272.
8F	N Wall Ambient	14.6965		1	2T	v1e10		N	N			272.

File Comparison: Double entries indicate differences. 12
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\ Compare File: C:\Users\jlwright\Documents\Exelon AST\JAF Drawdown\Gothic\Final\JAF Drawdown Case4.GTH
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GOTHIC Version 8.2(QA) - Oct 2016

Fluid Boundary Conditions - Table 1 (cont.)

BC#	Description	Press. (psia)	FF	Temp. (F)	FF	Flow (lbm/s)	FF	S P	J O	ON Trip	OFF Trip	Elev. (ft)
9P	S Wall Ambient	14.7066		1	2T			N	N			272.
10F	S Wall Ambient	14.7066		1	2T	v1e10		N	N			272.
11F	SGT 227	14.7		1	2T	V-0.2	1T	N	N			656.6
12F	SGT 272	14.7		1	2T	V-0.2	1T	N	N			656.6
13F	SGT 300	14.7		1	2T	V-0.2	1T	N	N			656.6
14F	SGT 326	14.7		1	2T	V-0.2	1T	N	N			656.6
15F	SGT 344	14.7		1	2T	V-0.2	1T	N	N			656.6
16F	SGT 369	14.7		1	2T	V-0	1T	N	N			656.6
17F	SFP Evap	**/0.95 \1.945**		**/100 \125**		**/0.025 \0.063**	9T	N	N			369.5

Cooler/Heater

Heater Cooler #	Description	Vol. #	On Trip #	Off Trip #	Flow Rate (CFM)	Flow Rate FF	Heat Rate (Btu/s)	Heat Rate FF	Phs Opt	Ctrlr Loc
1H	RB 227	1	1				**/45.6 \349.3**		VTI	1
2H	RB 272	2	1				**/74.5 \77.1**		VTI	2
3H	RB 300	3	1				123.9		VTI	3
4H	RB 326	4	1				81.		VTI	4
5H	RB 344	5	1				141.5		VTI	5
6H	RB 369 Refuel	6	1				**/40.2 \76.7**		VTI	6
7C	ECCS Coolers	1	1				**/0. \349.3**		VTI	1

Conductor Surface Options - Table 1

Surf Opt #	Description	Heat Transfer Option	Nominal Value	FF	Cnd/ Cnv Opt	Cnd Opt	Sp Cnv HTC	Nat Cnv Opt	For Cnv Opt
1	Interior Wall	Direct		4T		DLM-FM		VERT SURF	OFF
2	Int Ceiling	Direct		4T		DLM-FM		FACE DOWN	OFF
3	Int Floor	Direct		4T		DLM-FM		FACE UP	OFF
4	Insulated	Sp Heat	0.						
5	Torus	Direct		4T		DLM-FM		HORZ CYL	OFF
6	SP Temp	Sp Temp	**/70. \1.**	**/ \5T**					
7	DW Temp	Sp Temp	1.	6T					
8	SFP Temp	Sp Temp	**/100. \125.**						
9	Outside Air	Sp Temp	-10.						

File Comparison: Double entries indicate differences. 13
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\ Compare File: C:\Users\jlwright\Documents\Exelon AST\JAF Drawdown\Gothic\Final\JAF Drawdown Case4.GTH
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GOTHIC Version 8.2(QA) - Oct 2016

Function 1T SGT Flow Ind. Var.: Dep. Var.:			
Ind. Var.	Dep. Var.	Ind. Var.	Dep. Var.
0. /1000.01 \1021. /xxxxxxxxxx \1e+06	0. /93.33 \0. /xxxxxxxxxx \93.33	1000. /1e+06 \1021.01 /xxxxxxxxxx \	0. 93.33 /xxxxxxxxxx \

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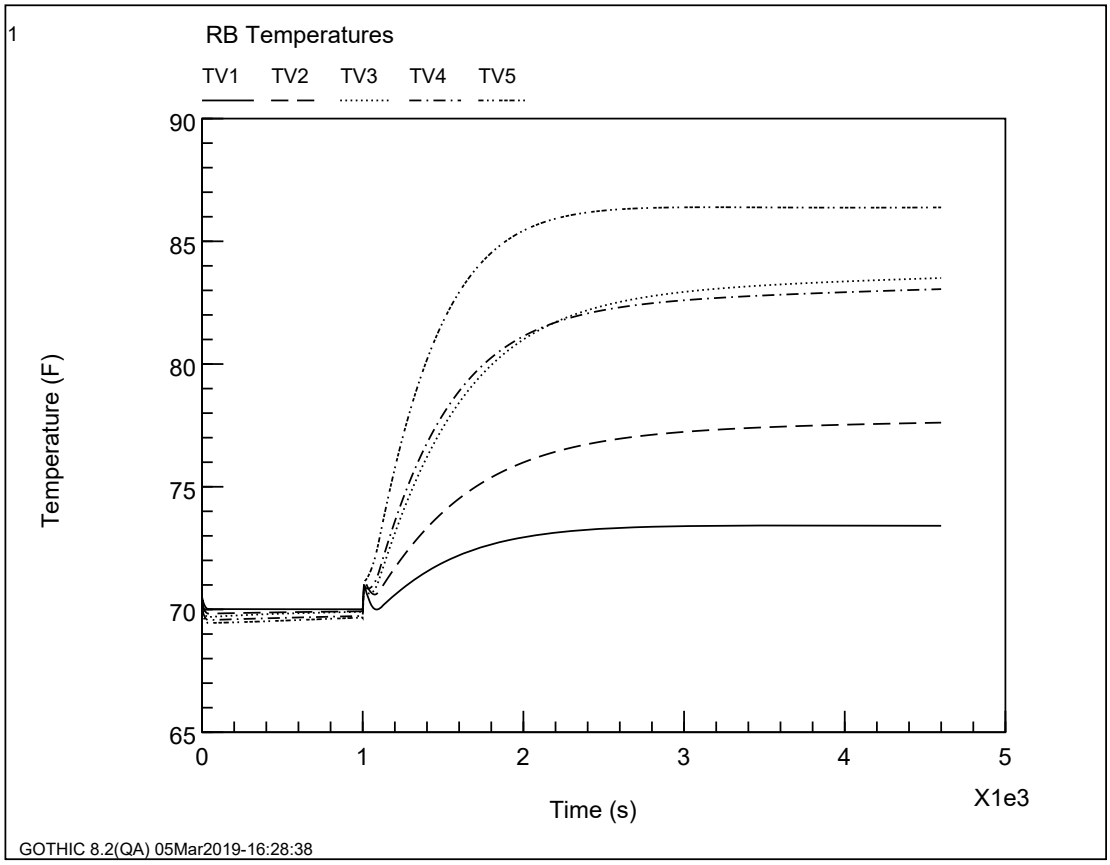

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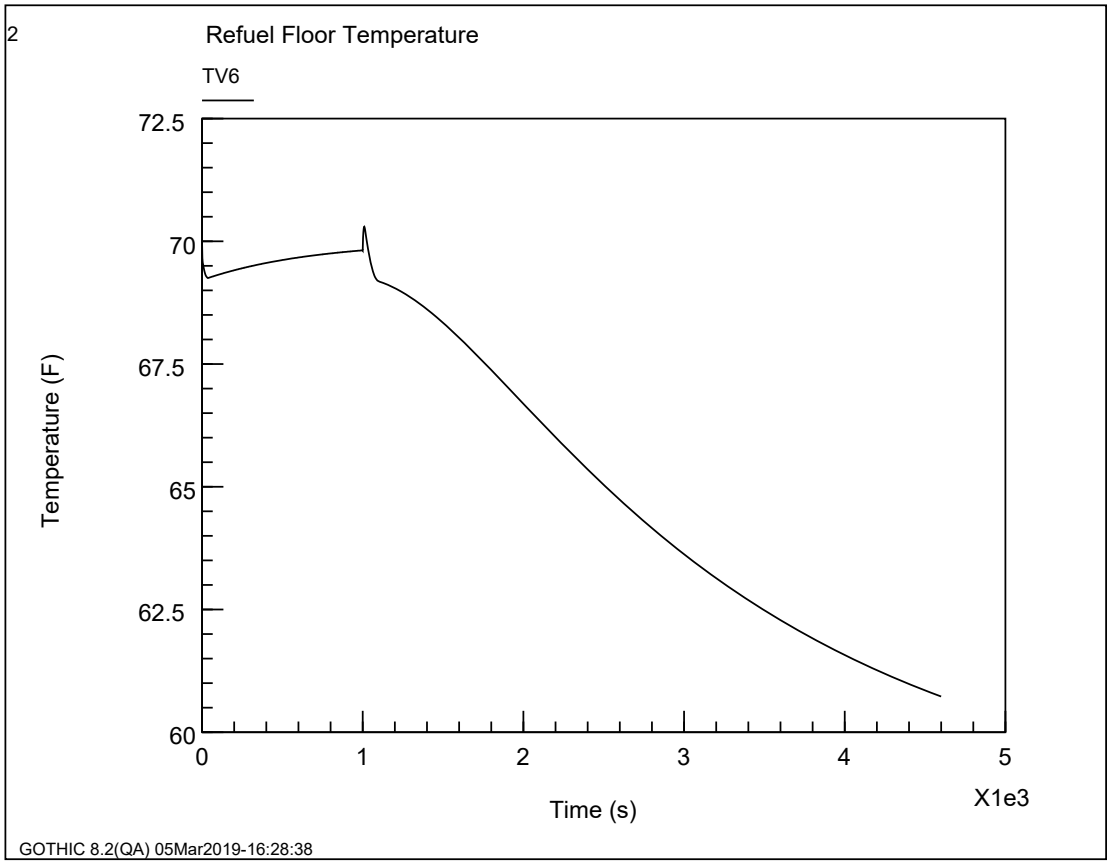

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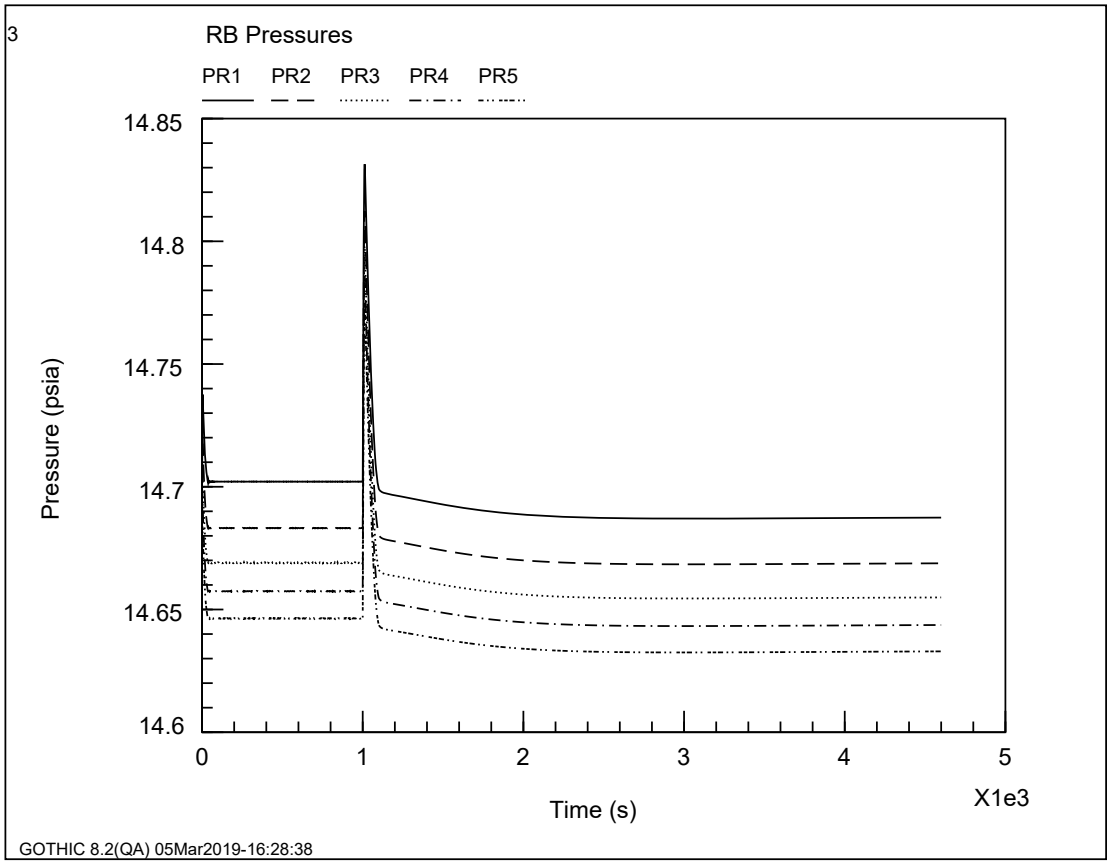

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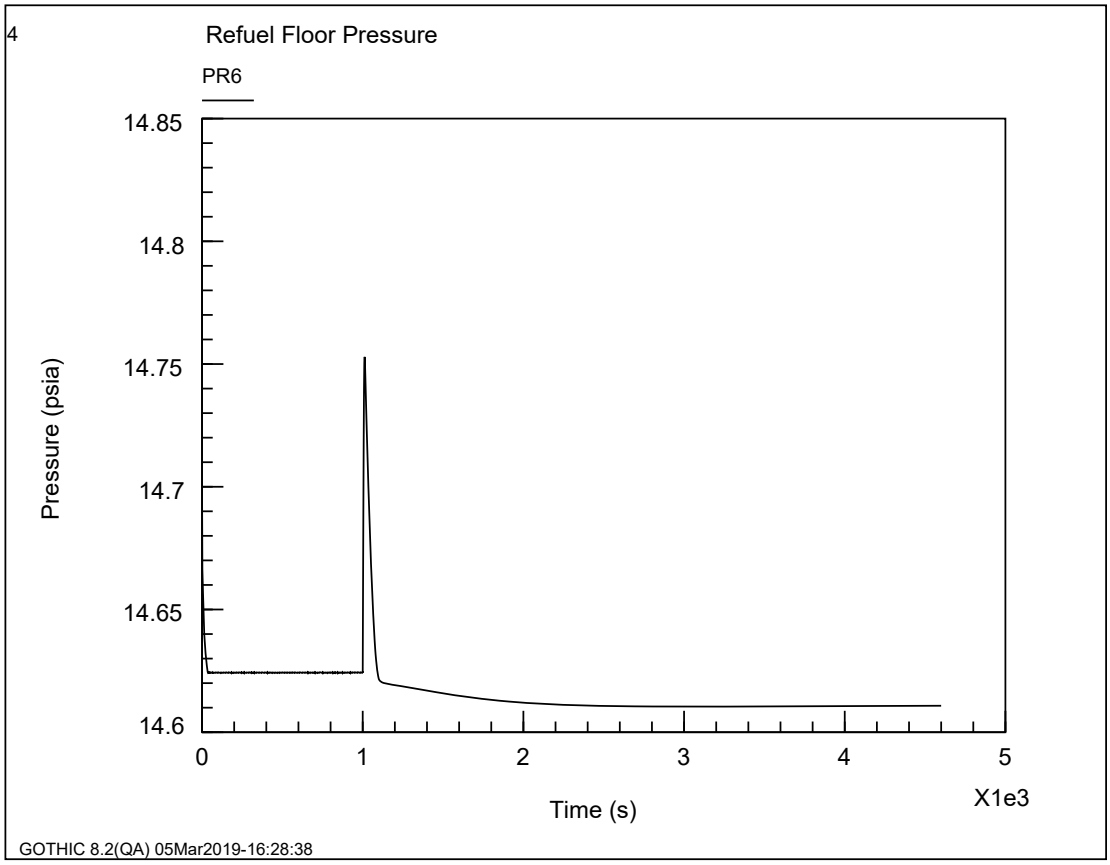

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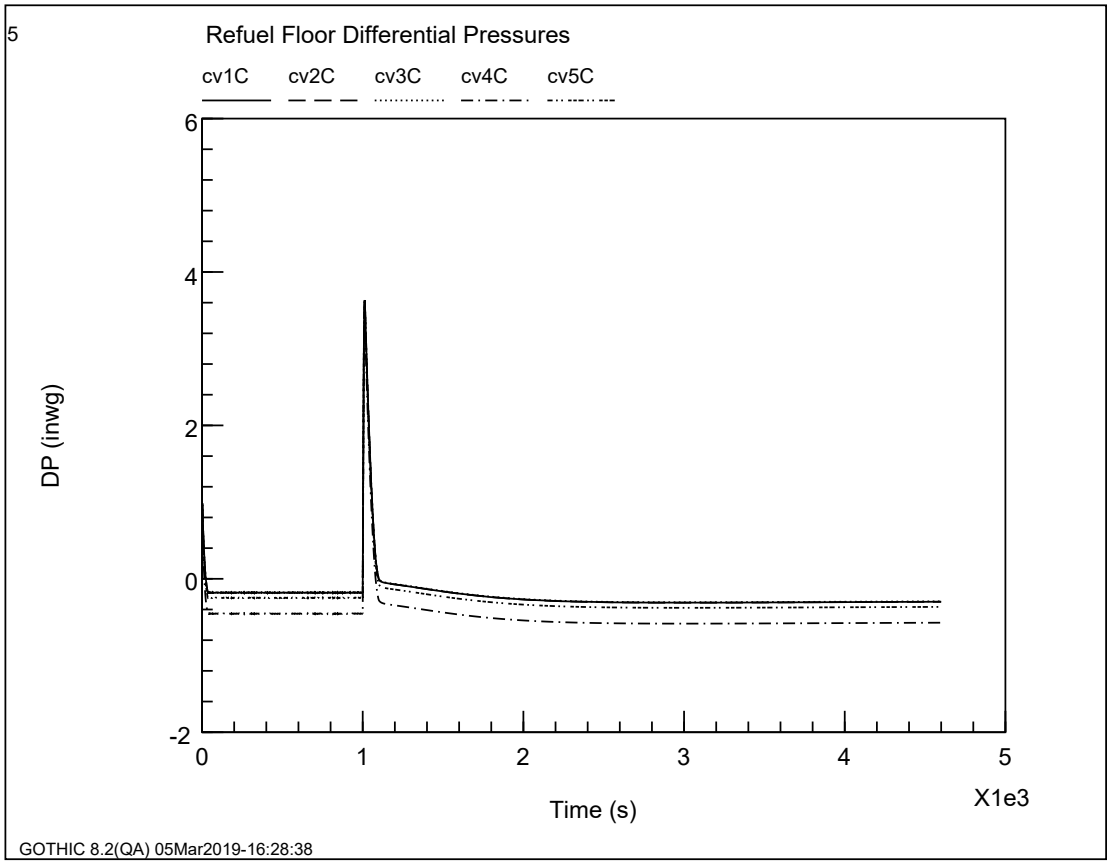

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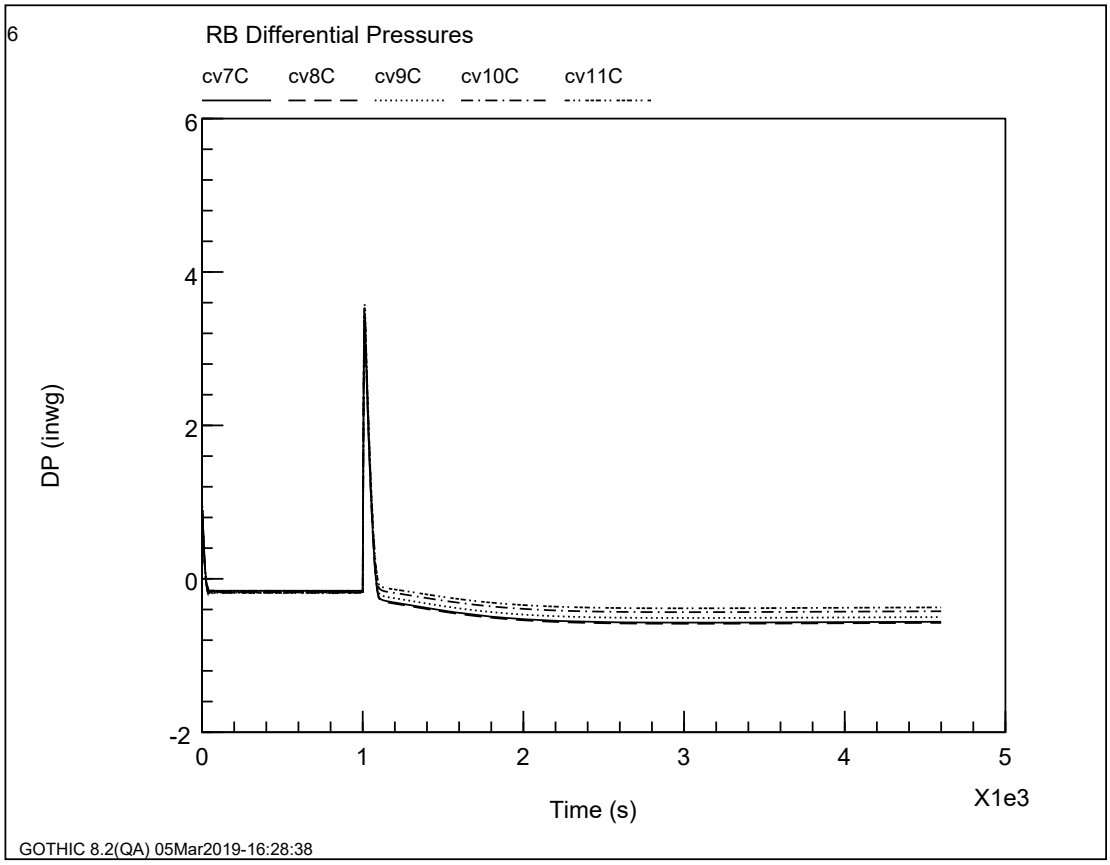

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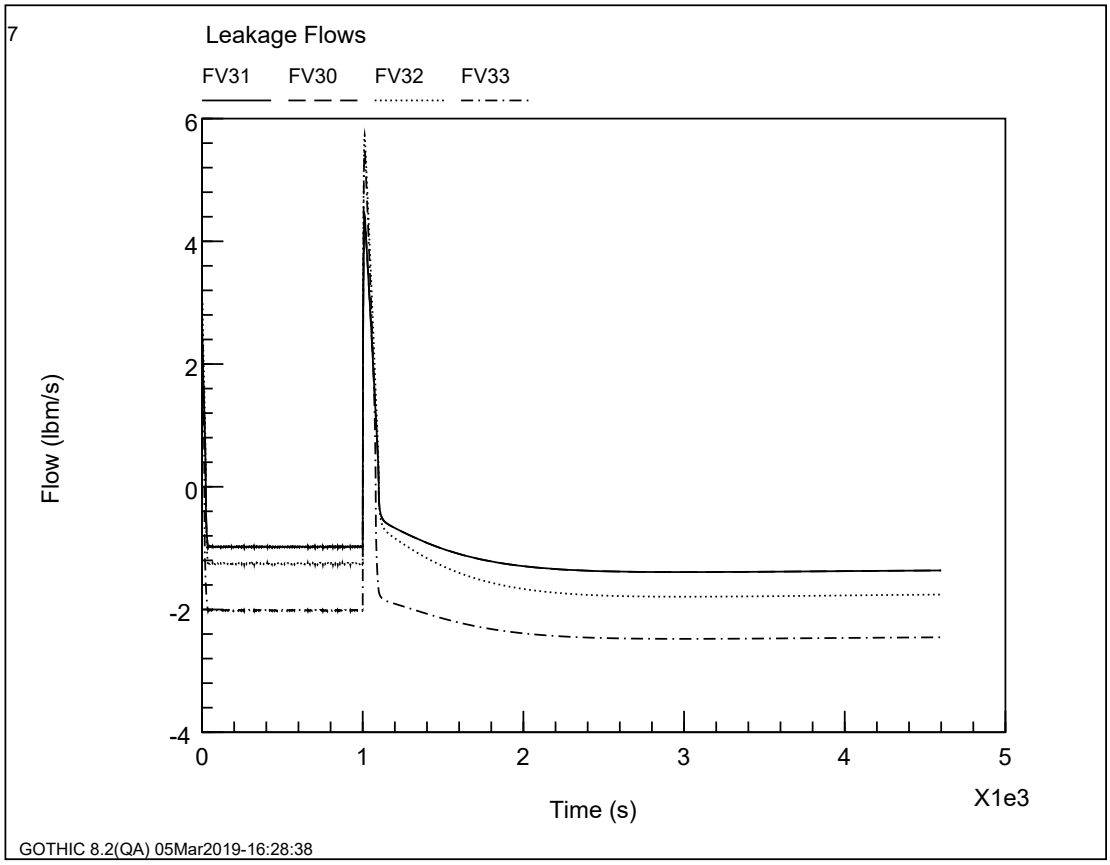

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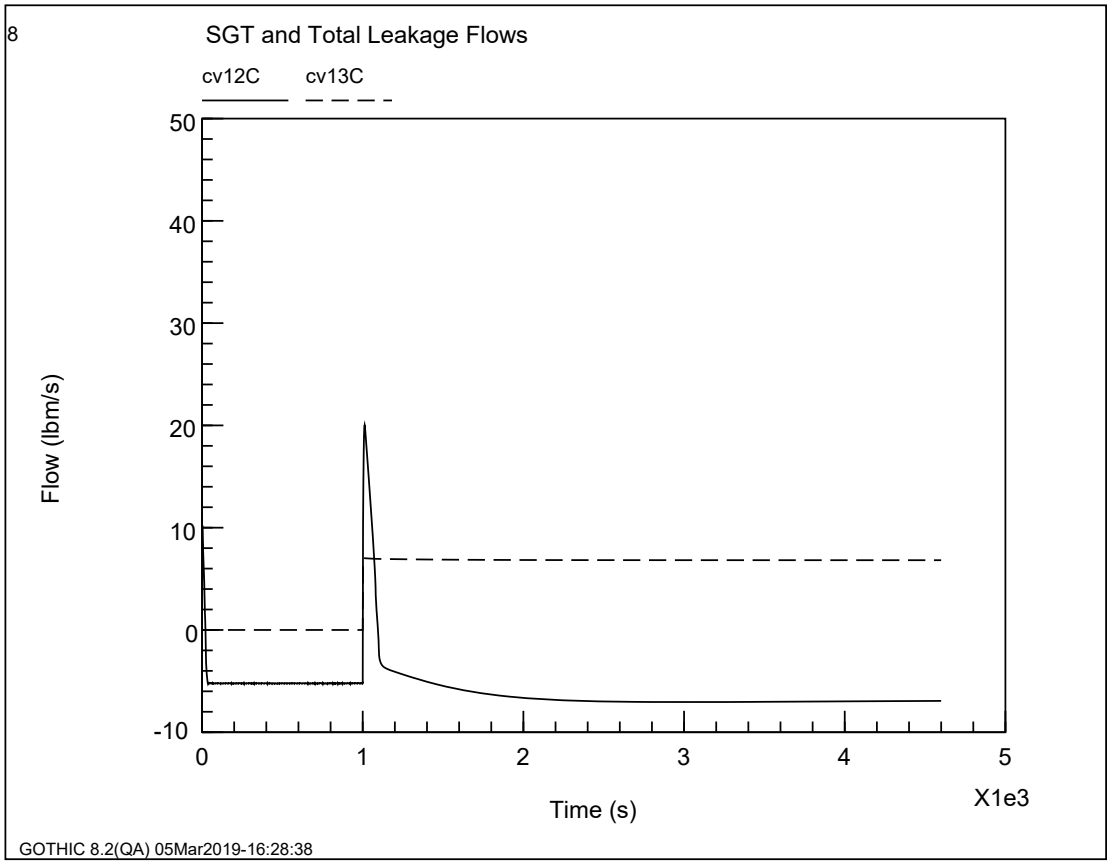

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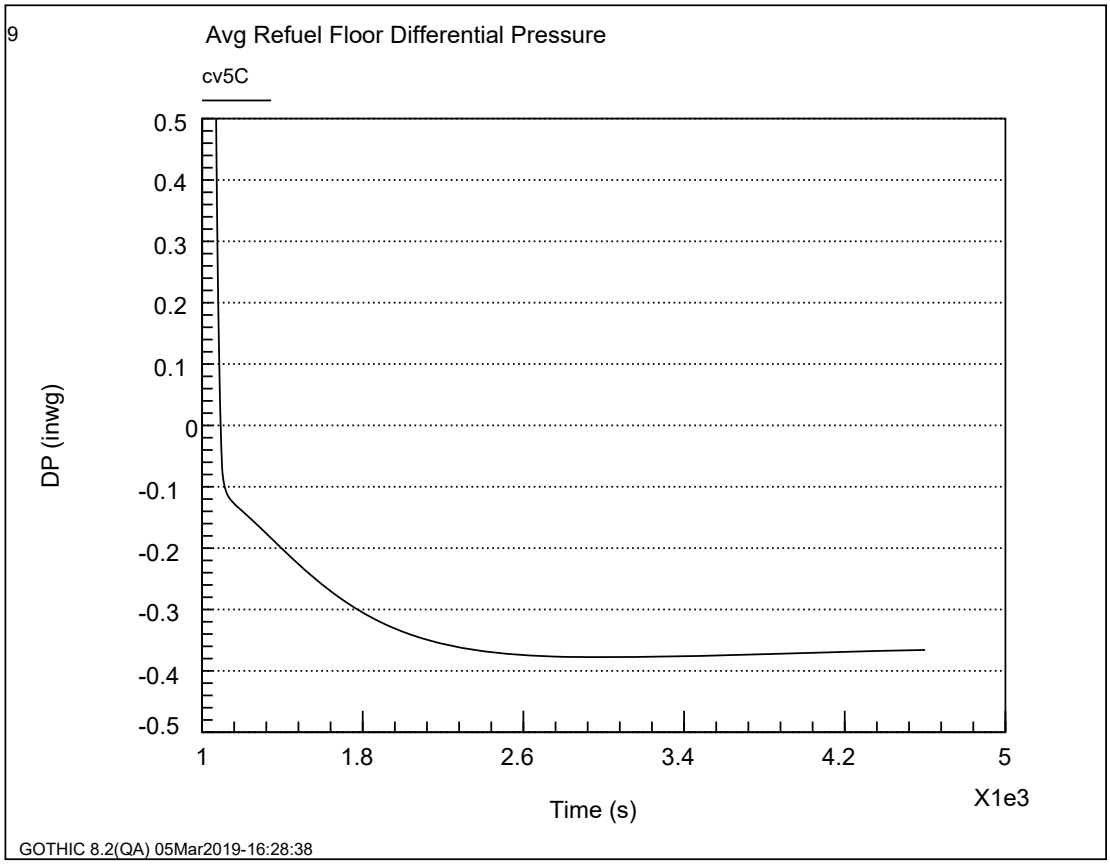

Attachment 6
JAF-CALC-19-00005, Revision 0 -
JAFNPP Post-LOCA EAB, LPZ, and CR Dose - AST Analysis

Design Analysis Cover Sheet
Page 1

Design Analysis		Last Page No. [6] 814	
Analysis No.: [1]	**JAF-CALC-19-00005**	Revision: [2] **0** Major ☒	Minor ☐
Title: [3]	**Post-LOCA EAB, LPZ, and CR Dose – AST Analysis**		
EC/ECR No.: [4]	626767	Revision: [5] **0**	

		Component(s): [14]	
Station(s): [7]	**JAF**		
Unit No.: [8]	**1**		
Discipline: [9]	**NUDC**		
Descrip. Code/Keyword: [10]	**A1/D5/L3**		
Safety/QA Class: [11]	**SR**		
System Code: [12]	**N/A**		
Structure: [13]	**N/A**		

CONTROLLED DOCUMENT REFERENCES [15]

Document No.:	From/To	Document No.:	From/To
For Reference Documents, see Section 9.0	From		From
	From		
	From		
	From		

Is this Design Analysis Safeguards Information? [16] Yes ☐ No ☒ **If yes, see SY-AA-101-106**

Does this Design Analysis contain Unverified Assumptions? [17] Yes ☐ No ☒ **If yes, ATI/AR#:**

This Design Analysis SUPERCEDES: [18] N/A in its entirety.

Description of Revision **(list changed pages when all pages of original analysis were not changed):** [19]
Initial Issue

Preparer: [20]	**Marvin Morris (ENERCON)**	Marvin Morris	**7/12/19**
	Print Name	**Sign Name**	**Date**

Method of Review: [21] Detailed Review ☒ Alternate Calculations (attached) ☐ Testing ☐

Reviewer: [22]	**Jeffrey Head (ENERCON)**	Jeffrey Head	7/12/19
	Print Name	**Sign Name**	**Date**

Review Notes: [23] **Independent review** ☒ **Peer review** ☐

The document has been reviewed in its entirety and found to be acceptable. All recommended changes were minor in nature, having been discussed, accepted, and incorporated into the final document.

(For External Analyses Only)

External Approver: [24]	**Guy Spikes (ENERCON)**	Guy Spikes	7/12/19
	Print Name	**Sign Name**	**Date**
Exelon Reviewer: [25]	Shane R. Gardner		7/16/19
	Print Name	**Sign Name**	**Date**

Independent 3rd Party Review Reqd? [26] Yes ☐ No ☒

Exelon Approver: [27]	John Massari		7/16/2019
	Print Name	**Sign Name**	**Date**

CC-AA-103-1003
Revision 13

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis
Page 1 of 3

Design Analysis No.: JAF-CALC-19-00005 **Rev:** 0
Contract #: 00597114 **Release #:** 00151

No	Question	Instructions and Guidance	Yes / No / N/A
1	Do assumptions have sufficient documented rationale?	All Assumptions should be stated in clear terms with enough justification to confirm that the assumption is conservative. For example, 1) the exact value of a particular parameter may not be known or that parameter may be known to vary over the range of conditions covered by the Calculation. It is appropriate to represent or bound the parameter with an assumed value. 2) The predicted performance of a specific piece of equipment in lieu of actual test data. It is appropriate to use the documented opinion/position of a recognized expert on that equipment to represent predicted equipment performance. Consideration should also be given as to any qualification testing that may be needed to validate the Assumptions. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
2	Are assumptions compatible with the way the plant is operated and with the licensing basis?	Ensure the documentation for source and rationale for the assumption supports the way the plant is currently or will be operated post change and they are not in conflict with any design parameters. If the Analysis purpose is to establish a new licensing basis, this question can be answered yes, if the assumption supports that new basis.	☒ ☐ ☐
3	Do all unverified assumptions have a tracking and closure mechanism in place?	**If** there are unverified assumptions without a tracking mechanism indicated, **then** create the tracking item either through an ATI or a work order attached to the implementing WO. Due dates for these actions need to support verification prior to the analysis becoming operational or the resultant plant change being op authorized.	☐ ☐ ☒
4	Do the design inputs have sufficient rationale?	The origin of the input, or the source should be identified and be readily retrievable within Exelon's documentation system. If not, then the source should be attached to the analysis. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
5	Are design inputs correct and reasonable with critical parameters identified, if appropriate?	The expectation is that an Exelon Engineer should be able to clearly understand which input parameters are critical to the outcome of the analysis. That is, what is the impact of a change in the parameter to the results of the analysis? If the impact is large, then that parameter is critical.	☒ ☐ ☐
6	Are design inputs compatible with the way the plant is operated and with the licensing basis?	Ensure the documentation for source and rationale for the inputs supports the way the plant is currently or will be operated post change and they are not in conflict with any design parameters.	☒ ☐ ☐

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis
Page 2 of 3

Design Analysis No.: JAF-CALC-19-00005 Rev: 0

No	Question	Instructions and Guidance	Yes / No / N/A
7	Are Engineering Judgments clearly documented and justified?	See Section 2.13 in CC-AA-309 for the attributes that are sufficient to justify Engineering Judgment. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
8	Are Engineering Judgments compatible with the way the plant is operated and with the licensing basis?	Ensure the justification for the engineering judgment supports the way the plant is currently or will be operated post change and is not in conflict with any design parameters. **If** the Analysis purpose is to establish a new licensing basis, **then** this question can be answered yes, if the judgment supports that new basis.	☒ ☐ ☐
9	Do the results and conclusions satisfy the purpose and objective of the Design Analysis?	Why was the analysis being performed? Does the stated purpose match the expectation from Exelon on the proposed application of the results? **If** yes, **then** the analysis meets the needs of the contract.	☒ ☐ ☐
10	Are the results and conclusions compatible with the way the plant is operated and with the licensing basis?	Make sure that the results support the UFSAR defined system design and operating conditions, or they support a proposed change to those conditions. If the analysis supports a change, are all of the other changing documents included on the cover sheet as impacted documents?	☒ ☐ ☐
11	Have any limitations on the use of the results been identified and transmitted to the appropriate organizations?	Does the analysis support a temporary condition or procedure change? Make sure that any other documents needing to be updated are included and clearly delineated in the design analysis. Make sure that the cover sheet includes the other documents where the results of this analysis provide the input.	☒ ☐ ☐
12	Have margin impacts been identified and documented appropriately for any negative impacts (Reference ER-AA-2007)?	Make sure that the impacts to margin are clearly shown within the body of the analysis. If the analysis results in reduced margins ensure that this has been appropriately dispositioned in the EC being used to issue the analysis.	☒ ☐ ☐
13	Does the Design Analysis include the applicable design basis documentation?	Are there sufficient documents included to support the sources of input, and other reference material that is not readily retrievable in Exelon controlled Documents?	☒ ☐ ☐
14	Have all affected design analyses been documented on the Affected Documents List (ADL) for the associated Configuration Change?	Determine if sufficient searches have been performed to identify any related analyses that need to be revised along with the base analysis. It may be necessary to perform some basic searches to validate this.	☒ ☐ ☐
15	Do the sources of inputs **and** analysis methodology used meet committed technical and regulatory requirements?	Compare any referenced codes and standards to the current design basis and ensure that any differences are reconciled. If the input sources **or** analysis methodology are based on an out-of-date methodology or code, additional reconciliation may be required if the site has since committed to a more recent code	☒ ☐ ☐

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis
Page 3 of 3

Design Analysis No.: JAF-CALC-19-00005 Rev: 0

No	Question	Instructions and Guidance	Yes / No / N/A
16	Have vendor supporting technical documents and references (including GE DRFs) been reviewed when necessary?	Based on the risk assessment performed during the pre-job brief for the analysis (per HU-AA-1212), ensure that sufficient reviews of any supporting documents not provided with the final analysis are performed.	☒ ☐ ☐
17	Do operational limits support assumptions and inputs?	Ensure the Tech Specs, Operating Procedures, etc. contain operational limits that support the analysis assumptions and inputs.	☒ ☐ ☐
18.	List the critical characteristics of the product and validate those critical characteristics. **See below.**		

Create an SFMS entry as required by CC-AA-4008. SFMS Number: **65868**

The questions related to how the plant is designed and licensed are answered assuming that this design analysis will meet those after approval of the associated License Amendment Request.

The critical characteristics are defined in the inputs and assumptions sections. There are many critical inputs that are too extensive to list. Some critical inputs are the plant parameters associated with leakage rates and fission product removal rates (often associated with Technical Specifications or equipment governed by Technical Specifications). Also a critical input is the radionuclide inventory evaluated.

REVISION HISTORY

Revision	Revision Description
0	Original Issue

PAGE REVISION INDEX

PAGE	REV	PAGE	REV
1-78	0		
Attachments 12.1 through 12.14	0		

Contents

1. PURPOSE

The purpose of this calculation is to evaluate the post-LOCA Exclusion Area Boundary (EAB), Low Population Zone (LPZ), and Control Room (CR) doses for the James A. Fitzpatrick Nuclear Power Station (JAF) using the methodology of Regulatory Guide 1.183, “Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors” (Ref. 9.1).

JAF has currently employed the AST methodology for the Fuel Handling Accident only. Because the previous licensing basis LOCA analysis utilizes the guidance of TID-14844, “Calculation of Distance Factors for Power and Test Reactor Sites,” (Ref. 9.2) and Regulatory Guide 1.3, “Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Boiling Water Reactors,” (Ref. 9.73) conversion to the AST methodology for the LOCA accident will require a license amendment. In accordance with RG 1.183, implementation of the AST methodology for the LOCA accident constitutes full implementation of the AST methodology and future revisions of other dose calculations (Control Rod Drop, Main Steam Line Break, etc.) will need to implement the AST methodology. This calculation is performed in a reasonably conservative manner in which the following design basis post-LOCA release paths are analyzed:

1. Containment Leakage.
2. Engineered Safety Feature (ESF) Leakage.
3. Main Steam Isolation Valve (MSIV) Leakage in accordance with Technical Specifications.

In addition, this analysis will also consider modifications in the previous design basis assumptions which address:

- The core fission product isotopic inventory for increased Core Average Exposure (CAVEX)
- Removal of the main steam line (MSL) leakage collection system
- Increase in MSIV allowable leakage
- Increase in the Standby Gas Treatment System (SGTS) and Control Room Emergency Ventilation Air Supply (CREVAS) system filter efficiency credit
- Changes in containment free air volume and suppression chamber level.
- Credit for drywell sprays
- Credit for deposition in main steam lines

These items will be addressed by reductions in the conservatisms currently in the design basis input assumptions. The conservatisms in the design inputs are either added, multiplied, or otherwise compounded due to interaction with each other within a given time domain. The integrated affect is inherently extremely conservative due to the nature of interplay of design inputs. Knowing the inherent conservative nature of the radiological analyses, an analysis with “reasonably conservative” design inputs still provides the desired level of conservatisms to comply with the underlying regulations while enhancing the plant operational flexibility and reducing the maintenance costs to generate power economically without sacrificing the design-in-depth philosophy including operational safety.

2. METHODOLOGY

The design basis loss of coolant accident is analyzed using a conservative set of assumptions and as-built design input parameters compatible for the AST methodology and TEDE dose criteria. The numeric values of the critical design inputs are conservatively selected to ensure an appropriately prudent safety margin against unpredicted events in the course of an accident while compensating for large uncertainties in facility parameters, accident progression, radioactive material transport, and atmospheric dispersion.

2.1 Post-LOCA Containment Leakage

2.1.1 Source Term

The post-LOCA containment leakage model is shown in Figure 1. The BWR core inventory fractions listed in Regulatory Guide 1.183 Table 1 are released into the containment at the release timing shown in RG 1.183 Table 4 (Ref. 9.1, Sections 3.2 & 3.3). Because the post-LOCA minimum suppression chamber water pH is greater than 7.0 (Ref. 9.3), the chemical form of radioiodine released into the containment is assumed to be 95% cesium iodide (CsI), 4.85 percent elemental iodine, and 0.15 percent organic iodide (Ref. 9.1, Section A.2). With the exception of elemental and organic iodine and noble gases, the remaining fission products are assumed to be in particulate form (Ref. 9.1, Section 3.5). The core average exposure (CAVEX) isotopic core inventory (Ci/MWt) is obtained from Reference 9.4 for average core exposure of 12 to 43 GWD/MTU and is listed in Table 1.

2.1.2 Transport in Primary Containment

For compartment and pathway modeling purposes, the radioactivity released from the fuel is assumed to mix instantaneously and homogeneously throughout the free air volume of the primary containment (Drywell). The radioactivity release into the containment is assumed to terminate at the end of the Early In-Vessel phase, which occurs at the end of two hours after the onset of a LOCA (Ref. 9.1, Table 4). The design inputs for the transport in the primary containment are given in Section 5. The reduction in containment leakage activity by dilution in the reactor building (RB) and removal by the SGTS filtration are credited. The SGTS ESF grade charcoal and high-efficiency particulate air (HEPA) filters are tested per JAF Technical Specification (TS) 5.5.8 (Ref. 9.5) to maintain the desired performance during the emergency conditions. Generic Letter (GL) 99-02 (Ref. 9.6) requires use of a safety factor of 2 to calculate the filtration efficiency to be credited in the design basis analysis. The SGTS charcoal and HEPA filtration efficiencies are calculated in Section 7.7.

To determine the MSIV leakage flow rates between the drywell and the Turbine Building, the flow rate analysis is based on the drywell volume during the first 2 hours of the LOCA, and then the combined drywell plus suppression chamber air volume after 2 hours, at which time the containment volume is expected to become well mixed following the restoration of core cooling. The thermal-hydraulic conditions in the primary containment are expected to be quite active due to a very high flow established between drywell and wetwell as a result of steaming and condensing phenomenon (Ref. 9.8, Table 1).

2.1.3 Reduction in Airborne Activity Inside Containment

Iodine removal by suppression pool scrubbing is not credited because the bulk core activity is released to containment well after the initial mass and energy release (see RG 1.183, Section A.3.5). Containment sprays are credited but the removal of the elemental iodine by natural or gravitational deposition on wetted surface areas inside containment due to the iodine adsorption is not credited. Credit for removing elemental iodine via natural deposition is minimal because the sprays are assumed to be activated at 20 minutes post-accident. The Decontamination Factor (DF) of elemental iodine for sprays is based on the Standard Review Plan (SRP) 6.5.2 guidance and is limited to a DF of 200 (Ref. 9.9, page 6.5.2-14).

RG 1.183, Appendix A, Section 3.3, allows the licensees to take a reduction in airborne radioactivity in the containment by containment spray systems that have been designed and are maintained in accordance with SRP 6.5.2 (Ref. 9.9). TS SR 3.6.1.9.3 (Ref. 9.5) requires verification that each spray nozzle is unobstructed. The Technical Requirements Manual (TRM) (Ref. 9.64) indicates that once every 10 years, the spray headers and nozzles are air tested in the drywell (SR 3.6.1.9.3). This test verifies that a flow path exists through the spray header and nozzles and thereby verifies its operational status. TS 3.6.1.9 LCO 3.6.1.9 requires, “Two RHR containment spray subsystems shall be OPERABLE.” Operability of the drywell spray subsystem of the low-pressure coolant injection/containment cooling system is required to condense steam in the containment atmosphere

post-accident. No Technical Specification changes are needed for the residual heat removal (RHR) spray subsystem.

Section 4.8.4 and 4.8.5 of the JAF FSAR Update (Ref. 9.7) states that the containment spray mode of RHR is a safety function provided to limit temperature and pressure in the torus and drywell after a LOCA. All containment cooling functions are manually initiated. Although radionuclide removal credit due to spray operation was not taken in the previous design basis LOCA analyses, the drywell spray mode of the RHR system is currently credited in the accident analysis for removing drywell heat to lower drywell temperature and pressures (Ref. 9.10). Therefore, it can be credited for a dose mitigation function. Details of the spray removal credit and timing are given in Section 7.2.

The containment analysis (Ref. 9.10), assumes that the suppression pool cooling mode or containment spray mode is initiated at 10 minutes following a LOCA to ensure that the peak long-term suppression pool temperature and containment pressure/temperature do not exceed acceptable limits. This is consistent with Section 2.2.2.2 of DBD-010 (Ref. 9.11). Per the system design bases in Section 2.2.2.3 of DBD-010, the spray nozzles have minimal direct impingement on components and containment walls and are spaced to ensure uniform coverage.

2.1.4 Reactor Building

Leakage from the primary containment (Drywell) is assumed to mix in 50% of the RB free air volume. The 50% mixing effectively reduces the RB net free volume by 50% when modeled for the containment & ESF leakage releases. Both SGTS trains start on a LOCA initiation signal of either high DW pressure or low RPV water level (see DBD-027, page 1-2, Ref. 9.18). Above El 369' suction valve 01-125MOV-11 opens after SGT train A auto-initiation and below El 369' suction valve 01-125MOV-12 opens after SGT train B auto-initiation (OP-20, Ref. 9.45). Following SGTS initiation, 1200 cfm is drawn from elevations 262', 280'-6", 307', 334' and 351'-6" each and 5,000 normal-10,000 max cfm is drawn from above elevation 369'-6" (see FM-48A, Ref. 9.44). These distributed flows insure good mixing within the Reactor Building which justifies the 50% mixing assumption.

2.1.5 Containment Purging

Containment purging during a LOCA is not a credible event for JAF. The purge valves, which close on a LOCA signal, will be fully closed before gap release begins at two minutes. Therefore, the release from containment purging is not analyzed per RG 1.183, Section A.7.

2.2 Post-LOCA ESF Leakage

The post-LOCA ESF leakage release model is shown in Figure 2. The ESF systems that recirculate suppression pool water outside of the primary containment are assumed to leak during their intended operation. This release source includes leakage through valve packing glands, pump shaft seals, flanged connections, and other similar components. The radiological consequences from the postulated leakage are analyzed and combined with the radiological consequences from other fission product release paths to determine the total calculated radiological consequences from the LOCA. The ESF components are located in the RB.

2.2.1 ESF Source Term

With the exception of noble gases, all fission products released from the fuel to the containment are assumed to instantaneously and homogeneously mix in the suppression pool water at the time of release from the core. The total ESF leakage from all components is assumed to be 5 gpm. This ESF leakage is doubled (Ref 9.1, Section A.5.2) and assumed to start at the beginning of the gap release (time t = 2.0 minute after the onset of a LOCA). With the exception of iodine, all remaining fission products in the recirculating liquid are assumed to be retained in the liquid phase. Since the temperature of the recirculating liquid is less than 212ºF, 10% iodine activity in the ESF is assumed to become airborne (Ref. 9.1, Appendix A, Section 5.5). The reduction in ESF leakage activity by dilution in 50% of the RB volume and removal by the SGTS filtration are credited.

2.2.2 Chemical Form

The radioiodine that is postulated to be available for release to the environment for the ESF leakage

is assumed to be 97% elemental and 3% organic (Ref. 9.1, Section A.5.6).

2.3 Post-LOCA MSIV Leakage

The post-LOCA MSIV Leakage model is shown in Figures 3 & 4. The four main steam lines, which penetrate the primary containment, are automatically isolated by the MSIVs in the event of a LOCA. There are two MSIVs on each steam line, one inside containment and one outside containment. The MSIVs are functionally part of the primary containment boundary and design leakage through these valves provides a leakage path for fission products to bypass the secondary containment and enter the environment as a ground-level release. The original design used the Main Steam Leak Collection System (MSLCS) to route this leakage to the standby gas treatment system. However, the present calculation does not require, or take credit for, the MSLCS. Instead, the methodology provided in RG 1.183 for main steam isolation valve leakage, with the drywell as the leakage source, is used. In accordance with RG 1.183, Appendix A, Section 3.1, the radioactivity released from the fuel is assumed to mix instantaneously and homogeneously throughout the free air volume of the drywell. The MSIVs are postulated to leak at a total design leak rate of 270 scfh. Removal by deposition in the main steam lines is discussed in Section 7.5. The radiological consequences from postulated MSIV leakage are analyzed and combined with the radiological consequences postulated for other fission product release paths to determine the total calculated radiological consequences from the LOCA.

2.3.1 MSIV Leakage Source Term

The activity available for release via MSIV leakage is assumed to be that activity released into the drywell for evaluating containment leakage. As stated in RIS 2006-04 (Ref. 9.74);

> "As indicated in Appendix A to RG 1.183, Regulatory Position 6.0, the NRC staff accepts the practice of treating fission product concentration in containment (more specifically in the drywell) as representative of that in the vicinity of the MSIV."

2.3.2 Determination of MSIV Leak Rates

All four (4) MSL piping sections between the RPV nozzle and the turbine stop valves (TSVs) used in the MSIV leakage release paths remain intact and are capable of performing their safety function during and following a safe shutdown earthquake (SSE). Based on the structural integrity and functional performance of the MSL piping up to the TSVs to withstand a SSE (Ref. 9.62 and Ref. 9.7, Section 4.11.4), the horizontal pipe surface area and volume is credited in the aerosol removal calculation. A total of 270 scfh MSIV leakage is assumed to occur as follows:

Of the total leakage, 135 scfh is assumed to be through the steam line with the "failed" MSIV. The "MSIV failed" line means that the inboard MSIV in one of the shortest MSLs fails to close and remains open during the accident, which extends the well mixed volume boundary from the RPV nozzle to the outboard MSIV. This MSIV failure complies with a single active component failure requirement that results in the most limiting radiological consequences (RG 1.183, Section 5.1.2). The failure is non-specific and the consequences of the failure are that a single steam line is assumed to have a disproportionately high flow to artificially increase the total allowed MSIV leakage. The deposition removal of aerosol in the horizontal pipe, and the deposition removal of elemental iodine in both the horizontal and vertical pipes, are credited in the steam line between the RPV nozzle and TSVs.

The remaining three steam lines are assumed to leak at a total 135 scfh in accordance with Regulatory Guide 1.183, Appendix A, Section 6.2, which states: "all the MSIVs should be assumed to leak at the maximum leak rate above which the technical specifications would require declaring the MSIVs inoperable." For the intact main steam lines, one well-mixed volume is between the RPV nozzle and the inboard MSIV with a second volume between the inboard MSIV and the TSV (see Figure 3). The deposition removal of aerosol in the horizontal pipe, and the deposition removal of elemental iodine in both the horizontal and vertical pipes, are credited in the steam line between the RPV nozzle and the TSV.

2.3.3 Evaporation of Aerosols Deposited in Inboard MSL Piping:

The inboard piping is connected to the RPV and may achieve the same temperature as the RPV dome prior to water being restored around 1 hr. The temperature in the first MSL node may also exceed 600ºF in a few cases for short duration, but generally stays below 600ºF. In the worst case the temperature transient in the inboard piping may last less than an hour which could potentially impact the aerosol physics and plate out mechanism, which would, in turn, affect the aerosol removal credited in the analysis.

The plated-out aerosol on the inboard MSL pipe surface may be subject to evaporation and then become airborne. Therefore, the evaporation of CsI is qualitatively assessed because it represents 95% of the total core iodine release. Di Lemma et al suggests the CsI revaporization threshold is >1,100ºK (> 1,456ºF) (Ref. 9.80, Section 4.2).

MAAP preliminary results & J.E. Cline (Ref. 9.50) support max steam line temperature ≤ 600ºF. Metcalf conservatively estimated the piping steel temperature rise = 0.5ºF/hr (Ref. 9.79, Section 3.2.2).

A bounding temperature rise during the accident period of 720 hr would be 720 hrs. * 0.5ºF/hr = 360ºF.

The highest temperature of CsI = 600ºF+360ºF = 960ºF, which is considerably less than the vaporization threshold of 1,100ºK or 1,456ºF. Consequently, vaporization of CsI is not expected during a design basis LOCA accident.

2.3.4 Recirculation Line Rupture vs Main Steam Line Rupture

Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 defines LOCAs as those postulated accidents that result from a loss of coolant inventory at rates that exceed the capability of the reactor coolant makeup system. Leaks up to a double-ended rupture of the largest pipe of the reactor coolant system are included. The LOCA, as with all design basis accidents (DBAs), is a conservative surrogate accident that is intended to challenge selective aspects of the facility design. With regard to radiological consequences, a large-break LOCA is assumed as the design basis case for evaluating the performance of release mitigation systems and the containment response. Therefore, a recirculation line rupture is considered as the initiating event rather than a main steam line rupture.

Per the JAF FSAR Update, Section 6.5.3.1, the DBA is defined as the instantaneous guillotine rupture of the recirculation pipe with displacement of both ends so that blowdown occurs from both ends. This LOCA leads to a specific combination of dynamic, quasi-static, and static loads in time. The thermal transient due to other postulated events including the steam line break inside the drywell does not impose maximum challenge to drywell pressure boundary and fuel integrity. The DBA LOCA results in the maximum core damage and fission product releases as shown in the RG 1.183 (Ref. 9.1, Table 1). Therefore, a recirculation line rupture is considered to be the limiting event with respect to radiological consequences.

RG 1.183 (Ref. 9.1, Appendix A, Section 6.5) allows reduction in MSIV releases that is due to holdup and deposition in main steam piping downstream of the MSIVs and in the main condenser, including the treatment of air ejector effluent by offgas systems, if the components and piping systems used in the release path are capable of performing their safety function during and following a safe shutdown earthquake (SSE). Although postulating a main steam line break in one steam line inside the drywell would maximize the dose contribution from the MSIV leakage, the steam line break is not a credible event during a LOCA, because the Seismic Class 1 main steam piping up to the TSVs is designed to withstand the SSE (Ref. 9.62).

2.4 Control Room Model

The post-LOCA radioactive releases from various sources are shown in Figures 1 through 4. The activities released from the various sources are diluted by atmospheric dispersion (χ/Qs) and carried to the CR air intake. The post-LOCA control room RADTRAD nodalization is shown in Figure 1. The post-LOCA radioactive releases that contribute to the CR TEDE dose are as follows:

- Post-LOCA Containment Leakage
- Post-LOCA ESF Leakage
- Post-LOCA MSIV Leakage

The radioactivity from the above sources is assumed to be released into the atmosphere and transported to the CR air intake, where it may leak into the CR envelope or be filtered by the CR intake filtration system, prior to being distributed in the CR envelope.

There are three additional radioactive sources, external to the Control Room, which contribute to the CR dose are:

- Post-LOCA airborne cloud external to CR
- Post-LOCA Reactor Building shine to CR
- Post-LOCA Control Room Emergency Ventilation Air Supply (CREVAS) filter shine

3. ACCEPTANCE CRITERIA

The following NRC regulatory requirement and guidance documents are applicable to this Alternative Source Term LOCA Calculation:

Regulatory Guide 1.183 (Ref. 9.1)

10CFR50.67 (Ref. 9.12)

Standard Review Plan section 15.0.1 (Ref. 9.13)

Dose Acceptance Criteria are:

Regulatory Dose Limits			
Dose Type	Control Room (30 days) (rem TEDE)	EAB (Max 2 hours) (rem TEDE)	LPZ (30 days) (rem TEDE)
TEDE Dose	5	25	25

4. REGULATORY COMPLIANCE AND ASSUMPTIONS

Compliance of the JAF LOCA analysis with the requirements in Regulatory Guide 1.183 (Ref. 9.1) are given in Attachment 12.1. In addition, the NRC experience with AST implementation and suggestions provided in NRC Regulatory Issue Summary 2006-04, “Experience with Implementation of Alternative Source Terms,” March 7, 2004 (Ref. 9.74) has been considered.

5. DESIGN INPUTS

5.1 General Considerations

5.1.1 Applicability of Prior Licensing Basis

The implementation of an AST is a significant change to the design basis of the facility and the assumptions and design inputs used in the previous licensing basis LOCA analyses. The characteristics of the AST and the revised TEDE dose calculation methodology are incompatible with some of the analysis assumptions and methods used in the previous LOCA analyses. The Fitzpatrick specific design inputs and assumptions used in the previous TID-14844 analyses were assessed for their validity to represent the as-built condition of the plant and evaluated for their compatibility to meet the AST and TEDE methodology. The analysis in this calculation ensures that assumptions, design inputs, and methods are compatible with the requirements of the AST and the TEDE criteria.

5.1.2 Credit for Engineered Safety Features

Credit is taken only for those accident mitigation features that are classified as safety-related, are required to be operable by technical specifications, are powered by emergency power sources, and are either automatically actuated or, in limited cases, have actuation requirements explicitly addressed in emergency operating procedures. The single active component failures modeled in this calculation are: 1) the inboard MSIV in one main steam line failing to close, and 2) failure of one CREVAS filter train, one SGTS filter train, and one drywell spray pump due to loss of a division of emergency power.

5.1.3 Assignment of Numeric Input Values

The numeric values that are chosen as inputs to the analyses required by 10 CFR 50.67 are compatible to AST and TEDE dose criteria and selected with the objective of maximizing the postulated dose. As a conservative alternative, the limiting value applicable to each portion of the analysis is used in the evaluation of that portion. The use of containment, ESF, and MSIV leakage values higher than actually measured, use of a conservatively high CR unfiltered intake, use of a conservatively low CR filtered inleakage, 30 minutes delay in the CR Emergency Ventilation Mode initiation time, delay of 20-minutes before drywell spray actuation, and use of ground release χ/Qs for the MSIV release and for the Reactor Building release before SGTS is operational demonstrate the conservatisms in the plant design and post-accident response. Other conservatisms incorporated in the analysis are the use of conservatively low SGTS and CREVAS filter efficiencies.

5.1.4 Meteorology Considerations

Control Room atmospheric dispersion factors (χ/Qs) for the onsite release points such as the SGTS stack for containment and ESF leakage release paths were developed using eight (8) years of hourly meteorological data (1985-1992) and the ARCON96 computer code (Ref. 9.42). EAB and LPZ χ/Qs were developed using the James A. Fitzpatrick plant specific meteorology and appropriate regulatory guidance. These analyses, given in calculation JAF-CALC-RAD-00007, Revision 2, (Ref. 9.14), were based on the guidance of Regulatory Guides 1.111 (Ref. 9.77) and 1.145 (Ref. 9.78). The resulting onsite and offsite dispersion values were previously approved by the NRC (Ref. 9.75). As stated in RIS 2006-04 (Ref. 9.74), “Licensees may continue to use atmospheric relative concentration (χ/Q) values and methodologies from their existing licensing-basis analyses when appropriate.”

Atmospheric dispersion factors (χ/Qs) for the new ground level Turbine Building MSIV release pathway were developed using the same set of site hourly meteorological data (1985-1992). Control Room and Technical Support Center (TSC) atmospheric dispersion factors were developed using the NRC sponsored computer code ARCON96 (Ref. 9.43) and the guidance from Regulatory Guide 1.194 (Ref. 9.76).

5.2 Design Inputs/Assumptions

The design inputs/assumptions utilized in the EAB, LPZ, and CR habitability analyses are listed below. The design inputs are compatible with the requirements of the AST and TEDE dose criteria and the assumptions are consistent with those identified in Regulatory Position 3 and Appendix A of RG 1.183 (Ref. 9.1). The design inputs and assumptions in the following sections represent the as-built design of the plant.

Table 5.2-1
Input Parameters

Design Input Parameter	Value Assigned	Reference
Containment Leakage Model Parameters		
Source Term		
Thermal Power Level	2,586.7 MWt (includes 2% margin)	JAF-CALC-RAD-04551, Revision 1 (Ref. 9.4) TS 1.1, Definitions, states 2536 MWt as the licensed power level
Rod Average Limit	≤62 GWD/MTU; and <6.3 kW/ft for burnup >54 GWD/MTU	NF Procedure limit (NF-AB-110-3040) (Ref. 9.15)
Core Inventory	CAVEX Isotopic Core Inventory (Table 1)	JAF-CALC-RAD-04551, Revision 1 (Ref. 9.4) Note: CO-58 & CO-60 activities are obtained from RADTRAD User's Manual, Table 1.4.3.2-3 (Ref. 9.16)
Radionuclide Composition		
Group	**Elements**	
Noble Gases	Xe, Kr	RG 1.183, (Ref. 9.1), Regulatory Position (RGP) 3.4, Table 5
Halogens	I, Br	
Alkali Metals	Cs, Rb	
Tellurium Group	Te, Sb, Se, Ba, Sr	
Noble Metals	Ru, Rh, Pd, Mo, Tc, Co	
Lanthanides	La, Zr, Nd, Eu, Nb, Pm, Pr, Sm, Y, Cm, Am	
Cerium	Ce, Pu, Np	
BWR Core Inventory Fraction Released into Containment (Ref 9.1, Table 1)		
Group	**Gap Release Phase**	**Early In-Vessel Release Phase**
Noble Gases	0.05	0.95
Halogens	0.05	0.25
Alkali Metals	0.05	0.20
Tellurium Metals	0.00	0.05
Ba, Sr	0.00	0.02
Noble Metals	0.00	0.0025
Cerium Group	0.00	0.0005
Lanthanides	0.00	0.0002
Timing of Release Phase (Ref. 9.1, Table 4)		
Phase	**Onset**	**Duration**
Gap Release	2 min	0.5 hr
Early In-Vessel Release	0.5 hr	1.5 hr
Iodine Chemical Form		
Aerosol (CsI)	95%	Ref. 9.1, RGP 3.5
Elemental	4.85%	
Organic	0.15%	

Design Input Parameter	Value Assigned	Reference
Activity Transport in Primary Containment		
Drywell Air Volume	154,476 ft^3 (150,000 ft^3 used in analysis)	GE-NE-T2300766-00-01, Rev. 0 (Table 3-1, Ref. 9.10)
Suppression Chamber (Torus) air space volume	112,428 ft^3 (1.09E+05 ft^3 used in analysis)	JAF-CALC-PC-03044 (Ref. 9.24) Page 75, air volume at water level of 14.0 ft. 1.09E+05 ft^3 used in analysis to provide margin for future torus max water level increase.
Drywell plus Suppression Chamber Free Air Volume (as modeled)	259,000 ft^3	150,000 ft^3 + 109,000 ft^3
Containment Elemental Iodine Deposition Removal	Not credited	Assumed
Containment Particulate (Aerosol) Deposition/Plateout	Not credited	Assumed
Containment Elemental Iodine Spray Removal	See Section 7.2 for removal coefficients (λ's)	Standard Review Plan 6.5.2 (Ref. 9.9)
Containment Particulate (Aerosol) Spray Removal	See Section 7.2 for removal coefficients (λ's)	Standard Review Plan 6.5.2 (Ref. 9.9)
Reactor Building (Secondary Containment) Free Volume	2,373,660 ft^3 2,370,000 ft^3 used in analysis (50% = 1,185,000 $ft^{3)}$	JAF-CALC-19-0001, Rev. 0, Attachment C (Ref. 9.17)
Containment Leak Rate into Reactor Building	1.5 v%/day (0 to 24 hours). 0.75 v%/day (1 day to 30 days)	TS 5.5.6, Primary Containment Leakage Rate Test Program L_A = 1.5% wt/day at P_A (leakage reduction at 24-hrs. supported by post-accident containment pressure curve from GE-NE-T23-00737-01, Rev. 0, Ref. 9.10)
Fraction of Containment Leakage that Bypasses the Standby Gas Treatment System	100% during 17.2-minute drawdown period (20 minutes used in analysis) 0% (following 20-minute drawdown period)	Based on Drawdown Calc. JAF-CALC-19-0001, Rev. 0 (Ref. 9.17)
Fraction of Reactor Building Available for Mixing	0.5	Ref. 9.1, RGP A.4.4
SGTS Exhaust Rate	6,000 cfm ± 10% Conservatively high exhaust rate, 6,600 cfm, used in analysis	TS SR 3.6.4.1.4 (Ref. 9.5) TS 5.5.8.b (Ref. 9.5) DBD-027 (Ref. 9.18) UFSAR 5.3.3.4 (Ref. 9.7)
SGTS Exhaust Charcoal and HEPA Filter Efficiencies		
Elemental Iodine	97%	TS 5.5.8.c VFTP will be revised to specify a Penetration of <1.5%. With the GL 99-01 safety factor of two, this gives a 97% efficiency.
Organic Iodide	97%	See above.
Particulate Aerosols	97%	TS 5.5.8.a VFTP will be revised to specify a Penetration and Bypass <1.5%

Design Input Parameter	Value Assigned	Reference
Drywell Spray Parameters		
Volumetric flow rate of the spray pump	5,600 gpm	Train "A" drywell flow, DBD-010 (Ref. 9.11)
Spray initiation time	20 min	SAOG-2 guidance says to initiate sprays when the DW reaches a temperature limit of 309ºF (Ref. 9.19). The containment analysis (GE-NE-T2300766-00-01, Ref. 9.10, page 5-1) assumes that the containment spray is actuated at 10-minutes. This timing agrees with OP-JF-102-106 TCA-31 (Ref. 9.28) which gives a 10-minute time for aligning drywell spray per EOP-4. SAOG-2 guidance also requires torus and drywell spray initiation before the drywell radiation level reaches 250,000 R/hr. A conservative time of 20 minutes will be used as the typical timing for manual operator actions.
Spray termination time	4.0 hr. assumed	A specific spray termination time is not specified in EOPs or SAGs but is assumed to be four hours. Changes in the spray removal efficiency will be based on the time to reach the DF limits for elemental and particulate iodine. Spray termination is based on EOP-4 (Ref. 9.20) which requires spray termination before Drywell pressure drops below 0 psig. From GE-NE-T2300766-00-01 (Ref. 9.10) the pressure at 22 hours is still above 21.2 psia which is well after the time the spray credit is assumed to end.
Elevation of Upper Drywell Spray Header	311' – 3"	FP-14K, Revision 6 (Ref. 9.21)
Elevation of Lower Drywell Spray Header	287' – 6"	FP-14K, Revision 6 (Ref. 9.21)
Elevation of Bottom of Drywell Floor	256' – 6"	FP-27B (Ref. 9.22), FM-1H (Ref. 9.23) FSAR Figure 5.2-1 (Ref. 9.7)
ESF Leakage Model Parameters		
Torus (Suppression Pool) Water Volume	106,442 ft^3 Conservative value of 106,000 ft^3 is used in the analysis	JAF-CALC-PC-03044 (Ref. 9.24) Page 75, water volume at minimum water level of 13.88 ft.
Suppression Pool Activity (Ref. 9.1, RGP A.5.1, A.5.3 & Table 1)		
Halogens	Gap release = 0.05	Early In-vessel release = 0.25
Timing of Release Phase (Ref. 9.1, Table 4)		
Phase	**Onset**	**Duration**
Gap Release	2 min	0.5 hr

Design Input Parameter	Value Assigned	Reference
Early In-Vessel Release	0.5 hr	1.5 hr
ESF Leakage Rate	5 gpm 10 gal/min (= 2 × 5 gal/min allowable leakage rate) 0-30 days used in analysis	TS 5.5.2, Primary Coolant Sources Outside Containment (Ref. 9.5) Leakage assumed to be 5 gpm. See AP-12.07 (Ref. 9.32) RG 1.183, RGP A.5.2 states that the leakage should be two times the allowable leakage with leakage starting at earliest time of recirculation flow and ending when releases from these systems are terminated. An additional 50 gpm leakage from the gross failure of a passive component, suggested by SRP 15.6.5, Appendix B, is not applicable because all leakage is into areas treated by ESF atmospheric filtration systems.
ESF Leakage Initiation Time and Duration	0 to 30 days	Conservative assumption RG 1.183, A.5.2
Suppression Pool Scrubbing	not credited	RG 1.183, RGP A.3.5
Long-Term Suppression Pool Water pH	>7.0	RG 1.183, RGP A.2 JAF-CALC-19-0003, Rev. 0 (Ref. 9.3)
Fraction of Iodine in ESF Leakage that becomes Airborne	0.10	RG 1.183, RGP A.5.5 GE-NE-T2300766-00-01, Rev. 0, Appendix A (Ref. 9.10) gives the peak post-accident suppression pool temperature of 196.3 ºF at 9.8 hours which is <212ºF allowing a release fraction of 0.10 Per RG 1.183.
Chemical Form of Iodine in ESF Leakage		
Elemental Organic	97% 3%	RG 1.183, RGP A.5.6
Fraction of Reactor Building Available for ESF Leakage Mixing	0.5	RG 1.183, Appendix A, RGP A.4.4 (see above discussion)
Percentage of ESF Leakage that is filtered by the SGTS	0% (during 17.2-minute drawdown period – 20-minutes used in analysis) 100% (following 20-minute drawdown period)	Based on Drawdown Calc. JAF-CALC-19-0001, Rev. 0 (Ref. 9.17)
MSIV Leakage Model Parameters		
Total MSIV Leak Rate Through All Four Lines	270 scfh @ 45.0 psi	Assumed total leak rate DBA design pressure for LOCA P_A = 45 psig (TS 5.5.6, Primary Containment Leakage Rate Test Program)

Design Input Parameter	Value Assigned	Reference
MSIV Leak Rate Through One Line with MSIV Failed	135 scfh @ 45.0 psi	Assumed leak rate DBA design pressure for LOCA P_A = 45 psig (TS 5.5.6, Primary Containment Leakage Rate Test Program)
MSIV Leak Rate Through Intact Line	135 scfh @ 45.0 psi	Assumed leak rate DBA design pressure for LOCA P_A = 45 psig (TS 5.5.6, Primary Containment Leakage Rate Test Program)
MS Piping Parameters Diameter Wall Thickness	 24” 1.219”	JAF-SPEC-MISC-00334 Rev. 15 (Ref. 9.25) FP-27B, Schedule 80 (Ref. 9.22) Crane 410 (Ref. 9.26), page B-19
Corrosion Allowance for Steam Line	0.12”	Assumed
Main Steam Line seismic boundary	The main steam lines have been seismically analyzed up to the TSVs	12966.41, Problem 772, Rev. 0 12966.41, Problem 631, Rev. 1 MSK-127A1, Rev. 13 MSK-127B1, Rev. 10 MSK-127C1, Rev. 13 MSK-127D1, Rev. 7 MSK-127E1, Rev. 5 (Ref. 9.62)
Main Steam Line Data		See Section 7.4.3 and Attachment 12.14 for MSL lengths and volumes
Control Room Model Parameters		
CR Pressure Boundary Envelope Free Volume	116,640 ft^3 (101,000 ft^3 used in analysis to maintain consistency with previous calculations)	DBD-070, (Ref. 9.27), page 2-17, gives a gross volume of 145,800 ft^3 Calculation 11825-70-3 (Ref. 9.29) gives a volume of 145,800 ft^3 The net air volume is assumed to equal 80% of this volume, or 116,640 ft^3.
CREVAS Filtration System Actuation Time Following a LOCA	30 minutes	OP-JF-102-106 (Ref. 9.28), TCA-03, gives the isolation time as 30-minutes AOP-39 (LOCA) Step D.3 (Rev. 9.33) has immediate action D.3 to isolate the Control Room, per Section G of OP-55B, within 30 minutes. Steps D.2.9 and G.1.5 of OP-55B (Ref. 9.34) requires manual closure of 70DMPR-105 and Control Room isolation within 30-minutes.
CR Normal Operation Outside Air Intake through manual damper 70DMPR-105	1,920 cfm +10% = 2,112 cfm used in analysis	DBD-070, page 2-28 (Ref. 9.27) JAF-CALC-RAD-04410 (Ref. 9.35) Approximately equivalent to one room volume change per hour
CR Normal Operation Exhaust Flow	1,120 cfm +10% = 1,232 cfm used in analysis	DBD-070, page 2-17 (Ref. 9.27)

CR Normal Operation Leakage Flow	800 cfm +10% = 880 cfm used in analysis	DBD-070, page 2-28 (Ref. 9.27) Note: The total leakage flow modeled in RADTRAD is assumed equal to the normal operation exhaust flow plus the normal operation leakage flow (1,232 cfm + 880 cfm = 2,112 cfm) to maintain a mass balance in the Control Room.
CR Emergency Ventilation Mode Filtered Air Intake Rate	1,000 cfm ±10% 900 cfm used in analysis	FB-35C (Ref. 9.30) TS 5.5.8.b (Ref. 9.5) Ventilation test program allows +/- 10%. The lower filtered intake flow maximizes the Control Room dose (see Attachment 12.13).
CR Emergency Ventilation Mode Air Recirculation Rate Though Filters	0 cfm	No recirculation filter provided P&ID FB-45A (Ref. 9.37)
CR Unfiltered Intake During Emergency Ventilation Mode - Post DMPR-105 closure	238 cfm (includes ingress/egress inleakage of 10 cfm) 300 cfm assumed in calc	JAF-CALC-CRC-04425, page 11 (Ref. 9.31) Leakage flow through MOV-108 is 238 cfm, assumed unfiltered intake of 300 cfm is conservative
Unfiltered Air Inleakage with CR Isolated and no MOV Failures in Emergency Ventilation Mode	100 cfm	Assumed inleakage of 100 cfm is conservative based on Tracer Gas Test results from TS 5.5.14 program. 2004 Tracer gas test results JAF-RPT-04-00423 (Ref. 9.38), had 0 cfm inleakage. 2011 Tracer Gas Test (Ref. 9.39) gave an inleakage of 17±4 scfm for worst case Train “B” pressurization. 2018 Tracer Gas Test (Ref. 9.40) gave an inleakage of 20±4 scfm for worst case Train “A” pressurization. AP-19.18 (Ref. 9.41), Section 8.3.3 gives the unfiltered air in-leakage limit as 100 cfm.
CR Emergency Ventilation Leakage (Exfiltration) Flow After Isolation	1,300 cfm	Assumed Leakage Flow = Isolation filtered intake flow (900 cfm) + damper leakage (300 cfm) + CR inleakage (100 cfm) The Leakage Flow is assumed equal to the total intake and infiltration during isolation mode to maintain a mass balance in the Control Room.
CREVAS Emergency Ventilation Mode Intake Charcoal and HEPA Filter Efficiencies		

Elemental Iodine	97%	New TS 5.5.8.c VFTP Penetration and Bypass <1.5% and GL 99-01 give an efficiency of 97%.
Organic Iodide	97%	See above
Particulate Aerosols	97%	TS 5.5.8.a VFTP VFTP will be revised to specify a Penetration and Bypass <1.5% and GL 99-01
CR χ/Qs For Containment & ESF Leakage Release Via SGTS Stack Release		
Time	**X/Q (sec/m^3)**	
0 - 8 hr. 8 - 24 hr. 24 - 96 hr. 96 - 720 hr.	9.26E-07 6.75E-07 3.39E-07 1.26E-07	JAF-CALC-RAD-00007, Rev. 2 (Ref. 9.14)
CR X/Qs for Containment & ESF Leakage Release before SGTS operational (RB Release)		
Time	X/Q (sec/m^3)	
0 - 2 hr. 2 - 8 hr. 8 - 24 hr. 24 - 96 hr. 96 - 720 hr	3.52E-03 3.31E-03 1.43E-03 7.73E-04 6.07E-04	JAF-CALC-RAD-04409 (Ref. 9.42)
CR X/Qs for MSIV Leakage Release (TB Release)		
Time	**X/Q (sec/m^3)**	
0 - 2 hr. 2 – 8 hr. 8 - 24 hr. 24 - 96 hr. 96 - 720 hr.	4.52E-03 3.33E-03 1.19E-03 8.27E-04 6.40E-04	JAF-CALC-19-0004 (Ref. 9.43)
CR Occupancy Factors (RG 1.183, RGP 4.2.6)		
Time (Hr)	%	
0-24 24-96 96-720	100 60 40	RG 1.183, RGP 4.2.6
CR Breathing Rate	3.5E-04 m^3/sec	RG 1.183, RGP 4.2.6
CR X/Qs For MSIV Leakage Release MSIV for External Cloud Dose		
Time (hour)	X/Q (sec/m^3)	
0 - 2 hr. 2 – 8 hr. 8 - 24 hr. 24 - 96 hr. 96 - 720 hr.	4.52E-03 3.33E-03 1.19E-03 8.27E-04*0.6 = 4.96E-04 6.40E-04*0.4 = 2.56E-04	JAF-CALC-19-0004 (Ref. 9.43) Note CR X/Qs from the Ref. 9.43 are used as the LPZ X/Qs and the 24-96 and 96-720 hr. values are adjusted by the CR occupancy factors.
Offsite Dose Receptor Release Model Parameters		
EAB X/Qs for Containment & ESF Leakage Release Via SGTS Stack Release		
Time (hrs)	X/Q (sec/m^3)	
0-720	5.24E-05	JAF-CALC-RAD-00007, Rev. 2 (Ref. 9.14)

EAB X/Q for MSIV Leakage Release (TB Release)		
Time (hrs)	**X/Q (sec/m^3)**	
0-720	1.79E-04	JAF-CALC-RAD-00007, Rev. 2 (Ref. 9.14)
EAB Breathing Rate	3.5E-04 m^3/sec	Ref. 9.1, RGP 4.1.3
LPZ X/Qs For Containment & ESF Leakage Release Via SGTS Stack Release		
Time (hrs)	**X/Q (sec/m^3)**	
0 - 4 hr. 4 - 8 hr. 8 – 24 hr. 24 - 96 hr. 96 - 720 hr	2.04E-05 2.17E-06 9.53E-07 3.90E-07 1.08E-07	JAF-CALC-RAD-00007, Rev. 2 (Ref. 9.14)
LPZ X/Qs For MSIV Leakage Release (TB Release)		
Time (hrs)	**X/Q (sec/m^3)**	
0 - 8 hr. 8 – 24 hr. 24 - 96 hr. 96 - 720 h	2.00E-05 1.34E-05 5.59E-06 1.60E-06	JAF-CALC-RAD-00007, Rev. 2 (Ref. 9.14)
LPZ Breathing Rates		
Time (hrs)	**BR (m^3/sec)**	
0-8 8-24 24-720	3.5E-04 1.8E-04 2.3E-04	RG 1.183, RGP 4.1.3 (Ref. 9.1)

6. COMPUTER CODES

Computer Codes

All computer codes used in this calculation have been approved for use with appropriate Verification and Validation (V&V) documentation. Computer codes used in this analysis include:

RADTRAD (Refs. 9.16, 9.46 & 9.47): This is an NRC-sponsored code approved for use in determining control room and offsite doses from releases due to reactor accidents. EXELON performed in-house V & V of RADTRAD 3.03 code (Ref. 9.47). RADTRAD also has been approved and documented by Enercon Services, Inc., RADTRAD Computer Software Acceptance (Ref. 9.46). For this calculation, all 18 error notices posted to the RADTRAD Industry Users Group's website (radtrad.com) were reviewed as documented in Attachment 12.2. The input files were executed on the listed computer that is part of the validation and verification package for RADTRAD. Input files for RADTRAD, Version 3.03 were run on machine LAP7-219-MM located in the ENERCON office in Kennesaw Georgia.

MicroShield (Ref. 9.48): A commercially available and accepted code used to determine dose rates at various source-receptor combinations. MicroShield, Version 10.04 is approved for use in this calculation and has been approved and documented by Enercon Services, Inc., MicroShield Computer Software Acceptance (Ref. 9.48). The input files were executed on the listed computer that is part of the validation and verification package for RADTRAD. Input files for MicroShield, Version 10.04 were run on machine LAP7-219-MM located in the ENERCON office in Kennesaw Georgia.

7. CALCULATIONS

7.1 JAF Plant Specific Nuclide Inventory File (NIF) and Other General RADTRAD 3.03 Input Files

The RADTRAD Nuclide Inventory File (NIF) is based on the isotopic activities given in Table 1. The CAVEX activities in this table are based on a rated thermal power level of 2,536 MWt. The power level used in the RADTRAD input is 2,586.7 MWt (= 102% of 2,536 MWt rated thermal power). The CAVEX inventory is the max of all cases for beginning of cycle (BOC) and end-of-cycle (EOC) as provided in Reference 9.4. The RADTRAD Nuclide Inventory File (NIF) JAFLOCA.nif is used for the containment, ESF, and MSIV leakage paths with the radionuclide activity in Ci/MW_t for the reactor core source term.

The Release Fraction and Timing (RFT) File “bwr_dba.rft” is used in the analysis to define the release fractions and release timing post-accident for the LOCA. The RFT file used is the RADTRAD default file consistent with RG 1.183 release fractions and timing.

The dose conversion factor file, “fgr11&12.inp”, used as RADTRAD input is the standard RADTRAD input based on Federal Guidance Reports (FGR) 11 & 12 (Ref. 9.54 and 9.55, respectively).

7.2 Spray Removal

Following a large break LOCA, the containment pressure will reach a maximum very early in the event sequence. Emergency Operating Procedures (EOPs) will be entered to start carrying out actions to protect the reactor core. At the same time, the AST accident sequence begins with fuel cladding failure starting at 2 minutes per RG 1.183. In the AST scenario, fuel damage progressively worsens due the assumed inability to cool the reactor core, which is beyond the design basis requirements for the Emergency Core Cooling System (ECCS). As such, it is assumed that the operators will quickly transition to the Severe Accident Operating Guidelines (SAOGs) and enter SAOG-1 (Ref. 9.19).

Following the symptoms-based procedure in SAOG-1, it is assumed that operators will enter step D, “Core debris cannot be retained in the RPV”. The preceding steps are not applicable because the RPV has not been breached and the ability to inject to the reactor core is not available at this stage in the assumed AST scenario.

For the AST accident scenario, the release associated with fuel melting begins at the start of the early-in-vessel stage at 30 minutes post-LOCA. SAOG-1 directs operators to use drywell and torus sprays if required by SAOG-2 (Ref. 9.19) for drywell temperature, primary containment pressure, primary containment radiation, primary containment hydrogen, or secondary containment radiation control if the entry conditions are satisfied, including drywell/suppression pool chamber pressure greater than 0 psig. The entry conditions to spray via SAOG-2 will be satisfied within minutes of this event. Both the pressure and radiation will exceed SAOG thresholds within minutes.

The radiation-based entry condition for drywell spray is before a drywell radiation level reaches 250,000 R/hr (Ref. 9.19). The entry condition for temperature is before the drywell temperature reaches 309ºF (Ref. 9.19). Initiation of drywell sprays is also required if the torus pressure reaches 15 psig (Ref. 9.19). Therefore, drywell spray entry conditions will be met for pressure, temperature, and radiation within minutes of the LOCA, however it is conservatively assumed that the drywell spray is manually started 20 minutes after onset of a LOCA (Section 5.2). The sprays may be terminated due to low drywell pressure. The termination criteria for sprays are specified in both SAOG-1 and SAOG-2 as “before drywell pressure drops to 0 psig.” The long-term NPSH evaluation given in reference 9.10 shows that the pressure in the drywell is still above 21 psia at 22 hours.

In summary, the above discussion provides justification for the assumed operation of drywell spray at 20 minutes with the spray continuing to operate for at least 4.0 hours after initiation in accordance with the SAOG-2 action levels.

Standard review Plan 6.5.2 also states that the minimum particulate aerosol removal coefficient should be reduced by a factor of 10 when a DF of 50 is reached. Although, the elemental iodine removal coefficient is considerably higher than the particulate aerosol removal coefficient based on a review of the equations in Standard Review Plan 6.5.2, the elemental iodine removal coefficient is conservatively assumed to be the same as the particulate aerosol removal coefficient.

The iodine decontamination factor, DF, is defined as the maximum iodine concentration in the containment atmosphere divided by the concentration of iodine in the containment atmosphere at some time after decontamination (Ref. 9.9, Section III.4.D). The effectiveness of the spray in removing elemental iodine is presumed to end when the maximum elemental iodine DF of 200 is reached. Because the removal mechanisms for particulate iodines are significantly different from and slower than the mechanisms for elemental iodine, there is no need to limit the DF for particulate iodines (Ref. 9.9, Section III.4.D).

The first order removal coefficient for particulate aerosols can be determined by the following equation from Standard Review Plan 6.5.2 (Reference 9.9, Section III.4.C.iv, page 6.5.2-13):

$$\lambda_p = \frac{3hFE}{2VD}$$

where,

λ_p = particulate aerosol removal coefficient by spray wash-out

h = spray drop fall height

F = spray flow

E/D = ratio of a dimensionless collection efficiency I to the average spray drop diameter (D)

V = containment building net free volume

SRP 6.5.2 states that “since the removal of particulate aerosol material chiefly depends on the relative sizes of the particles and the spray drops, it is convenient to combine parameters that cannot be known. It is conservative to assume E/D to be 10 per meter initially (i.e., 1% efficiency for spray drops of 1 millimeter in diameter), changing abruptly to 1 spray drop per meter after the particulate aerosol mass has been depleted by a factor of 50 (i.e., 98% of the suspended mass is 10 times more readily removed than the remaining 2%).”

Therefore, the value of DF > 50 for particulate iodines is calculated below. After the particulate DF reaches 50, the particulate removal efficiency is reduced by a factor or ten for the duration of spray operation in the dose consequence analysis. The aerosol removal coefficients are calculated as follows:

F = volume flow rate of the spray pump = 5,600 gal/min (Ref. 9.11)

F = 5,600 gal/min × 0.13368 ft^3/gal × 0.028317 m^3/ft^3 × 60 min/hr = 1271.9 m^3/hr

V = Drywell net free volume = 1.50E+05 ft^3

V = 1.50E+05 ft^3 × 0.028317 m^3/ft^3 = 4.247E+03 m^3

Elevation of Upper DW Spray Header = 311’ – 3”

Elevation of Lower DW Spray Header = 287’ – 6”

Elevation of Bottom of Drywell Floor = 256’ – 6”

Minimum Height of DW Spray h = 287’ – 6” - 256’ – 6” = 31’ × 0.3048 m/ft = 9.45 m

Solving, the particulate aerosol spray removal coefficient equation:

For DF ≤ 50:

λ_p = (3 × 9.45 m × 1271.9 m^3/hr) × (10 m^{-1}) / (2 × 4.247E+03 m^3)

λ_p = 42.45 hr^{-1} but **30.0 hr^{-1}** is conservatively used in the analysis to maintain the elemental iodine and airborne aerosol in the drywell atmosphere longer which results in more conservative doses.

For DF > 50, E/D is 1.0 m^{-1} instead of 10 m^{-1}. The removal coefficient is therefore 1/10 of the above value

λ_p = 4.225 hr^{-1} but **3.0 hr^{-1}** is conservatively used

The Containment / Drywell leakage release model in RADTRAD used to determine spray timing assumes that drywell spray elemental and particulate removal coefficients are applicable for the duration of 4 hrs (RADTRAD run JAFCL_spray_270.psf). The time dependent activities are then used to determine the time-dependent reduction in the drywell airborne elemental iodine atoms and particulate mass. As stated above, the DW spray is assumed to start 20 minutes after the onset of a LOCA. In accordance with Regulatory Guide 1.183 Appendix A Section 3.3, the maximum decontamination factor for elemental iodine is based on the iodine activity in the primary containment atmosphere when the sprays actuate divided by the activity of iodine remaining at some time after decontamination.

The iodine activity and particulate mass as a function of time are listed in Table 2. From Table 2, the aerosol inventory is reduced by a factor of 50 at approximately 2.1 hr. The removal efficiency will be reduced by a factor of ten to 3.0 hr^{-1} at this time until 4.00 hours post-accident when the DW spray is assumed to be terminated. The elemental iodine inventory is reduced by a factor of 200 at approximately 2.1 hr. However, elemental iodine removal by sprays is conservatively terminated at 2.1 hr. (to reflect the aerosol removal timing).

7.3 Containment (Drywell) Leakage

The containment leakage of 0.015 volume fraction per day (i.e., 1.5 vol%/day) is assumed and a reduction in the containment leakage after 24 hours to 50% of the maximum leakage is credited in the analysis. Based on a review of Long-Term NPSH Containment Analysis Table on page A-2 of Reference 9.10, the drywell pressure is 22.3 psia (7.6 psig) at 40,000 seconds (~11 hours) following a LOCA which is well below the maximum drywell driving pressure of 45 psig. In accordance with a modified Darcy's equation for flow through orifices (Equation 2-24 of Ref. 9.26), the volumetric flow rate is proportional to the square root of the driving pressure, so a pressure reduction of 75% leads to a flow rate reduction of 50%. Because the flow rates are based on a maximum drywell pressure of 45 psig, pressures less than approximately 11 psig lead to a 50% reduction in flow.

Per Equation 2-24 of Ref. 9.26, the flow rate is inversely proportional to the square root of the density. The maximum drywell temperature occurs earlier in the event per Figure 5-2 of Reference 9.10, but the calculated flow rates are already based on the highest temperature (lowest density) so no credit is taken for the effect of reduced volumetric flow due to increased density. Therefore, the flow rates are reduced to half of the maximum flow rates at 24 hours following the event.

7.4 Determination of MSIV Leak Rates

The total MSIV leakage from all main steam lines is 270 scfh at 45 psig, allowing a maximum of 135 scfh from any one of the 4 main steam lines and 135 scfh total from the other 3 main steam lines. The MSIV leakage is converted using the Ideal Gas Law to determine the actual leakage (cfh) using the post-LOCA peak temperature and pressure. Because the actual MSIV leak rate is reduced at the accident condition due to the combined effects of compression (due to the high pressure) and expansion (due to the high temperature), the increase in the MSIV leak rates to the environment from the outboard MSIVs are conservatively calculated using the Ideal Gas Law. The MSIV leak rates are listed in Table 3a. To account for the assumed mixing between the wetwell and drywell at 2 hours and the resulting activity dilution, the flow rate through the MSIVs is reduced by the ratio of the drywell volume to the total volume at two hours. This leak rate reduction is conservatively not credited for aerosol deposition.

7.4.1 MSIV Leakage from RPV to the volume between the outboard MSIV and the TSV

MSIV Leakage During 0-2 hrs

Total MSIV leakage measured @ 45.0 psig = 270 scfh (assumed)

Per the ideal gas law, PV= nRT or PV/T = nR

Given that nR is a constant for the air leakage, PV/T at post-LOCA conditions is equal to PV/T at STP conditions.

P @LOCA = Drywell peak pressure = 45.0 psig (Ref. 9.5)

T @LOCA = Drywell peak temperature = 326ºF (Ref. 9.10) = 326 ºF + 460 = 786ºR

P @STP = Standard pressure = 14.7 psia

T @STP = Standard temperature = 68˚F = 68˚F + 460 = 528˚R

V @STP = Total MSIV leakage based @ 45.0 psig = 270 scfh

V @LOCA = (PV/T @STP) x (T/P @LOCA)

0-2 hrs MSIV total leakage (270 scfh) @ drywell peak pressure of 45.0 and temperature of 326˚F

= 270 scfh x [14.7 psia / (45.0 psig + 14.7 psia)] x [786˚R / 528˚R]

= 98.97 cfh = 1.649 cfm

The 0-2 hrs 270 scfh MSIV leakage is released via the four Main Steam (MS) lines. A maximum allowable leak rate of 135 scfh is postulated from MS Line “B” with its failed MSIV. A maximum allowable leak rate of 135 scfh is postulated from the remaining MS Lines.

0-2 hrs allowable leakage from MS Line “B” with failed MSIV

= (135 scfh / 270 scfh total) x 1.649 cfm = 0.825 cfm

0-2 hrs allowable leakage from the intact MS Lines

= (135 scfh / 270 scfh total) x 1.649 cfm = 0.825 cfm

MSIV Leakage During 2-24 hrs

Two hours after a LOCA the drywell and suppression chamber volumes are expected to reach an equilibrium condition and the post-LOCA activity is expected to be homogeneously distributed between these volumes. The homogeneous mixing in the primary containment will decrease the activity concentration and therefore decrease the activity release rate through the MSIVs. To model the effect of this mixing, the MSIV flow rate used in the RADTRAD model is decreased by calculating a new leak rate based on the combined volumes of the drywell and suppression chamber.

Drywell volume = 1.50E+05 ft^3 (see Section 5.2)

Suppression chamber volume = 1.09E+05 ft^3 (see Section 5.2)

Drywell + Suppression Chamber free air volume = 2.59E+05 ft^3

2-24 hrs total MSIV leakage @ drywell peak pressure = 98.97 cfh (per above)

Corresponding MSIV leak rate = 1.649 cfm x (1.50E+05 ft^3 / 2.59E+05 ft^3) = 0.955 cfm

2-24 hrs allowable leakage from MS Line “B” with failed MSIV

= (135 scfh / 270 scfh total) x 0.955 cfm = 0.478 cfm

2-24 hrs allowable leakage from intact MS Line “C”

= (135 scfh / 270 scfh total) x 0.955 cfm = 0.478 cfm

Note: the above calculation uses the assumed drywell volume (150,000 ft^3) instead of the actual drywell volume (154,476 ft^3) which results in a smaller calculated leak rate after mixing of the drywell and suppression chamber volumes. However, if the actual drywell volume is used in determining the leak rate and the actual volume is used for the drywell volume in the RADTRAD model, the calculated control room dose for the main steam pathway is reduced (from 3.41 rem TEDE to 3.36 rem TEDE). So, the above calculation, using the assumed drywell volume, produces conservative results.

MSIV Leakage for 1-30 days

The leakage between 1 to 30 days is taken as half of the leakage between 2-24 hours.

1-30 days allowable leakage from MS Line "B" with failed MSIV

= 0.478 cfm / 2 = 0.239 cfm

1-30 days allowable leakage from each intact MS Line

= 0.478 cfm / 2 = 0.239 cfm

7.4.2 Leakage to Environment through the TSVs

The steam trapped between the outboard MSIV and the TSV in the "failed" MSL will initially be at a high pressure and temperature. Likewise, the volume between the MSIVs and between the outboard MSIV and the TSV for the other three intact lines will be at high temperature and pressure at the onset of a LOCA. The MSLs are well insulated to retain heat during normal operations. After the onset of the LOCA and automatic isolation of the MSIVs and TSVs, the steam line spools between the MSIVs and between the MSIVs and the TSVs will be at a considerably higher pressure than the steam upstream of the inboard MSIV and the atmosphere downstream of the TSVs. This extremely high positive pressure gradient across the MSIVs will prevent the MSIV leakage from migrating through the pipe spool between the MSIVs. To the contrary, the steam content in the pipe spool will leak out until a negative pressure gradient is established across the inboard and outboard MSIV due to condensation of the steam in the spool. The time to establish the negative pressure gradient is considerably long. However, for this analysis, it is conservatively assumed that the steam in the spool immediately cools down to atmospheric conditions, thereby establishing a negative pressure gradient across the intact inboard and outboard MSIVs.

It is assumed that the post-LOCA activity released in the MSL with the failed inboard MSIV is instantaneously and homogeneously distributed in the single volume of MSL between the RPV nozzle and the outboard MSIV (well mixed volume). The MSIV leakage from the volume between the outboard MSIV and the TSV expands to the atmospheric condition as follows:

0-2 hrs release to environment MS Line "B" with failed MSIV

Upstream of TSV:

V1 = 98.97 cfh *135/270 = 49.485 cfh

P1 = 45 psig + 14.7 = 59.7 psia

T1 = (326°F + 460) = 786°R

Downstream of TSV (Atmospheric Condition):

V2 = TBD

P2 = 14.7 psia

T2 = (68°F + 460) = 528°R

MSIV Leakage to Environment from MSIV Failed Line (MS Line "B"):

V2 = (PV/T @upstream volume) x (T/P @ atmospheric conditions)

= (59.7 psia x 49.485 cfh / 786°R) x (528°R / 14.7 psia)

= 135 cfh = 2.25 cfm

This is as expected, given that the 49.485 cfh leakage rate is equivalent to 135 scfh upstream of the outboard MSIV, and therefore it is equivalent to 135 cfh downstream of the TSV in the presence of standard pressure and temperature atmospheric conditions.

0-2 hrs release to environment intact MSL "C"

Upstream of TSV in intact MS Lines

V1 = 98.97 cfh *135/270 = 49.485 cfh

P1 = 45 psig + 14.7 = 59.7 psia

T1 = (326°F + 460) = 786°R

Downstream of TSV (assumed Atmospheric Condition):

V2 = TBD

P2 = 14.7 psia

T2 = (68°F + 460) = 528°R

MSIV Leakage to environment – steam line "C":

V2 = (PV/T @1) x (T/P @2)

= (59.7 psia x 49.485 cfh / 786°R) x (528°R / 14.7 psia)

= 135 cfh = 2.25 cfm

2-24 hr MSIV leakages to Environment

Two hours after a LOCA the drywell and suppression chamber volumes are expected to reach an equilibrium condition and the post-LOCA activity is expected to be homogeneously distributed between these volumes. Therefore, the leak rates based on the activity in the drywell are not applicable during this period. To simulate this mixing, the leakage rate is reduced by the fractional distribution of activity into the drywell and suppression chamber volumes. This results in a reduction in the 0-2 hr MSIV leakages to the environment by the ratio of the drywell volume to the combined drywell plus suppression volume:

2-24 hrs MSIV leakage release to environment from MSL "B" with failed MSIV

= 135 cfh x (1.50E+05 ft^3 / 2.59E+05 ft^3) = 78.19 cfh = 1.303 cfm

2-24 hrs MSIV leakage release to environment from intact MSL

= 135 cfh x (1.50E+05 ft^3 / 2.59E+05 ft^3) = 78.19 cfh = 1.303 cfm

1 to 30-day MSIV leakages to Environment

The leakage between 1 to 30 days is taken as half of the leakage between 2-24 hours.

2-24 hrs MSIV leakage release to environment from MSL "B" with failed MSIV

= 1.303 cfm / 2 = 0.652 cfm

2-24 hrs MSIV leakage release to environment from each intact MSL

= 1.303 cfm / 2 = 0.652 cfm

7.5 MSIV Leakage

The four main steam lines, which penetrate the primary containment, are automatically isolated by the MSIVs in the event of a LOCA. There are two MSIVs on each steam line, one inside containment (called an Inboard MSIV) and one outside containment (called an Outboard MSIV). The MSIVs are functionally part of the primary containment boundary and design leakage through these valves

provides release pathways for fission products that bypass the secondary containment and enter the environment as a ground-level release. The MSIVs are postulated to leak at a total design leak rate of 270 scfh. The radiological dose consequences due to postulated MSIV leakage are analyzed and combined with the dose consequences from other post-LOCA sources to determine the total post-LOCA dose.

7.5.1 Main Steam Line Removal by Deposition

The "MSIV failed" line means that the inboard MSIV in one of the shortest MSLs fails to close and remains open during the accident, which instantly extends the well mixed volume boundary from the RPV nozzle to the outboard MSIV. This MSIV failure complies with a single active component failure requirement that results in the most limiting radiological consequences (RG 1.183, Section 5.1.2). All MSLs in the MSIV leakage release pathways are seismically designed and supported to withstand the Safe Shutdown Earthquake (SSE) and thereby comply with the RG 1.183, Appendix A, Section 6.5 requirement. Because the MSLs remain intact, the horizontal pipe surface area is credited for the aerosol deposition and volume for dilution in the MSL upstream of the inboard MSIV that failed to close.

All four MSL headers are Seismic Class I and QA Category I from the RPV Nozzle to the seismic boundary break at the TSV (see Ref. 9.62). Therefore, they are qualified to withstand the SSE which complies with the RG 1.183, Appendix A, Section 6.5 requirement to be credited for aerosol deposition. Deposition credit in the outboard section of the MSL (between the outboard MSIV and the TSV) is determined in the same manner as the inboard section. A total of 270 scfh MSIV leakage is assumed to occur in the following manner:

- MSL with failed MSIV – MSL "B" flow of 135 scfh [Pathway 8 in Figure 4]
    - Horizontal piping surface area and volume of the MSL upstream of outboard MSIV are credited for aerosol deposition. One well-mixed volume (V_1) is between the RPV Nozzle and outboard MSIV.
    - Horizontal piping surface area and volume of the MSL between the outboard MSIV and TSV are credited for aerosol deposition. A second well-mixed volume (V_2) is between the outboard MSIV and TSV.
    - The airborne elemental iodine in this release path is assumed to be adsorbed on the entire MSL surface area.
    - No credit is taken for a holdup time in the MSIV failed MSL.
- Intact MSL - Second shortest main steam line (MSL "C") [Pathway 11 in Figure 4]
    - Horizontal piping surface area and volume of the MSL between the RPV Nozzle and inboard MSIV are credited for aerosol deposition. One well-mixed volume (V_3) is modeled between the RPV Nozzle and inboard MSIV.
    - Horizontal piping surface area and volume of the MSL between the inboard MSIV and TSV are credited for aerosol deposition. A second well-mixed volume (V_4) represents the volume between the inboard MSIV and TSV.
    - The airborne elemental iodine in this release path is assumed to be adsorbed on the entire MSL surface area.
    - No credit is taken for a holdup time in the intact MSLs.

The following JAF plant-specific design inputs are considered in a reasonably conservative manner for the MSIV leakage path:

1. Use of the 20-Group probabilistic distribution of aerosol settling velocity
2. Crediting aerosol deposition in the main steam piping (MSP) upstream of the outboard MSIV
3. Crediting aerosol deposition in MSP beyond the outboard MSIVs to the TSVs
4. Crediting time-dependent elemental iodine removal

Use of the 20-Group distribution methodology has been previously approved by the NRC in the Clinton (Ref. 9.81), LaSalle (Ref. 9.82), and Limerick (Ref. 9.83) applications of the AST methodology.

The review of various NRC AST Safety Evaluation Reports (SERs) indicated the following concerns:

1. Based on the characteristics used in AEB-98-03 (Ref. 9.8) and without additional information, the NRC staff is concerned with how much deposition (i.e., what settling velocity value) is appropriate. The use of AEB-98-03 is acceptable to the NRC in accordance with RIS 2006-04 (Ref. 9.74), provided these concerns are addressed.

2. Gravitational settling would be expected to be at a lesser rate for the later sections of piping and at later times considering that the larger and heavier aerosols would have already settled out of the main steam lines in upstream sections of piping.

The NRC concern is with the selection of a value of an aerosol settling velocity, which is appropriate for removal of the aerosol particles having a wide range of particle sizes and weights. It means that a single value of settling velocity needs to be selected such that it covers the settling velocity range of 0.00021 m/s (10^{th} percentile) through 0.00148 m/s (60^{th} percentile) given AEB 98-03, Table A-1.

In response to this NRC concern, this analysis implements a 20-group probabilistic settling velocity distribution rather than using a single, median value, model from AEB-98-03, Table A-1 (Ref. 9.8). The same settling velocity probability distribution function shown in Equation (5) of AEB 98-03 is used to conservatively calculate aerosol settling velocity as follows:

$$u_s = \frac{\rho \cdot d_e^2 \cdot g \cdot C_s}{18 \cdot \mu \cdot k}$$

where:

u_s = settling velocity (cm/sec)

ρ = particle density (g/cm^3)

d_e = particle diameter (cm)

g = gravitational acceleration (cm/sec^2)

C_s = Cunningham Slip Factor (dimensionless)

μ = viscosity (g/cm-sec)

k = shape factor (dimensionless)

As stated in AEB-98-03, this equation is conservative because it does not consider such phenomena as thermophoresis, diffusiophoresis, flow irregularities, and hygroscopicity, which would all serve to increase the rate of aerosol deposition and settling velocity. As applied in this analysis, the settling velocity distribution is a function of this equation evaluated over a randomly sampled range of the three (3) critical aerosol parameters, density/weight (logarithmically distributed), diameter/size (uniformly distributed), and shape (uniformly distributed); and three (3) constants; gravitational acceleration, Cunningham slip factor, and viscosity. The range of each particle parameter is discussed and given in AEB-98-03. A spreadsheet was developed to perform this random sampling, using 10,000 randomly generated histories to ultimately generate a settling velocity distribution. Each of the 10,000 calculated settling velocities was given a probability of 1/10,000th, thereby making the cumulative fraction total equal 1. A conservative 20-group step function was developed to approximate the continuous settling velocity distribution function calculated from the 10,000 histories. To ensure conservatism, this step-wise representation of the maximum settling velocity of a group is

never allowed to exceed the value that defines the continuous probability curve.

Using equations (2) & (3) of AEB-98-03 and the settling velocity, settling area, volumetric flow rate, and volume of the well-mixed region being modeled, the aerosol particulate release fractions (RFs) are calculated for each pipe volume.

$$\eta_{filt} = 1 - \frac{C}{C_{in}} = 1 - \frac{1}{1 + \frac{u_s * A}{Q}}$$

where:

u_s = settling velocity (cm/sec)

A = settling area (cm^2)

C = concentration of nuclides in well-mixed volume (cm^{-3})

C_{in} = initial concentration of nuclides in well-mixed volume (cm^{-3})

Q = volumetric flow rate into well-mixed volume (cm^3/sec)

η_{filt} = filter efficiency

For each of the 20 groups, aerosol particulate RFs for each node or volume are calculated and then converted to removal efficiencies (REs) by subtracting them from 1. The set of 20 removal efficiencies, calculated for each volume, is combined to form a set of 20 Net Release Fractions (NRFs) for a given MSL. The NRF associated with a given group is the product of the RF for each volume, or node, and the probability associated with that specific settling velocity group. The set of 20 NRFs is summed, and subtracted from 1, to calculate a total effective aerosol removal efficiency (TEARE) as shown in Table 4 for input to the RADTRAD code. This is performed for each MSL segment being modeled.

By implementing a conservative, semi-continuous, probability-weighted 20-group step function to simulate the varied population of particulates in a given MSL volume, as opposed to a single median value, this model accounts for the uneven settling of “easier to remove particles” versus “difficult to remove particles”. To transparently illustrate this, the settling velocity probability distribution exiting each volume or node can be re-calculated and compared to the initial distribution. The probability distribution successively shifts “weight” from the “easier to remove particles” when entering the piping, to the “difficult to remove particles” as flow moves through the MSL. When the activity finally exits the system, the re-calculated probability distribution indicates a much more likely chance of seeing “difficult to remove particles” than was the case when entering the system. As shown in Table 4A, the spreadsheet individually re-calculates the probability distribution exiting MSL B & MSL C for illustration purposes. Because multiplication is the only affected mathematical operation in this model, and considering that multiplication is commutative and distributive, it is not necessary to individually re-calculate the distribution after each node or volume; by applying just the initial probability distribution to the calculation of the NRF, the changing distribution through the system is accounted for. Recalculating each distribution exiting a node or volume, then using that to calculate the distribution entering the next node or volume, yields the same TEARE as that calculated in Table 4. Therefore, one TEARE is applied to the entire MSIV release pathway. The TEARE is applied to the pathway between the two MSL volumes in the RADTRAD model. This conservative aerosol deposition treatment and the significant residual conservatism mentioned in the original AEB-98-03 conclusions quoted above, offset any uncertainty in the AEB-98-03 model.

The effective aerosol removal efficiencies and aerosol removal rate constants (aerosol removal lambdas, λ_s), are calculated in Table 4A-1 for the MSL B & C inboard and outboard piping segments.

The removal lambdas are determined using equation (3) and (4) of AEB 98-03 where η_{filt} is the filter efficiency.

$$\eta_{filt} = 1 - \frac{1}{1+\frac{\lambda_s * V}{Q}}$$

The RADTRAD file JAFMS_270.psf is modified using the effective aerosol removal efficiencies and lambdas from Table 4A-1 to calculate the resulting dose consequences listed in Table 4B and compared with the results using the 20-group TEARE. The comparison in Table 4B shows that the resulting dose consequences using the aerosol removal efficiencies and lambdas are essentially the same as those in this analysis and their use results in inconsequential changes in dose consequences.

The 20-group step function simulates a varied population of aerosols having uneven settling of the heavier & larger particles versus the lighter & smaller particles. The settling velocity probability distribution shifts from the “heavier & larger particles” when entering the MSL piping to the “lighter & smaller particles” when moving through the MSL. The settling velocity probabilistic distributions are calculated in Table 4A-2 for MSLs B & C for Node 1 (entry node), Node 2 (piping node) and exit node (outboard of the TSV). These settling velocity probabilities, plotted in Figures 5 and 6, show that the settling velocity probability distribution shifts from the “heavier & larger particles” when entering the entry node (1st Node) to the “lighter & smaller particles” when exiting from the MSL.

7.5.2 Crediting Deposition in MSL Upstream of Failed Inboard MSIV

The “MSIV failed” line means that the inboard MSIV in one of the shortest MSLs is assumed to fail to close and remains open during the accident, which instantly extends the well mixed volume boundary from the RPV nozzle to the outboard MSIV. A breach in the structural integrity of the MSL or the MSIV is not implied by this “assumed” failure. The MSL and the MSIVs continue to perform their intended safety related function of maintaining the reactor pressure boundary during and following a LOCA. This MSIV failure complies with a single active component failure requirement that results in the most limiting radiological consequences (RG 1.183, Section 5.1.2). All MSLs in the MSIV leakage release pathways are seismically designed and supported to withstand a Safe Shutdown Earthquake (SSE) and therefore comply with RG 1.183, Appendix A, Section 6.5. Consequently, the horizontal pipe surface area is credited for aerosol deposition and a volume for dilution in the MSL upstream of the inboard MSIV that failed to close. Postulating the MSL break upstream of the inboard MSIV during a LOCA is considered a different design basis accident (a main steam line break inside the containment) which is neither credible nor feasible based on the qualification of the MSLs.

The aerosol deposition model uses the piping surface area and volume inboard of the outboard MSIV to calculate the aerosol removal efficiency in one well-mixed volume of the MSL with the assumed failed MSIV.

7.5.3 Evaporation of Aerosols Deposited in Inboard MSL Piping:

The inboard piping is connected to the RPV and is the same temperature as the RPV dome prior to reactor vessel reflood. Preliminary results using the MAAP computer code for Quad Cities indicates that the temperatures in the RPV head may briefly spike over 700^0F but then fall below 600^0F. The temperature in the first MSL node may also exceed 600^0F in some cases for short duration, but generally stays below 600^0F. In the worst case, the temperature transient in the inboard piping would last less than an hour which could potentially impact the aerosol physics and plateout mechanism, which may affect the aerosol removal credited in the analysis.

A potential concern is the plated-out aerosol on the inboard MSL pipe surface evaporating and becoming airborne due to thermal effects. Therefore, the evaporation of CsI is qualitatively assessed

in this section because it represents 95% of the total core iodine release.

As stated previously, the MAAP preliminary results support max steam line temperature ≤ 600^0F. This result is also supported by J.E. Cline (Reference 9.50). Di Lemma et al suggests the vaporization threshold is >1,100^0K (>1,456^0F) for CsI (Ref. 9.80, Section 4.2).

Metcalf conservatively estimated the piping steel temperature rise = 0.5^0F/hr (Ref. 9.79, Section 3.2.2). A bounding temperature rise during the accident period of 720 hr would be 720 hrs* 0.5^0 F/hr = 360^0F.

The highest temperature of CsI = 600^0F+360^0F = 960^0F, which is considerably less than 1,456^0F.

It is to be noted here that the maximum temperature calculated above is based on a continual temperature rise for 720 hrs. and does not consider core reflooding which would reduce the temperatures.

The above qualitative conservative assessment indicates that the temperature in the inboard MSL piping is not likely to reach the threshold temperature for evaporation of CsI. Because the post-LOCA condition in the inboard MSL piping does not support the evaporation of the aerosols plated out on the piping surface, aerosol removal in the inboard MSL piping is credited in the analysis.

7.5.4 Crediting Deposition in MSLs beyond the Outboard MSVs

All four main steam lines are Seismic I and QA Cat I from the RPV Nozzle to the seismic boundary break at the TSV. Therefore, they are qualified to withstand a SSE and therefore comply with the RG 1.183, Appendix A, Section 6.5 requirement to be credited for aerosol deposition. Consequently, the MSIV leakage pathway boundary is extended up to the TSV.

7.5.5 Elemental Iodine Deposition on Horizontal Pipe Surface

Gaseous iodine tends to deposit on the piping surface by chemical adsorption. Elemental iodine, being the most reactive, has the highest deposition rate. The iodine deposited on the surface undergoes both physical and chemical changes and can be re-emitted as an airborne gas (re-suspension) or permanently fixed to the surface (fixation). RG 1.183, Appendix A, Section 6.5 (Reference 9.1), indicates that the methodology given in the Cline paper (Reference 9.50) provides acceptable models for deposition of iodine on the pipe surface. This methodology is used to determine the deposition and resuspension rates of elemental iodine as follows:

d_{si} = elemental iodine vapor deposition velocity (cm/s)

$d_{si} = e^{(2809/T - 12.80\ (\pm 0.33))} = e^{(2809/T - 12.5)}$ (Ref. 9.50, page 12)

Where T = gas temperature (°K)

The elemental iodine deposition rate

$$\lambda_{ed}(hr^{-1}) = \frac{\mathbf{dsi} * \mathbf{S} * \mathbf{3600}}{\boldsymbol{V}}$$ (Ref. 9.50, page 4)

Where d_{si} = deposition velocity (m/sec)

S = surface area of deposition (m^2)

V = volume (m^3)

The steam line temperature as a function of the time is given in Reference 9.50, Figure 7, which is reproduced in this section. The equation that closely curve fits Figure 7 is shown below:

$$T(°K) = 299.7 + 265.6 * e^{-4.428*10^{-6}t}$$

where

t → time, sec.

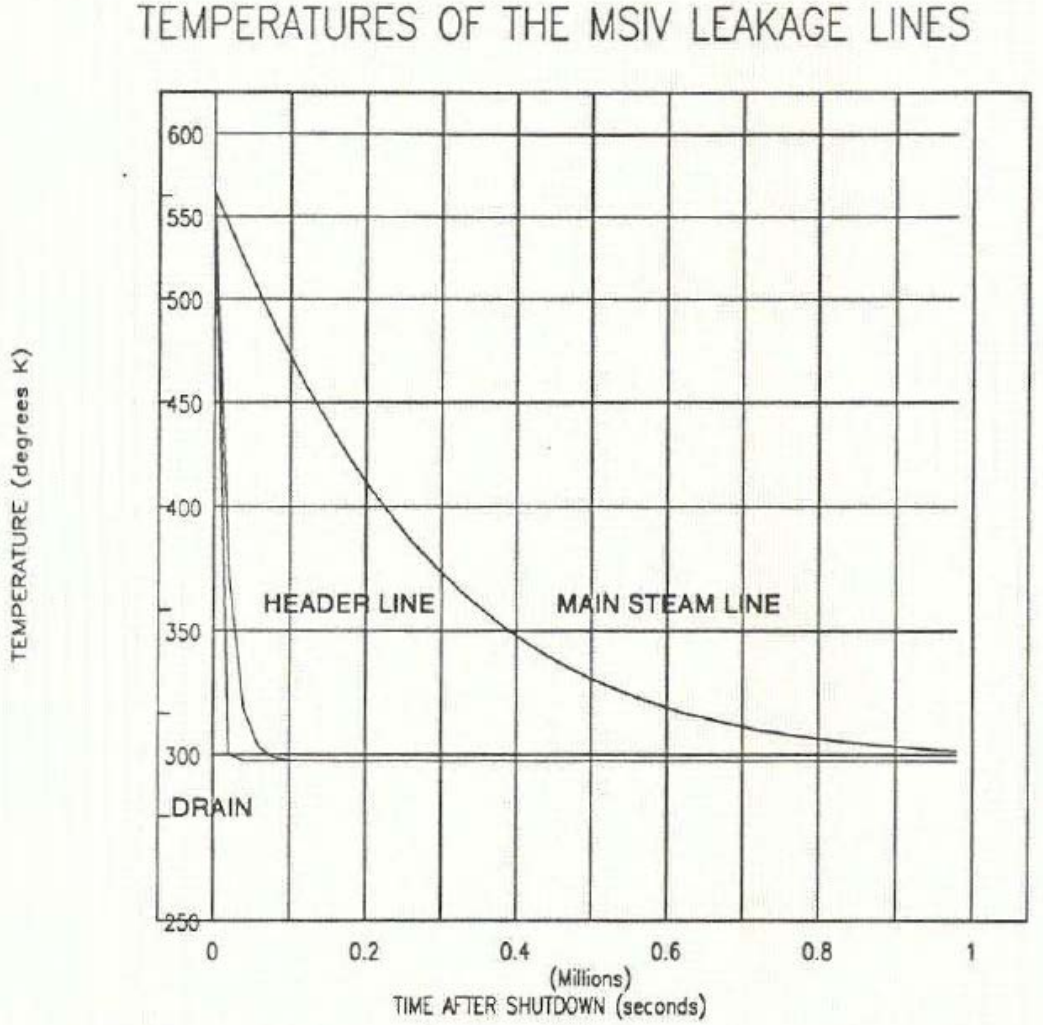

FIGURE 7. Temperature of the MSIV Leakage Pathway Piping as a Function of Time after Shutdown. The Rate of Cooling is Nearly Independent of the Flow Rate at the Low Rates Considered in the Present Analysis.

Using the above curve fit equation, the steam line temperatures at the different time intervals are calculated in Table 5 and used to calculate the elemental iodine deposition velocity (d_{si}) in Table 5C. The deposition velocity in cm/sec is converted into m/sec and elemental iodine deposition rates at various steam line temperatures are calculated in Tables 5D through 5G for various well-mixed volumes V1 through V4.

A portion of elemental iodine deposited on the pipe surface will be resuspended as an airborne gas (organic iodine). Since the CR filtration efficiencies are the same for all iodine species, the resuspension of elemental iodine will produce the same thyroid organ dose irrespective of the form of iodine.

Resuspension rate of elemental iodine (sec^{-1}) (Ref. 9.50, page 12)

$= 2.32\ (\pm 2.00) \times 10^{-5}\ e^{-600/T} = 4.32 \times 10^{-5}\ e^{-600/T}$

Resuspension rate of elemental iodine λ_{er} (hr^{-1})

$= 4.32 \times 3600 \times 10^{-5}\ e^{-600/T}$

The resuspension rates of elemental iodine at various steam line temperatures are calculated in Table 5H.

The elemental iodine removal rate (from the air via deposition, or from the pipe surface via resuspension) is related to the decontamination factor by the following equation:

Net Removal Rate of Elemental Iodine $\lambda_e = \lambda_{ed} - \lambda_{er}$

$\eta = (1\text{-}1/DF)$

$DF = \exp^{(-\lambda e * t)}$ (Ref. 9.52, Equations (2) and (5), pages 62 and 63)

Where DF = decontamination factor

η = filter efficiency for elemental iodine

λ_e = elemental iodine removal rate (hr^{-1})

t = time (hr)

Therefore, Elemental Iodine Filter Efficiency = $1 - e^{-(\lambda e * t)}$

The net amount of elemental iodine deposited on the pipe surface (i.e., net deposition efficiency) is equal to the amount of elemental iodine deposited on the pipe surface (prior to resuspension) minus the amount of elemental iodine that is resuspended from the pipe surface. The amount of elemental iodine that is resuspended from the pipe surface is equal to the product of the amount that was deposited on the pipe surface and the resuspension efficiency.

$\eta_{net\ deposition} = \eta_{\ deposition} - (\eta_{\ deposition} * \eta_{\ resuspension})$

The amount of elemental iodine deposited on the pipe surface (prior to resuspension) is the deposition efficiency as calculated using the previously described equation and the elemental iodine removal rates are calculated for each volume.

$\eta_{deposition} = 1 - e^{-(\lambda ed * t)}$

The resuspension efficiency is calculated using the previously described equation and the elemental iodine resuspension removal rates calculated in Table 5H:

$\eta_{resuspension} = 1 - e^{-(\lambda er * t)}$

Therefore, the net amount of elemental iodine deposited on the pipe surface is:

$\eta_{net\ deposition} = [1 - e^{-(\lambda ed * t)}] - \{[1 - e^{-(\lambda ed * t)}] * [1 - e^{-(\lambda er * t)}]\}$

The corresponding filter efficiencies for various steam line temperatures are calculated for each volume. The conservative values (at the beginning of each time interval) are used for each time step in RADTRAD model rather than using time interval average values for each time step. For conservatism, the elemental iodine filter efficiency is minimized by using the elemental iodine efficiency at the beginning of each time interval. The net elemental iodine deposition efficiency is given in Tables 5I through 5L and summarized in Table 5M.

7.6 ESF Leak Rates

The design basis ESF leakage is 5 gpm, which is doubled and converted into cfm as follows:

5 gallon/min × 2 × 1/7.4805 ft^3/gallon =1.337 cfm

This is modeled by the use of a filter in the release pathway to the Reactor Building with a filter efficiency of 90% for elemental and organic iodines.

7.7 SGTS and CREVAS Charcoal & HEPA Filters Efficiencies

HEPA Filter:

Proposed in-place penetration testing acceptance criteria for the safety related HEPA filters are as follows (new TS Section 5.5.8.a requirement):

SGTS Vent HEPA Filter – in-place testing penetration and bypass < 1.5%

CREVAS Intake HEPA Filter – in-place testing penetration and bypass < 1.5%

GL 99-02 (Ref. 9.6) requires a safety factor of at least 2 be used to determine the filter efficiencies to be credited in the design basis accident. From Attachment 2 of GL 99-02, the filter efficiency is:

Testing penetration and bypass (%) = (100% - η)/safety factor = (100% - η)/2

Where η = filter efficiency to be credited in the analysis

SGTS Vent HEPA Filter

1.5% = (100% - η)/2

3.0% = (100% - η)

η = 100% - 3.0% = 97%

CREVAS HEPA Filter

1.5% = (100% - η)/2

3.0% = (100% - η)

η = 100% - 3.0% = 97%

HEPA filter efficiency of 97% is credited in the analysis

Charcoal Filter:

The calculated SGTS HEPA and charcoal filter efficiencies used in this analysis are consistent with the proposed changes to JAF TS 5.5.8 and GL 99-02.

Laboratory penetration testing acceptance criteria for the safety related Charcoal filters are as follows:

SGTS Vent Charcoal Filter – in- laboratory testing methyl iodide penetration < 1.5% (Ref. 9.5 Section 5.5.8.c, proposed Technical Specification change)

CREVAS Charcoal Filter – in- laboratory testing methyl iodide penetration < 1.5% (Ref. 9.5, Section 5.5.8.c, proposed Technical Specification change)

GL 99-02 (Ref. 9.6) requires a safety factor of at least 2 should be used to determine the filter efficiencies to be credited in the design basis accident. From Attachment 2 of GL 99-02, the filter efficiency is:

Testing methyl iodide penetration (%) = (100% - η)/safety factor = (100% - η)/2

Where η = charcoal filter efficiency to be credited in the analysis

SGTS Vent Charcoal Filter

1.5% = (100% - η)/2

3% = (100% - η)

η = 100% - 3% = 97%

CREVAS Charcoal Filter

1.5% = (100% - η)/2

3% = (100% - η)

η = 100% - 3% = 97%

Safety Grade Filter	Filter Efficiency Credited (%)		
	Aerosol	Elemental	Organic
SGTS Vent	97	97	97
CREV	97	97	97

7.8 Reactor Building Shine CR Dose

The shine dose to the Control Room operator from the Reactor Building will be modeled as the dose from activity in the Reactor Building volume above the operating floor (EL. 369'6". Ref. 9.71). The activity in the Reactor building is the result of containment and ESF leakage and was obtained from RADTRAD runs "JAFCL _270.out" and "JAFESF _270.out." The Reactor Building shine to the CR personnel due to gamma radiation is attenuated by 2'-6" concrete wall and ceiling shielding (see FA-16B, Ref. 9.63). Additional attenuation by the Reactor Building wall or by intervening floors and components is conservatively not considered.

Reactor Building Parameters: (FA-2G Ref. 9.69)

Length = 151'

Width = 114'

Height = 430' – 369'-6" = 60.5'

Volume of Source = 151' x 114' x 60.5' = 1.04E+06 ft^3 (= 2.95E+10 cm^3) used in the analysis

The source volume calculated above is approximately half of the total RB volume so a dose reduction will be applied based on the ratio of the volumes assuming equal distribution of the activity. This is necessary because the entire RB activity will be used in the shielding model.

Reduction factor = 1.04e+06 ft^3/2.37E+06 ft^3 = 0.44

Distance between north side RB and south wall of CR = Distance between Columns 6 & 9

= 37' + 3'6" = 40'-6" (FA-2G Ref. 9.69 and FA-21A, Ref. 9.70)

Elevation difference between CR operator and center of RB

Elevation of CR floor = 300'

Height of center of RB above CR floor = 369'6" + 30.25' – 300' = 99.75' or 99'

Vertical distance to operator (7'-0" height of operator assumed) at elevation 300'

= 99' – 7' = 92'

The dose point is assumed to be at the Southwest corner of the Control Room at columns "9" and "C". However, for simplicity, the dose point will be conservatively assumed to be 40'-6" from the corner of the RB modeled volume.

Table 7 gives the RB isotopic activity due to containment leakage, Table 8 gives the RB

isotopic activity due to ESF leakage, and Table 9 gives the total RB isotopic activity. The RB isotopic activity from Table 9 was used as input to the MicroShield code.

720-hr CR Gamma Dose from RB Shine, with consideration of control room occupancy factors

= 9.56E-03 rem (Table 10)

which is added to other post-LOCA dose contributions in Section 8.

7.9 External Cloud Gamma Dose Attenuation Factor

The post-LOCA radioactive plume contains the radioactive sources from the containment, ESF, and MSIV leakages. The external radioactive plume shine to the CR personnel due to gamma radiation is attenuated by 2'-6" concrete wall and ceiling shielding (see FA-16B, Ref. 9.63). The RADTRAD3.03 code calculates the whole-body gamma dose based on the semi-infinite cloud immersion at the site boundary and low population zone locations. Therefore, the χ/Qs for the LPZ receptor, modeled in RADTRAD files JAFMS_270_shine.psf and JAFCL_270_shine.psf are modified by replacing them with the χ/Qs for the CR air intake location. The Control Room χ/Qs for a release from the MSIVs (Turbine Building release) are used for both the containment leakage and MSIV leakage cases for conservatism. Because the ESF leakage contributes insignificant CR dose (see Section 8), it is considered an insignificant contributor to the external cloud dose. After 24 hours the CR occupancy factors are reduced and the CR exposure to the airborne cloud shine due to the MSIV release is reduced accordingly. To calculate the impact of CR occupancy factors, the CR χ/Q values for the MSIV release for the 24 to 96 hour and for the 96 to 720-hour time periods in Section 5.2 are multiplied by the CR occupancy factors of 0.6 and 0.4 respectively. The revised χ/Qs are given in Section 5.2. Using these χ/Qs for the LPZ receptor results in the "LPZ" whole body dose giving the semi-infinite gamma dose at the CR air intake. The same procedure was used for the containment leakage pathway. The total whole-body gamma dose is 164.9 rem (see Table 6), which is obtained from RADTRAD run JAFMS_270_shine.out and JAFCL _270_shine.out. Since this is a semi-infinite dose at the CR air intake, it is appropriate to assign this dose to the CR roof. This dose is then attenuated by the Control Room roof.

The gamma attenuation for concrete shielding for an external cloud dose is conservatively calculated for an average gamma energy of 1 MeV.

The gamma radiation external radioactive plume shine to the CR personnel is attenuated by the 30" of concrete shielding per FA-16B (Ref. 9.63). Gamma dose attenuation for 2'-6" concrete shielding is calculated as follows:

Mass attenuation coefficient for concrete at 1 MeV μ/ρ = 0.06366 cm^2/g (Ref. 9.67, Table C.3)

Density of concrete ρ = 2.3 g/cm^3 (Ref. 9.67, Table C.3)

Linear attenuation coefficient μ in concrete = μ/ρ x ρ = 0.06366 cm^2/g x 2.3 g/cm^3 = 0.146 cm^{-1}

Shielding thickness r = 30 inch x 2.54 cm/inch = 76.2 cm

μr in concrete shielding = 0.146 cm^{-1} x 76.2 cm = 11.13 mean free paths

Exposure buildup factor for isotropic point source at disintegration energy of 1 MeV and 11.13 mean free paths of the 1 MeV gammas

$$B_p(\mu r) = A_1 e^{-\alpha_1 \mu r} + A_2 e^{-\alpha_2 \mu r}$$ (Ref. 9.68, page 556)

Where A_1, A_2, α_1, and α_2 are functions of energy, and $A_1 + A_2 = 1$

Values of these parameters are obtained from Table 10.3 of Reference 9.68 for 1 MeV gamma in concrete shielding as follows:

A_1 = 25.507

$-\alpha_1 = 0.07230$

$\alpha_2 = -0.01843$

$A_2 = 1 - A_1 = 1 - 25.507 = -24.507$

$\mu r = 11.13$

Substituting these values in the above equation yields:

$$B_p(\mu r) = 25.507*\exp(0.07230*11.13) - 24.507*\exp(0.01843*11.13)$$

$$= 26.95$$

Direct Shield Attenuation $I/I_0 = B_p(\mu r)\, e^{-\mu r}$

Where: I = shielded gamma dose rate

I_0 = unshielded gamma dose rate

$B_p(\mu r)$ = Exposure buildup factor

Substituting the values of parameters into the above attenuation Equation (1) yields a direct shield attenuation factor of

$$I/I_0 = B_p(\mu r)\, e^{-\mu r} = 26.95\, e^{-(11.13)} = 0.000395$$

This attenuation factor includes the buildup due to multiple scattering. The resulting gamma dose from the external cloud shine would be 0.065 rem (164.9 rem x 0.000395 = 0.065 rem), which is added with the dose contribution from other post-LOCA sources in Section 8.

7.10 Post-LOCA CR Filter Shine Dose

The RADTRAD3.03 code calculates the cumulative elemental and organic iodine atoms and the aerosol mass released to the environment at various time steps. The activity released to the environment is dispersed to the control room HVAC intake where it is drawn into the CREVAS System. The RADTRAD code also provides a listing of the cumulative total elemental and organic iodine retained by the charcoal adsorbers and the aerosol mass deposited on the filter. Tables 11 through 13 calculate the total elemental and organic iodine atoms and aerosol mass drawn into, and retained on, the CREVAS charcoal and HEPA filters. The release pathways (Containment Leakage, ESF leakage and MSIV leakage) are considered in the CREVAS filter shine dose evaluation.

The iodine atom/curie relationship in Table 12 is established using the MSIV leakage run JAFMS _270.out file, which is a typical relationship for all release paths. The total number of atoms accumulated on the charcoal filter is established in Table 11 based on the charcoal filter efficiency and CREVAS intake flow rate used in the RADTRAD model. Knowing the iodine atom/curie relationship (Table 12), and the total number of elemental and organic iodine atoms on the charcoal filter (Tables 11), the total (elemental + organic) iodine activity deposited on the CREVAS charcoal filter due to the MSIV leakage is calculated in Table 13. The review of Table 13 indicates that the accumulation of iodine on the charcoal adsorber is insignificant. This is as expected, because most of the elemental iodine is removed by drywell sprays, deposition in the main steam piping before it is released to the environment, and it is further reduced by air dilution before it migrates to the CR air intake. Also, the Containment leakage and ESF pathways are filtered by the SGTS filters before release to the environment. Shine from activity accumulated on the CREVAS HEPA and charcoal adsorbers are also attenuated by the 2.5 ft Control Room walls. See the preceding section for attenuation factor for the Control Room walls. The Control Room dose due to shine from activity accumulated on the CREVAS filter is, correspondingly, not significant and is not considered in the total Control Room post-accident dose.

8. RESULTS SUMMARY & CONCLUSIONS

Results Summary

The results of LOCA analysis using the AST methodology are summarized in the following table:

JAF Post-LOCA EAB, LPZ, & CR Doses - MSIV Leak rate of 270 scfh			
Post-LOCA Release Pathway /	**Post-LOCA TEDE Dose (Rem) Receptor Location**		
	Control Room	**EAB**	**LPZ**
Containment Leakage	1.06	5.12E-01 (occurs @ 3.2 hr)	2.97E-01
ESF Leakage	9.68E-02	9.51E-02 (occurs @ 9.8 hr)	3.49E-02
MSIV Leakage	3.41	2.21E-01 (occurs @ 8.4 hr)	2.69E-01
Containment Shine	9.56E-03	N/A	N/A
External Cloud	0.065	N/A	N/A
CR Filter Shine	Negligible	N/A	N/A
Total Dose	**4.64**	**0.83**	**0.60**
Allowable TEDE Limit	**5**	**25**	**25**

Conclusions

This calculation implements and complies with the guidance of RG 1.183 and will become the new design basis analysis following approval of the license amendment request by the NRC. The above results demonstrate that the total post-LOCA EAB, LPZ, and CR doses are within the allowable TEDE limits of 10 CFR 50.67.

9. REFERENCES

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10. TABLES

Table 1
JAF Core Inventory

Isotope	Core Inventory (Ci/MWt)	Isotope	Core Inventory (Ci/MWt)	Isotope	Core Inventory (Ci/MWt)
Co-58*	1.53E+02	RU-103	4.46E+04	CS-136	2.16E+03
Co-60*	1.83E+02	RU-105	3.18E+04	CS-137	5.81E+03
KR-85	5.26E+02	RU-106	1.94E+04	BA-139	5.15E+04
KR-85M	8.67E+03	RH-105	2.98E+04	BA-140	5.00E+04
KR-87	1.74E+04	SB-127	2.56E+03	LA-140	5.24E+04
KR-88	2.36E+04	SB-129	7.91E+03	LA-141	4.70E+04
RB-86	6.60E+01	TE-127	2.53E+03	LA-142	4.60E+04
SR-89	3.24E+04	TE-127M	4.34E+02	CE-141	4.72E+04
SR-90	4.26E+03	TE-129	7.42E+03	CE-143	4.56E+04
SR-91	4.03E+04	TE-129M	1.43E+03	CE-144	3.79E+04
SR-92	4.20E+04	TE-131M	5.38E+03	PR-143	4.43E+04
Y-90	4.40E+03	TE-132	3.86E+04	ND-147	1.85E+04
Y-91	4.11E+04	I-131	2.71E+04	NP-239	5.37E+05
Y-92	4.25E+04	I-132	3.96E+04	PU-238	1.53E+02
Y-93	4.64E+04	I-133	5.64E+04	PU-239	1.34E+01
ZR-95	5.02E+04	I-134	6.43E+04	PU-240	2.51E+01
ZR-97	4.86E+04	I-135	5.33E+04	PU-241	5.41E+03
NB-95	5.03E+04	XE-133	5.63E+04	AM-241	9.06E+00
MO-99	5.14E+04	XE-135	2.31E+04	CM-242	2.30E+03
TC-99M	4.54E+04	CS-134	7.22E+03	CM-244	1.52E+02

*CO-58 & CO-60 activities are obtained from RADTRAD User's Manual, Table 1.4.3.2-3 (Reference 9.16)

Core Inventory from Reference 9.4 for burnups of 12 to 43 GWD/MTU

Table 2

DW Spray Elemental & Particulate Iodine Cutoff Time

Post-LOCA	Aerosol	Elemental	Cutoff Value	
Time	Atom	Iodine	Aerosol	Elemental Iodine
(hr)	(kg)	Atom	(kg)	Atom
	A	B	C = A/50	D = B/200
0.3333	6.26E+00	5.51E+21	1.2529E-01	2.7529E+19
1	8.8772E-01	9.08E+20		
2	8.8765E-01	8.95E+20		
2.1	4.4188E-02	4.45E+19		
2.2	2.1997E-03	2.21E+18		

A and B from Drywell Compartment Nuclide Inventory, RADTRAD run JAFCL_spray_270.out

The spray cutoff time is 2.1 hrs (2.09 hrs. rounded to 2.1 hrs.). This cutoff time is used in the analysis as the cutoff time for elemental iodine and the DF reduction time for aerosols. Sprays are assumed to be terminated at 4-hours.

Table 3

Aerosol Horizontal Settling Surface Area and Volume

Main Steam Piping Segment	Horizontal Area A	Horizontal Volume B	Vertical Volume C	Total Horizontal Area	Total Horizontal Volume	Total Volume D = B+C
	ft^2	ft^3	ft^3	ft^2	ft^3	ft^3
Main Steam Line B						
RPV Nozzle to Inboard MSIV	159.72	70.95	186.82	250.94	111.47	298.29
Volume Between MSIVs	91.22	40.52	0.00			
Outboard MSIV to Cat 1	770.40	342.00	166.00	770.40	342.00	508.00
Main Steam Line C						
RPV Nozzle to Inboard MSIV	159.72	70.95	186.82	159.72	70.95	257.77
Volume Between MSIVs	91.22	40.52	0.00	861.62	382.52	548.52
Outboard MSIV to Cat 1	770.40	342.00	166.00			

Table 3a

Maximum MSIV Leakage = 135 scfh in Shortest (Failed) MSL

Balance of MSIV Leakage 135 scfh in Second Shortest MSL

Total MSIV Leakage = 270 scfh

	MSIV Leak Rate from DW To Various MSL Control Volumes (cfh)/(cfm)					
Post-LOCA Time Interval (hr)	Drywell To MSIV Failed Volume V_1 cfh/cfm	Volume V_1 To Volume V_2 cfh/cfm	Volume V_2 To Atmosphere cfh/cfm	Drywell To Intact Line 1 Volume V_3 cfh/cfm	Volume V_3 To Volume V_4 cfh/cfm	Volume V_4 To Atmosphere cfh/cfm
0-2	49.48	49.48	135.00	49.48	49.48	135.00
	0.82	0.82	2.25	0.82	0.82	2.25
2-24	28.66	28.66	78.19	28.66	28.66	78.19
	0.48	0.48	1.30	0.48	0.48	1.30
24-720	14.33	14.33	39.09	14.33	14.33	39.09
	0.24	0.24	0.65	0.24	0.24	0.65

Table 4

JAF MSL Aerosol Removal Efficiency Based on the NRC AEB-98-03 Monte Carlo Settling Velocity Distribution

Total Effective Aerosol Removal Efficiency (TEARE)

		Inboard	Outboard	
MSL B	Horizontal (ft2)	250.94	770.40	AEB 98-03, equation (4)
	Horizontal (ft3)	111.47	342.00	$\eta_{filt} = 1 - \frac{1}{1+\frac{\lambda_S * V}{Q}}$
	Flow Rate (cfh)	49.48	135.00	
MSL C	Horizontal (ft2)	159.72	861.62	
	Horizontal (ft3)	70.95	382.52	$\lambda s = \frac{u_s * A}{V}$ AEB 98-03, equation (2)
	Flow Rate (cfh)	49.48	135.00	

Probability			Settling	Settling	Removal Efficiency		MSL B	Removal Efficiency		MSL C
	Lower	Upper	Velocity	Velocity	MSL B	MSL B	Net Release	MSL C	MSL C	Net Release
Group	Bound	Bound	(m/sec)	(ft/hr)	Inboard	Outboard	Fraction	Inboard	Outboard	Fraction
	(LBi)	(UBi)	Ai	Bi	Ci	Di	Ei	Fi	Gi	Hi
1	0.00%	0.01%	1.170E-04	1.382E+00	87.51%	88.75%	1.41E-06	81.69%	89.82%	1.87E-06
2	0.01%	0.30%	1.331E-04	1.572E+00	88.85%	89.97%	3.24E-05	83.53%	90.94%	4.33E-05
3	0.30%	1.00%	1.661E-04	1.962E+00	90.87%	91.80%	5.24E-05	86.36%	92.61%	7.06E-05
4	1.00%	3.00%	1.965E-04	2.321E+00	92.17%	92.98%	1.10E-04	88.22%	93.68%	1.49E-04
5	3.00%	5.00%	2.509E-04	2.963E+00	93.76%	94.42%	6.97E-05	90.53%	94.98%	9.51E-05
6	5.00%	8.00%	2.967E-04	3.504E+00	94.67%	95.24%	7.61E-05	91.88%	95.72%	1.04E-04
7	8.00%	10.00%	3.589E-04	4.239E+00	95.56%	96.03%	3.53E-05	93.19%	96.44%	4.85E-05
8	10.00%	15.00%	3.995E-04	4.718E+00	95.99%	96.42%	7.18E-05	93.84%	96.79%	9.90E-05
9	15.00%	20.00%	4.971E-04	5.871E+00	96.75%	97.10%	4.71E-05	94.99%	97.40%	6.51E-05
10	20.00%	25.00%	6.015E-04	7.105E+00	97.30%	97.59%	3.25E-05	95.82%	97.84%	4.51E-05
11	25.00%	30.00%	7.104E-04	8.390E+00	97.70%	97.95%	2.35E-05	96.44%	98.17%	3.26E-05
12	30.00%	35.00%	8.229E-04	9.720E+00	98.01%	98.23%	1.76E-05	96.91%	98.41%	2.45E-05
13	35.00%	40.00%	9.510E-04	1.123E+01	98.27%	98.46%	1.33E-05	97.32%	98.62%	1.85E-05
14	40.00%	45.00%	1.093E-03	1.291E+01	98.50%	98.66%	1.01E-05	97.66%	98.80%	1.41E-05
15	45.00%	50.00%	1.235E-03	1.459E+01	98.67%	98.81%	7.91E-06	97.92%	98.94%	1.10E-05
16	50.00%	60.00%	1.383E-03	1.634E+01	98.81%	98.94%	1.27E-05	98.14%	99.05%	1.77E-05
17	60.00%	70.00%	1.689E-03	1.995E+01	99.02%	99.13%	8.52E-06	98.47%	99.22%	1.19E-05
18	70.00%	80.00%	2.099E-03	2.479E+01	99.21%	99.30%	5.54E-06	98.77%	99.37%	7.75E-06
19	80.00%	90.00%	2.606E-03	3.078E+01	99.36%	99.43%	3.60E-06	99.00%	99.49%	5.05E-06
20	90.00%	100.00%	3.478E-03	4.108E+01	99.52%	99.58%	2.03E-06	99.25%	99.62%	2.84E-06
					Total		**6.33E-04**	**Total**		**8.68E-04**
					MSL B Effective		**99.94%**	**MSL C Effective**		**99.91%**

Bi = Ai * 3.28 ft/m * 3600 sec/hr

Ci = (1-(1/(1+(Bi*250.94)/49.48)))

Di = (1-(1/(1+(Bi*770.40)/135.00)))

Fi = (1-(1/(1+(Bi*159.72)/49.48)))

Gi = (1-(1/(1+(Bi*861.63)/135.00)))

Hi = (UBi-LBi)*(1-Fi)*(1-Gi)

Table 4A

Settling Velocity Probabilistic Distribution

MSL B Net Settling Velocity Ji	MSL C Net Settling Velocity Ki	MSL B Released Settling Velocity Probability Distribution Li	Cumulative Probablity Mi	MSL C Released Settling Velocity Probability Distribution Ni	Cumulative Probability Oi
98.59%	98.13%	0.22%	0.22%	0.21%	0.21%
98.88%	98.51%	5.12%	5.34%	4.99%	5.20%
99.25%	98.99%	8.27%	13.61%	8.13%	13.33%
99.45%	99.26%	17.36%	30.97%	17.16%	30.50%
99.65%	99.52%	11.00%	41.97%	10.96%	41.45%
99.75%	99.65%	12.02%	53.99%	12.02%	53.48%
99.82%	99.76%	5.57%	59.56%	5.59%	59.07%
99.86%	99.80%	11.34%	70.90%	11.41%	70.48%
99.91%	99.87%	7.43%	78.34%	7.51%	77.99%
99.93%	99.91%	5.13%	83.47%	5.20%	83.18%
99.95%	99.93%	3.71%	87.18%	3.76%	86.94%
99.96%	99.95%	2.78%	89.96%	2.82%	89.77%
99.97%	99.96%	2.09%	92.05%	2.13%	91.89%
99.98%	99.97%	1.59%	93.64%	1.62%	93.51%
99.98%	99.98%	1.25%	94.89%	1.27%	94.79%
99.99%	99.98%	2.00%	96.89%	2.04%	96.82%
99.99%	99.99%	1.35%	98.24%	1.37%	98.20%
99.99%	99.99%	0.87%	99.11%	0.89%	99.09%
100.00%	99.99%	0.57%	99.68%	0.58%	99.67%
100.00%	100.00%	0.32%	100.00%	0.33%	100.00%
		100.00%		**100.00%**	

Ji = 1-(1-Ci)*(1-Di)

Ki = 1-(1-Fi)*(1-Gi)

Li = Ei/(Total Ei)

Ni = Hi/(Total Hi)

Oi = Cumulative Probability

Table 4A-1

Effective Aerosol Efficiency and Lambda

Group	MSL B Penetration		MSL C Penetration		MSL Net
	Inboard	Outboard	Inboard	Outboard	Probability
1	12.49%	11.25%	18.31%	10.18%	0.01%
2	11.15%	10.03%	16.47%	9.06%	0.29%
3	9.13%	8.20%	13.64%	7.39%	0.70%
4	7.83%	7.02%	11.78%	6.32%	2.00%
5	6.24%	5.58%	9.47%	5.02%	2.00%
6	5.33%	4.76%	8.12%	4.28%	3.00%
7	4.44%	3.97%	6.81%	3.56%	2.00%
8	4.01%	3.58%	6.16%	3.21%	5.00%
9	3.25%	2.90%	5.01%	2.60%	5.00%
10	2.70%	2.41%	4.18%	2.16%	5.00%
11	2.30%	2.05%	3.56%	1.83%	5.00%
12	1.99%	1.77%	3.09%	1.59%	5.00%
13	1.73%	1.54%	2.68%	1.38%	5.00%
14	1.50%	1.34%	2.34%	1.20%	5.00%
15	1.33%	1.19%	2.08%	1.06%	5.00%
16	1.19%	1.06%	1.86%	0.95%	10.00%
17	0.98%	0.87%	1.53%	0.78%	10.00%
18	0.79%	0.70%	1.23%	0.63%	10.00%
19	0.64%	0.57%	1.00%	0.51%	10.00%
20	0.48%	0.42%	0.75%	0.38%	10.00%
Effective Penetration	1.98%	1.76%	3.04%	1.58%	
Efficiency	98.02%	98.24%	96.96%	98.42%	
Lambda (1/hr)	22.03	22.00	22.23	21.96	

Table 4A-2

Settling Velocity Probabilistic Distribution

		Steam Line B			Steam Line C		
Group	V (m/s)	1st Node	2nd Node	Exit	1st Node	2nd Node	Exit
1	1.17E-04	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1	1.17E-04	0.01%	0.06%	0.22%	0.01%	0.06%	0.21%
2	1.33E-04	0.01%	0.06%	0.22%	0.01%	0.06%	0.21%
2	1.33E-04	0.30%	1.70%	5.34%	0.30%	1.63%	5.20%
3	1.66E-04	0.30%	1.70%	5.34%	0.30%	1.63%	5.20%
3	1.66E-04	1.00%	4.93%	13.61%	1.00%	4.77%	13.33%
4	1.97E-04	1.00%	4.93%	13.61%	1.00%	4.77%	13.33%
4	1.97E-04	3.00%	12.86%	30.97%	3.00%	12.51%	30.50%
5	2.51E-04	3.00%	12.86%	30.97%	3.00%	12.51%	30.50%
5	2.51E-04	5.00%	19.18%	41.97%	5.00%	18.73%	41.45%
6	2.97E-04	5.00%	19.18%	41.97%	5.00%	18.73%	41.45%
6	2.97E-04	8.00%	27.27%	53.99%	8.00%	26.74%	53.48%
7	3.59E-04	8.00%	27.27%	53.99%	8.00%	26.74%	53.48%
7	3.59E-04	10.00%	31.77%	59.56%	10.00%	31.22%	59.07%
8	3.99E-04	10.00%	31.77%	59.56%	10.00%	31.22%	59.07%
8	3.99E-04	15.00%	41.92%	70.90%	15.00%	41.35%	70.48%
9	4.97E-04	15.00%	41.92%	70.90%	15.00%	41.35%	70.48%
9	4.97E-04	20.00%	50.15%	78.34%	20.00%	49.58%	77.99%
10	6.02E-04	20.00%	50.15%	78.34%	20.00%	49.58%	77.99%
10	6.02E-04	25.00%	56.98%	83.47%	25.00%	56.45%	83.18%
11	7.10E-04	25.00%	56.98%	83.47%	25.00%	56.45%	83.18%
11	7.10E-04	30.00%	62.79%	87.18%	30.00%	62.30%	86.94%
12	8.23E-04	30.00%	62.79%	87.18%	30.00%	62.30%	86.94%
12	8.23E-04	35.00%	67.82%	89.96%	35.00%	67.38%	89.77%
13	9.51E-04	35.00%	67.82%	89.96%	35.00%	67.38%	89.77%
13	9.51E-04	40.00%	72.19%	92.05%	40.00%	71.79%	91.89%
14	1.09E-03	40.00%	72.19%	92.05%	40.00%	71.79%	91.89%
14	1.09E-03	45.00%	76.00%	93.64%	45.00%	75.65%	93.51%
15	1.24E-03	45.00%	76.00%	93.64%	45.00%	75.65%	93.51%
15	1.24E-03	50.00%	79.37%	94.89%	50.00%	79.06%	94.79%
16	1.38E-03	50.00%	79.37%	94.89%	50.00%	79.06%	94.79%
16	1.38E-03	60.00%	85.41%	96.89%	60.00%	85.18%	96.82%
17	1.69E-03	60.00%	85.41%	96.89%	60.00%	85.18%	96.82%
17	1.69E-03	70.00%	90.37%	98.24%	70.00%	90.21%	98.20%
18	2.10E-03	70.00%	90.37%	98.24%	70.00%	90.21%	98.20%
18	2.10E-03	80.00%	94.36%	99.11%	80.00%	94.26%	99.09%
19	2.61E-03	80.00%	94.36%	99.11%	80.00%	94.26%	99.09%
19	2.61E-03	90.00%	97.58%	99.68%	90.00%	97.54%	99.67%
20	3.48E-03	90.00%	97.58%	99.68%	90.00%	97.54%	99.67%
20	3.48E-03	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 4B

CR, EAB, & LPZ Doses - Lambda vs. Filter Efficiency

					Dose Consequence		
	MSL A		MSL D		CR	EAB	LPZ
	Inboard	Outboard	Inboard	Outboard	rem TEDE	rem TEDE	rem TEDE
Aerosol Removal Lambda, hr^{-1} (1)	22.03	22.00	22.23	21.96	3.4053	2.2062E-01	2.6905E-01
Effective Aerosol Removal Efficiency (2)	98.02%	98.24%	96.96%	98.42%	3.4053	2.2095E-01	2.6922E-01
20-group Efficiency (3)					3.4086	2.2104E-01	2.6928E-01
(1) From RADTRAD Output File JAFMS_Lambda.out							
(2) From RADTRAD Output File JAFMS_Eff.out							
(3) From RADTRAD Output File JAFMS_270.out							

Table 5
Steam Line Temperature Vs. Time

Time	Temperature	
(hrs)	°K	°F
0	565.3	557.9
1	561.1	550.3
2	557.0	542.9
3	552.9	535.5
4	548.9	528.3
5	545.0	521.2
6	541.1	514.3
7	537.3	507.4
8	533.5	500.6
9	529.8	494.0
10	526.2	487.4
11	522.6	481.0
12	519.1	474.6
13	515.6	468.4
14	512.2	462.2
15	508.8	456.2
16	505.5	450.2
17	502.3	444.4
18	499.0	438.6
19	495.9	432.9
20	492.8	427.4
21	489.7	421.9
22	486.7	416.5
23	483.8	411.1
24	480.9	405.9
48	423.3	302.2
72	384.0	231.5
96	357.2	183.3
240	305.5	90.2
480	299.8	80.0

Extrapolated Temperature Information from Reference 9.50, Figure 7

Table 5A

MSIV Failed & Intact Steam Line Volumes

For Elemental Iodine Removal Efficiency Calculation

MSIV Failed MSL		Intact MSL	
Volume	Volume	Volume	Volume
V_1	V_2	V_3	V_4
$(ft^3)/(m^3)$	$(ft^3)/(m^3)$	$(ft^3)/(m^3)$	$(ft^3)/(m^3)$
298.29	508.00	257.77	548.52
8.45	14.40	7.30	15.54

MSL Volumes from Table 3

Table 5B

MSIV Failed & Intact Steam Line Surface Areas

For Elemental Iodine Removal Efficiency Calculation

MSIV Failed MSL		Intact MSL	
Surface Area	Surface Area	Surface Area	Surface Area
V_1	V_2	V_3	V_4
$(ft^2)/(m^2)$	$(ft^2)/(m^2)$	$(ft^2)/(m^2)$	$(ft^2)/(m^2)$
250.94	770.40	159.72	861.62
23.33	71.61	14.85	80.09

Table 5C

Elemental Iodine Deposition Velocity - MSIV Leakage

Time	Temp Degree K*	Temp Degree F		Deposition Velocity cm/sec	Deposition Velocity m/sec
	A	B	C	D = EXP[C]	E = D / 100
0	565.3	557.9	-7.53	0.000536	5.362E-06
8	533.5	500.6	-7.23	0.000721	7.211E-06
24	480.9	405.9	-6.66	0.001283	1.283E-05
48	423.3	302.2	-5.86	0.002841	2.841E-05
72	384.0	231.5	-5.18	0.005602	5.602E-05
96	357.2	183.3	-4.64	0.009697	9.697E-05
240	305.5	90.2	-3.30	0.036701	3.670E-04
480	299.8	80.0	-3.13	0.043664	4.366E-04
720					

A & B from Table 5

C Equation from Reference 9.50, page 12

Table 5D

Elemental Iodine Deposition Rate - MSIV Failed Line Volume V_1

Time	Deposition Velocity	Main Steam Line Total Surface Area	Main Steam Line Total Volume	Elemental Iodine Removal Rate	Elemental Iodine Deposition Efficiency
Hr	m/sec	(m^2)	(m^3)	(hr^{-1})	
	A	B	C	D = (AxB)x3600/C	E
0	5.362E-06	23.33	8.45	0.0533	0.0519
8	7.211E-06	23.33	8.45	0.0716	0.0691
24	1.283E-05	23.33	8.45	0.1275	0.1197
48	2.841E-05	23.33	8.45	0.2822	0.2459
72	5.602E-05	23.33	8.45	0.5564	0.4268
96	9.697E-05	23.33	8.45	0.9633	0.6184
240	3.670E-04	23.33	8.45	3.6457	0.9739
480	4.366E-04	23.33	8.45	4.3374	0.9869
720					

A from Table 5C

B & C from Tables 5B & 5A, Respectively

E = 1 - exp(-D * 1 hour)

Table 5E

Elemental Iodine Deposition Rate - MSIV Failed Line Volume V2

Time	Deposition Velocity	Main Steam Line		Elemental Iodine Removal Rate	Elemental Iodine Deposition Efficiency
		Total Surface Area	Total Volume		
Hr	m/sec	(m^2)	(m^3)	(hr^{-1})	
	A*	B	C	D = (AxB)x3600/C	E
0	5.362E-06	71.61	14.40	0.0960	0.0916
8	7.211E-06	71.61	14.40	0.1291	0.1211
24	1.283E-05	71.61	14.40	0.2298	0.2053
48	2.841E-05	71.61	14.40	0.5087	0.3987
72	5.602E-05	71.61	14.40	1.0031	0.6333
96	9.697E-05	71.61	14.40	1.7365	0.8239
240	3.670E-04	71.61	14.40	6.5722	0.9986
480	4.366E-04	71.61	14.40	7.8190	0.9996
720					

A from Table 5C

B & C from Tables 5B & 5A, Respectively

E = 1 - exp(-D * 1 hour)

Table 5F

Elemental Iodine Deposition Rate - Intact Steam Line Volume V3

Time	Deposition Velocity	Main Steam Line Total Surface Area	Main Steam Line Total Volume	Elemental Iodine Removal Rate	Elemental Iodine Deposition Efficiency
Hr	m/sec	(m^2)	(m^3)	(hr^{-1})	
	A*	B	C	D = (AxB)x3600/C	E
0	5.362E-06	14.85	7.30	0.0392	0.0385
8	7.211E-06	14.85	7.30	0.0528	0.0514
24	1.283E-05	14.85	7.30	0.0939	0.0896
48	2.841E-05	14.85	7.30	0.2079	0.1877
72	5.602E-05	14.85	7.30	0.4098	0.3362
96	9.697E-05	14.85	7.30	0.7095	0.5081
240	3.670E-04	14.85	7.30	2.6852	0.9318
480	4.366E-04	14.85	7.30	3.1946	0.9590
720					

A from Table 5C

B & C from Tables 5A & 5B

E = 1 - exp(-D * 1 hour)

Table 5G

Elemental Iodine Deposition Rate - Intact Steam Line Volume V_4

Time	Deposition Velocity	Main Steam Line Total Surface Area	Main Steam Line Total Volume	Elemental Iodine Removal Rate	Elemental Iodine Deposition Efficiency
Hr	m/sec	(m^2)	(m^3)	(hr^{-1})	
	A*	B	C	D = (AxB)x3600/C	E
0	5.362E-06	80.09	15.54	0.0995	0.0947
8	7.211E-06	80.09	15.54	0.1337	0.1252
24	1.283E-05	80.09	15.54	0.2380	0.2118
48	2.841E-05	80.09	15.54	0.5269	0.4096
72	5.602E-05	80.09	15.54	1.0390	0.6462
96	9.697E-05	80.09	15.54	1.7986	0.8345
240	3.670E-04	80.09	15.54	6.8074	0.9989
480	4.366E-04	80.09	15.54	8.0988	0.9997
720					

A from Table 5C

B & C from Tables 5B & 5A, Respectively

E = 1 - exp(-D * 1 hour)

Table 5H

Elemental Iodine Resuspension Rate - MSIV Leakage

Post-LOCA Time (hr)	Temp Degree K	-600/T	Resuspension Rate (hr^{-1})	Resuspension Efficiency E
0	565.3	-1.06	0.0538	0.0524
8	533.5	-1.12	0.0505	0.0493
24	480.9	-1.25	0.0447	0.0437
48	423.3	-1.42	0.0377	0.0370
72	384.0	-1.56	0.0326	0.0321
96	357.2	-1.68	0.0290	0.0286
240	305.5	-1.96	0.0218	0.0216
480	299.8	-2.00	0.0210	0.0208
720				

Resuspension Rate $(sec)^{-1}$ $= 2.32 (\pm 2.00) \times 10^{-5} e^{-600/T} = 4.32 \times 10^{-5} e^{-600/T}$

Resuspension Rate $(hr)^{-1}$ $= 4.32 \times 3600 \times 10^{-5} e^{-600/T}$

E = 1 - exp(- resuspension rate * 1 hour)

Table 5I

Net Elemental Iodine Removal Efficiency - MSIV Failed Line Volume V_1

Post-LOCA Time (hr)	Elemental Iodine Deposition Efficiency A	Elemental Iodine Resuspension Efficiency B	Elemental Iodine Net Deposition Efficiency (%) C
0	0.0519	0.0524	4.92%
8	0.0691	0.0493	6.57%
24	0.1197	0.0437	11.44%
48	0.2459	0.0370	23.68%
72	0.4268	0.0321	41.31%
96	0.6184	0.0286	60.07%
240	0.9739	0.0216	95.29%
480	0.9869	0.0208	96.64%
720			

A from Table 5D

B from Table 5H

C = [A - (A*B)] * 100%

Table 5J

Net Elemental Iodine Removal Efficiency - MSIV Failed Line Volume V2

Post-LOCA Time (hr)	Elemental Iodine Deposition Efficiency A	Elemental Iodine Resuspension Efficiency B	Elemental Iodine Net Deposition Efficiency (%) C
0	0.0916	0.0524	8.68%
8	0.1211	0.0493	11.52%
24	0.2053	0.0437	19.63%
48	0.3987	0.0370	38.40%
72	0.6333	0.0321	61.30%
96	0.8239	0.0286	80.03%
240	0.9986	0.0216	97.71%
480	0.9996	0.0208	97.88%
720			

A from Table 5E

B from Table 5H

C = [A - (A*B)] * 100%

Table 5K

Net Elemental Iodine Removal Efficiency - Intact Steam Line Volume V_3

Post-LOCA Time (hr)	Elemental Iodine Deposition Efficiency A	Elemental Iodine Resuspension Efficiency B	Elemental Iodine Net Deposition Efficiency (%) C
0	0.0385	0.0524	3.65%
8	0.0514	0.0493	4.89%
24	0.0896	0.0437	8.57%
48	0.1877	0.0370	18.07%
72	0.3362	0.0321	32.55%
96	0.5081	0.0286	49.36%
240	0.9318	0.0216	91.17%
480	0.9590	0.0208	93.91%
720			

A from Table 5F

B from Table 5H

C = [A - (A*B)] * 100%

Table 5L

Net Elemental Iodine Removal Efficiency - Intact Steam Line Volume V_4

Post-LOCA Time (hr)	Elemental Iodine Deposition Efficiency A	Elemental Iodine Resuspension Efficiency B	Elemental Iodine Net Deposition Efficiency (%) C
0	0.0947	0.0524	8.97%
8	0.1252	0.0493	11.90%
24	0.2118	0.0437	20.25%
48	0.4096	0.0370	39.44%
72	0.6462	0.0321	62.55%
96	0.8345	0.0286	81.06%
240	0.9989	0.0216	97.73%
480	0.9997	0.0208	97.89%
720			

A from Table 5G

B from Table 5H

C = [A - (A*B)] * 100%

Table 5M

Elemental Iodine Deposition Efficiencies in MSL Volumes

Post-LOCA Time (hr)	Elemental Iodine Deposition Efficiencies (DFs) in MSL Volume			
	V_1	V_2	V_3	V_4
	A	B	C	D
0	4.92%	8.68%	3.65%	8.97%
8	6.57%	11.52%	4.89%	11.90%
24	11.44%	19.63%	8.57%	20.25%
48	23.68%	38.40%	18.07%	39.44%
72	41.31%	61.30%	32.55%	62.55%
96	60.07%	80.03%	49.36%	81.06%
240	95.29%	97.71%	91.17%	97.73%
480	96.64%	97.88%	93.91%	97.89%
720				

A from Table 5I

B from Table 5J

C from Table 5K

D from Table 5L

Table 6 JAF Post-LOCA External Cloud WB Doses	
	External Cloud WB Dose (rem)
Containment Leakage	
Whole Body Dose	**139.17**
RADTRAD Run	**JAFCL_270_shine.out**
MSL Leakage	
Whole Body Dose	**25.74**
RADTRAD Run	**JAFMS_270_shine.out**
Total WB External Cloud Dose	**164.9**
B_p(mr) =	26.95
I/I_0 =	0.000395
Dose (rem) =	**0.065**

Table 7

Post-LOCA RB Airborne Isotopic Activity - Containment Leakage

Isotope	Post-LOCA RB Isotopic Activity (Ci) Containment Leakage				
	2.0 hr	8.0 hrs	24.0 hrs	96 hrs	720 hrs
Am-241	7.549E-05	1.066E-05	8.285E-08	1.572E-08	1.339E-08
Ba-139	1.569E+01	1.082E-01	2.683E-07	0.0	0.000E+00
Ba-140	4.146E+01	5.763E+00	4.303E-02	6.804E-03	1.208E-03
Ce-141	9.823E-01	1.378E-01	1.053E-03	1.838E-04	7.711E-05
Ce-143	9.105E-01	1.131E-01	6.258E-04	2.568E-05	3.809E-11
Ce-144	7.891E-01	1.111E-01	8.589E-04	1.587E-04	1.088E-04
Cm-242	1.915E-02	2.696E-03	2.081E-05	3.825E-06	2.501E-06
Cm-244	1.266E-03	1.784E-04	1.381E-06	2.570E-07	1.872E-07
Co-58	1.591E-02	2.236E-03	1.720E-05	3.109E-06	1.760E-06
Co-60	1.905E-02	2.685E-03	2.078E-05	3.864E-06	2.796E-06
Cs-134	1.073E+02	1.482E+01	9.578E-02	1.217E-02	8.677E-03
Cs-136	3.196E+01	4.358E+00	2.720E-02	2.957E-03	5.456E-04
Cs-137	8.636E+01	1.193E+01	7.714E-02	9.826E-03	7.164E-03
I-131	4.702E+02	1.144E+02	5.487E+01	2.031E+01	1.576E+00
I-132	5.095E+02	3.294E+01	1.962E-01	8.321E-03	2.408E-05
I-133	9.216E+02	1.875E+02	5.589E+01	2.431E+00	1.654E-09
I-134	2.310E+02	4.996E-01	8.137E-07	0.0	0.0
I-135	7.549E+02	9.997E+01	9.486E+00	2.392E-03	0.0
Kr-85	5.720E+02	2.268E+03	2.493E+03	1.200E+03	8.724E+02
Kr-85m	6.919E+03	1.084E+04	1.002E+03	7.012E-03	0.0
Kr-87	6.361E+03	9.582E+02	1.718E-01	0.0	0.0
Kr-88	1.575E+04	1.444E+04	3.196E+02	3.595E-06	0.0
La-140	9.566E-01	6.888E-01	1.453E-02	5.982E-03	1.403E-03
La-141	2.751E-01	1.346E-02	6.197E-06	0.0	0.0
La-142	1.559E-01	1.480E-03	8.608E-09	0.0	0.0
Mo-99	5.241E+00	6.933E-01	4.538E-03	3.966E-04	4.128E-07
Nb-95	4.190E-01	5.903E-02	4.569E-04	8.488E-05	5.744E-05
Nd-147	1.533E-01	2.126E-02	1.578E-04	2.431E-05	3.440E-06
Np-239	1.091E+01	1.429E+00	9.089E-03	6.997E-04	2.426E-07
Pr-143	3.699E-01	5.298E-02	4.211E-04	7.556E-05	1.517E-05

Table 7 (Cont'd)

Post-LOCA RB Airborne Isotopic Activity - Containment Leakage

Isotope	Post-LOCA RB Isotopic Activity (Ci) Containment Leakage				
	2.0 hr	8.0 hrs	24.0 hrs	96 hrs	720 hrs
Pu-238	3.186E-03	4.490E-04	3.476E-06	6.474E-07	4.740E-07
Pu-239	2.791E-04	3.936E-05	3.053E-07	5.709E-08	4.183E-08
Pu-240	5.227E-04	7.365E-05	5.702E-07	1.062E-07	7.753E-08
Pu-241	1.127E-01	1.587E-02	1.229E-04	2.287E-05	1.664E-05
Rb-86	9.780E-01	1.339E-01	8.444E-04	9.624E-05	2.676E-05
Rh-105	3.093E+00	4.118E-01	2.427E-03	1.107E-04	3.940E-10
Ru-103	4.637E+00	6.505E-01	4.978E-03	8.789E-04	4.057E-04
Ru-105	2.423E+00	1.338E-01	8.523E-05	2.084E-10	0.0
Ru-106	2.020E+00	2.845E-01	2.200E-03	4.072E-04	2.832E-04
Sb-127	5.252E+00	7.074E-01	4.858E-03	5.269E-04	3.567E-06
Sb-129	1.195E+01	6.430E-01	3.821E-04	6.837E-10	0.0
Sr-89	2.696E+01	3.786E+00	2.904E-02	5.188E-03	2.652E-03
Sr-90	3.548E+00	5.000E-01	3.871E-03	7.205E-04	5.253E-04
Sr-91	2.901E+01	2.639E+00	6.357E-03	6.189E-06	0.0
Sr-92	2.098E+01	6.370E-01	8.236E-05	0.0	0.0
Tc-99m	4.716E+00	6.479E-01	4.546E-03	4.066E-04	4.232E-07
Te-127	5.264E+00	7.339E-01	5.422E-03	6.844E-04	1.208E-04
Te-127m	9.038E-01	1.274E-01	9.858E-04	1.824E-04	1.151E-04
Te-129	1.352E+01	9.723E-01	3.306E-03	4.847E-04	2.070E-04
Te-129m	2.978E+00	4.187E-01	3.203E-03	5.605E-04	2.394E-04
Te-131m	1.070E+01	1.312E+00	7.020E-03	2.476E-04	9.904E-11
Te-132	7.897E+01	1.055E+01	7.089E-02	6.971E-03	2.017E-05
Xe-133	6.086E+04	2.337E+05	2.352E+05	7.623E+04	1.792E+03
Xe-135	2.462E+04	6.351E+04	2.063E+04	4.105E+01	0.0
Y-90	6.472E-02	3.988E-02	8.704E-04	4.655E-04	5.280E-04
Y-91	3.467E-01	5.280E-02	4.438E-04	8.253E-05	4.430E-05
Y-92	3.460E+00	1.055E+00	8.033E-04	1.507E-10	0.0
Y-93	3.369E-01	3.145E-02	8.121E-05	1.080E-07	0.0
Zr-95	4.178E-01	5.871E-02	4.513E-04	8.132E-05	4.481E-05
Zr-97	3.729E-01	4.109E-02	1.650E-04	1.603E-06	0.0

Post-LOCA RB Isotopic Activity from RADTRAD Run JAFCL_270.out

Table 8

Post-LOCA RB Airborne Isotopic Activity - ESF Leakage

Isotope	Post-LOCA RB Isotopic Activity ESF Leakage				
	2.0 hr	**8.0 hrs**	**24.0 hrs**	**96 hrs**	**720 hrs**
I-131	1.19E+03	4.15E+03	4.30E+03	3.15E+03	2.09E+02
I-132	1.21E+03	7.70E+02	6.83E+00	2.44E-09	
I-133	2.33E+03	6.80E+03	4.39E+03	3.77E+02	2.19E-07
I-134	5.85E+02	1.81E+01	6.39E-05		
I-135	1.91E+03	3.63E+03	7.44E+02	3.71E-01	
Xe-133	8.77E+01	2.01E+03	6.73E+03	9.39E+03	2.04E+02
Xe-135	8.74E+02	1.31E+04	1.42E+04	1.21E+02	

Post-LOCA RB Isotopic Activity from RADTRAD Run JAFESF_270.out

Table 9
Post-LOCA RB Airborne Isotopic Activity - Containment + ESF Leakages

Isotope	Post-LOCA RB Isotopic Activity (Ci) Containment + ESF Leakages				
	2.0 hr	8.0 hrs	24.0 hrs	96 hrs	720 hrs
Am-241	7.549E-05	1.066E-05	8.285E-08	1.572E-08	1.339E-08
Ba-139	1.569E+01	1.082E-01	2.683E-07	0.0	0.000E+00
Ba-140	4.146E+01	5.763E+00	4.303E-02	6.804E-03	1.208E-03
Ce-141	9.823E-01	1.378E-01	1.053E-03	1.838E-04	7.711E-05
Ce-143	9.105E-01	1.131E-01	6.258E-04	2.568E-05	3.809E-11
Ce-144	7.891E-01	1.111E-01	8.589E-04	1.587E-04	1.088E-04
Cm-242	1.915E-02	2.696E-03	2.081E-05	3.825E-06	2.501E-06
Cm-244	1.266E-03	1.784E-04	1.381E-06	2.570E-07	1.872E-07
Co-58	1.591E-02	2.236E-03	1.720E-05	3.109E-06	1.760E-06
Co-60	1.905E-02	2.685E-03	2.078E-05	3.864E-06	2.796E-06
Cs-134	1.073E+02	1.482E+01	9.578E-02	1.217E-02	8.677E-03
Cs-136	3.196E+01	4.358E+00	2.720E-02	2.957E-03	5.456E-04
Cs-137	8.636E+01	1.193E+01	7.714E-02	9.826E-03	7.164E-03
I-131	1.660E+03	4.263E+03	4.359E+03	3.169E+03	2.103E+02
I-132	1.723E+03	8.031E+02	7.031E+00	8.321E-03	2.408E-05
I-133	3.254E+03	6.990E+03	4.442E+03	3.796E+02	2.207E-07
I-134	8.156E+02	1.863E+01	6.467E-05	0.000E+00	0.000E+00
I-135	2.665E+03	3.727E+03	7.539E+02	3.734E-01	0.000E+00
Kr-85	5.720E+02	2.268E+03	2.493E+03	1.200E+03	8.724E+02
Kr-85m	6.919E+03	1.084E+04	1.002E+03	7.012E-03	0.0
Kr-87	6.361E+03	9.582E+02	1.718E-01	0.0	0.0
Kr-88	1.575E+04	1.444E+04	3.196E+02	3.595E-06	0.0
La-140	9.566E-01	6.888E-01	1.453E-02	5.982E-03	1.403E-03
La-141	2.751E-01	1.346E-02	6.197E-06	0.0	0.0
La-142	1.559E-01	1.480E-03	8.608E-09	0.0	0.0
Mo-99	5.241E+00	6.933E-01	4.538E-03	3.966E-04	4.128E-07
Nb-95	4.190E-01	5.903E-02	4.569E-04	8.488E-05	5.744E-05
Nd-147	1.533E-01	2.126E-02	1.578E-04	2.431E-05	3.440E-06
Np-239	1.091E+01	1.429E+00	9.089E-03	6.997E-04	2.426E-07
Pr-143	3.699E-01	5.298E-02	4.211E-04	7.556E-05	1.517E-05

Table 9 (Cont'd)
Post-LOCA RB Airborne Isotopic Activity - Containment +ESF Leakages

Isotope	Post-LOCA RB Isotopic Activity (Ci) Containment + ESF Leakages				
	2.0 hr	8.0 hrs	24.0 hrs	96 hrs	720 hrs
Pu-238	3.186E-03	4.490E-04	3.476E-06	6.474E-07	4.740E-07
Pu-239	2.791E-04	3.936E-05	3.053E-07	5.709E-08	4.183E-08
Pu-240	5.227E-04	7.365E-05	5.702E-07	1.062E-07	7.753E-08
Pu-241	1.127E-01	1.587E-02	1.229E-04	2.287E-05	1.664E-05
Rb-86	9.780E-01	1.339E-01	8.444E-04	9.624E-05	2.676E-05
Rh-105	3.093E+00	4.118E-01	2.427E-03	1.107E-04	3.940E-10
Ru-103	4.637E+00	6.505E-01	4.978E-03	8.789E-04	4.057E-04
Ru-105	2.423E+00	1.338E-01	8.523E-05	2.084E-10	0.0
Ru-106	2.020E+00	2.845E-01	2.200E-03	4.072E-04	2.832E-04
Sb-127	5.252E+00	7.074E-01	4.858E-03	5.269E-04	3.567E-06
Sb-129	1.195E+01	6.430E-01	3.821E-04	6.837E-10	0.0
Sr-89	2.696E+01	3.786E+00	2.904E-02	5.188E-03	2.652E-03
Sr-90	3.548E+00	5.000E-01	3.871E-03	7.205E-04	5.253E-04
Sr-91	2.901E+01	2.639E+00	6.357E-03	6.189E-06	0.0
Sr-92	2.098E+01	6.370E-01	8.236E-05	0.0	0.0
Tc-99m	4.716E+00	6.479E-01	4.546E-03	4.066E-04	4.232E-07
Te-127	5.264E+00	7.339E-01	5.422E-03	6.844E-04	1.208E-04
Te-127m	9.038E-01	1.274E-01	9.858E-04	1.824E-04	1.151E-04
Te-129	1.352E+01	9.723E-01	3.306E-03	4.847E-04	2.070E-04
Te-129m	2.978E+00	4.187E-01	3.203E-03	5.605E-04	2.394E-04
Te-131m	1.070E+01	1.312E+00	7.020E-03	2.476E-04	9.904E-11
Te-132	7.897E+01	1.055E+01	7.089E-02	6.971E-03	2.017E-05
Xe-133	6.095E+04	2.357E+05	2.420E+05	8.561E+04	1.997E+03
Xe-135	2.549E+04	7.658E+04	3.484E+04	1.623E+02	0.000E+00
Y-90	6.472E-02	3.988E-02	8.704E-04	4.655E-04	5.280E-04
Y-91	3.467E-01	5.280E-02	4.438E-04	8.253E-05	4.430E-05
Y-92	3.460E+00	1.055E+00	8.033E-04	1.507E-10	0.0
Y-93	3.369E-01	3.145E-02	8.121E-05	1.080E-07	0.0
Zr-95	4.178E-01	5.871E-02	4.513E-04	8.132E-05	4.481E-05
Zr-97	3.729E-01	4.109E-02	1.650E-04	1.603E-06	0.0

Table 10

Post-LOCA RB Shine Integrated Gamma Dose to CR

Post-LOCA Period t (hr)	Control Room Gamma Dose Rate (mGy/hr)	Control Room Integrated Gamma Dose (w/o CROF) (mGy)	Control Room Occupancy Factor (unitless)	Control Room Integrated Gamma Dose (with CROF) (mrem)	Control Room Cumulative Gamma Dose (mrem)	MicroShield Run No.
2	7.713E-03	7.713E-03	1.0	7.713E-01	7.713E-01	JAF_2hr.MSD
8	5.331E-03	3.913E-02	1.0	3.913E+00	4.685E+00	JAF_4hr.MSD
24	1.980E-04	4.423E-02	1.0	4.423E+00	9.108E+00	JAF_8hr.MSD
96	1.512E-06	7.182E-03	0.6	4.309E-01	9.539E+00	JAF_96hr.MSD
720	1.930E-08	4.778E-04	0.4	1.911E-02	9.558E+00	JAF_720hr.MSD
Dose (rem)					**9.558E-03**	

Table 11

Post-LOCA Total Elemental & Organic Iodine Inventory and Aerosol Mass on CREF Filter @ 720 Hrs

Post-LOCA Release Path	Elemental Iodine (atom)	Organic Iodine (atom)	Aerosol Mass (kg)	Reference RADTRAD Run
Containment Leakage	2.587E+10	3.2642E+11	1.817E-11	JAFCL_270.out
ESF Leakage	3.829E+13	1.1841E+12	0.000E+00	JAFES_270.out
MSIV Leakage	1.010E+15	1.584E+16	9.446E-10	JAFMS_270.out
Total	**1.048E+15**	**1.585E+16**	**9.628E-10**	
Total (Elemental + Organic) Iodine Atom	**1.6893E+16**			

Table 12

Conversion of Iodine Activity Into Iodine Atom

Isotope	CR Region @ 2 hr		Iodine	Isotopic
	Activity (Curie)	Atoms	Atoms Per (Curie)	Iodine Fraction
	A	B	Ci = Bi /Ai	Di = Bi/ΣB
I-131	7.852E-04	2.612E+14	3.326E+17	8.064E-01
I-132	7.114E-04	2.568E+12	3.610E+15	7.930E-03
I-133	1.539E-03	5.521E+13	3.586E+16	1.705E-01
I-134	3.859E-04	5.833E+11	1.511E+15	1.801E-03
I-135	1.261E-03	4.329E+12	3.433E+15	1.337E-02
Total		3.239E+14		1.000E+00

A & B From RADTRAD Run JAFMS_270.out output file @ 2.0 hr from CR Filter Nuclide Inventory

Table 13

Post-LOCA Iodine Activity Deposited on CREF Charcoal Filter

Isotope	Iodine Atoms Per Curie	Fraction Of Iodine	Elemental & Organic Iodine Atoms On CR Charcoal Filter 720 Hrs	Iodine Atoms on CR Charcoal Filter At 720 Hrs	Iodine Activity CR Charcoal Filter At 720 Hrs Ci
	A	B	C	Di =Bi * C	Ei = Di / Ai
I-131	3.326E+17	8.064E-01	1.6893E+16	1.362E+16	4.096E-02
I-132	3.610E+15	7.930E-03		1.340E+14	3.711E-02
I-133	3.586E+16	1.705E-01		2.880E+15	8.030E-02
I-134	1.511E+15	1.801E-03		3.043E+13	2.013E-02
I-135	3.433E+15	1.337E-02		2.258E+14	6.577E-02
Total Iodine Activity on CREF Charcoal Filter					**2.443E-01**

A & B from Table 12

C from Table 11

11. FIGURES

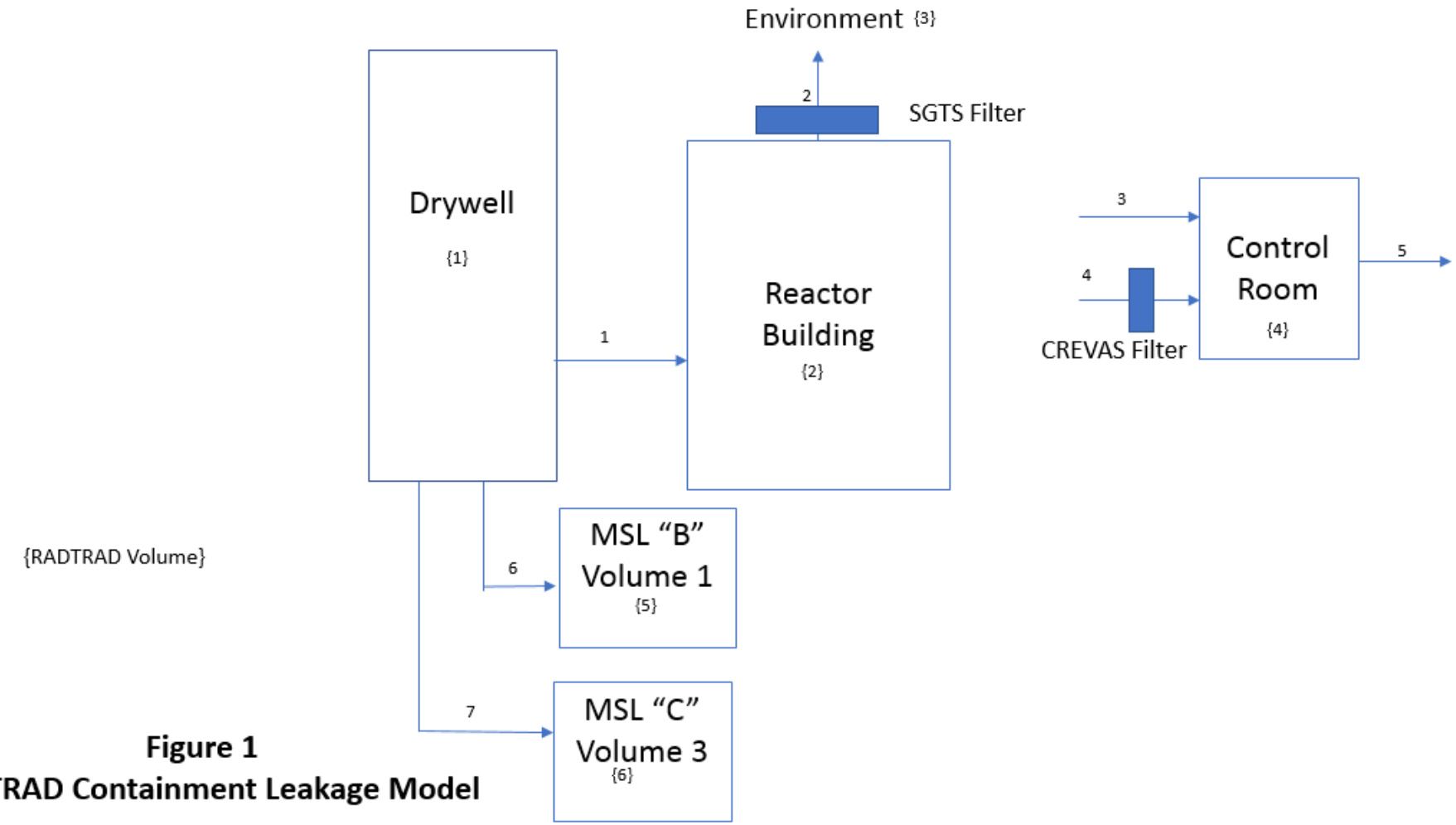


Figure 1
RADTRAD Containment Leakage Model

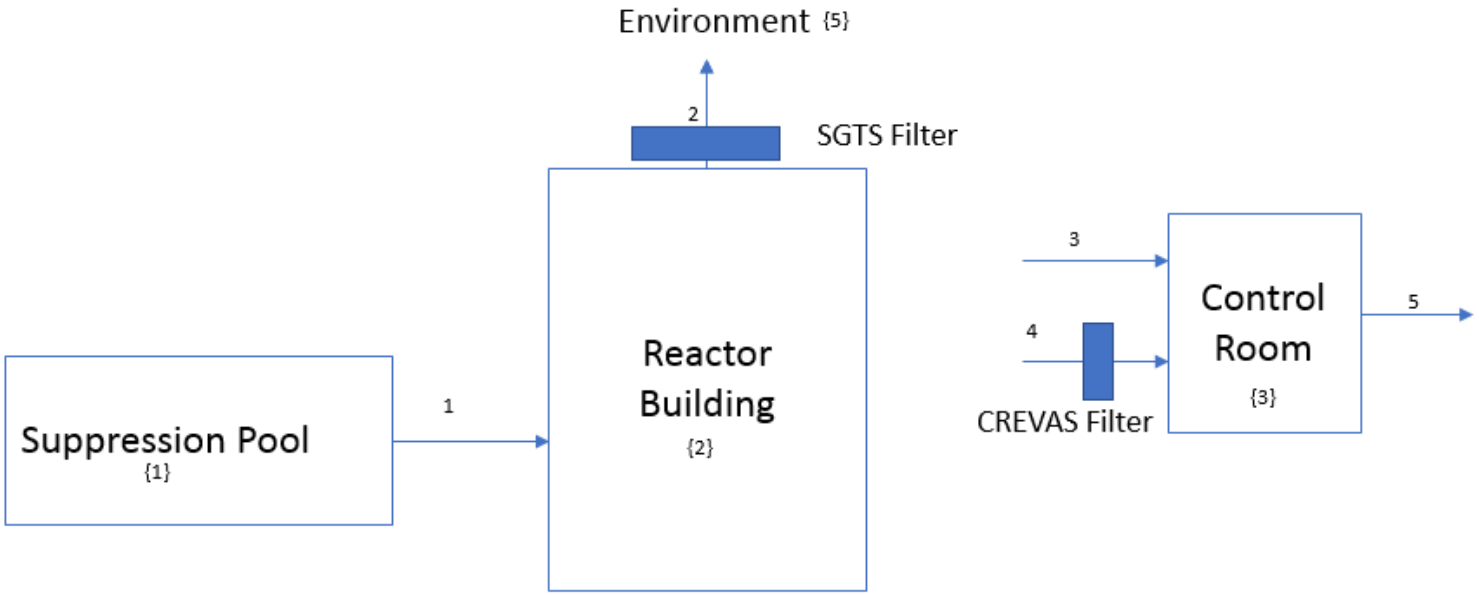
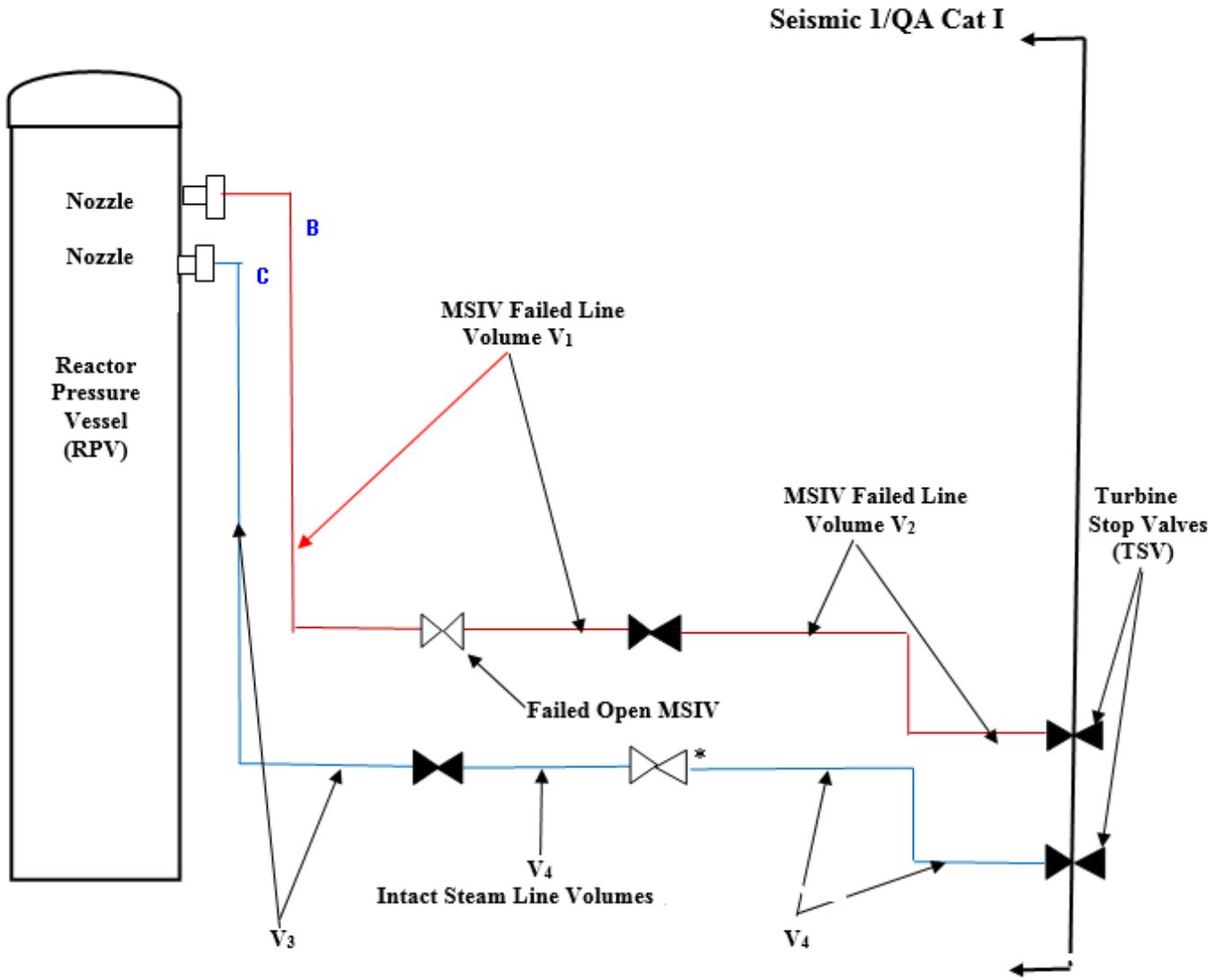


Figure 2
RADTRAD ESF Leakage Model

Figure 3

V1 = RPV Nozzle "B" to Outboard MSIV
V2 = Outboard MSIV to TSV
V3 = PRV Nozzle "C" to Inboard MSIV
V4 = Inboard MSIV to TSV
*Note: Valve is assumed open for modelir purposes. It is not failed open.



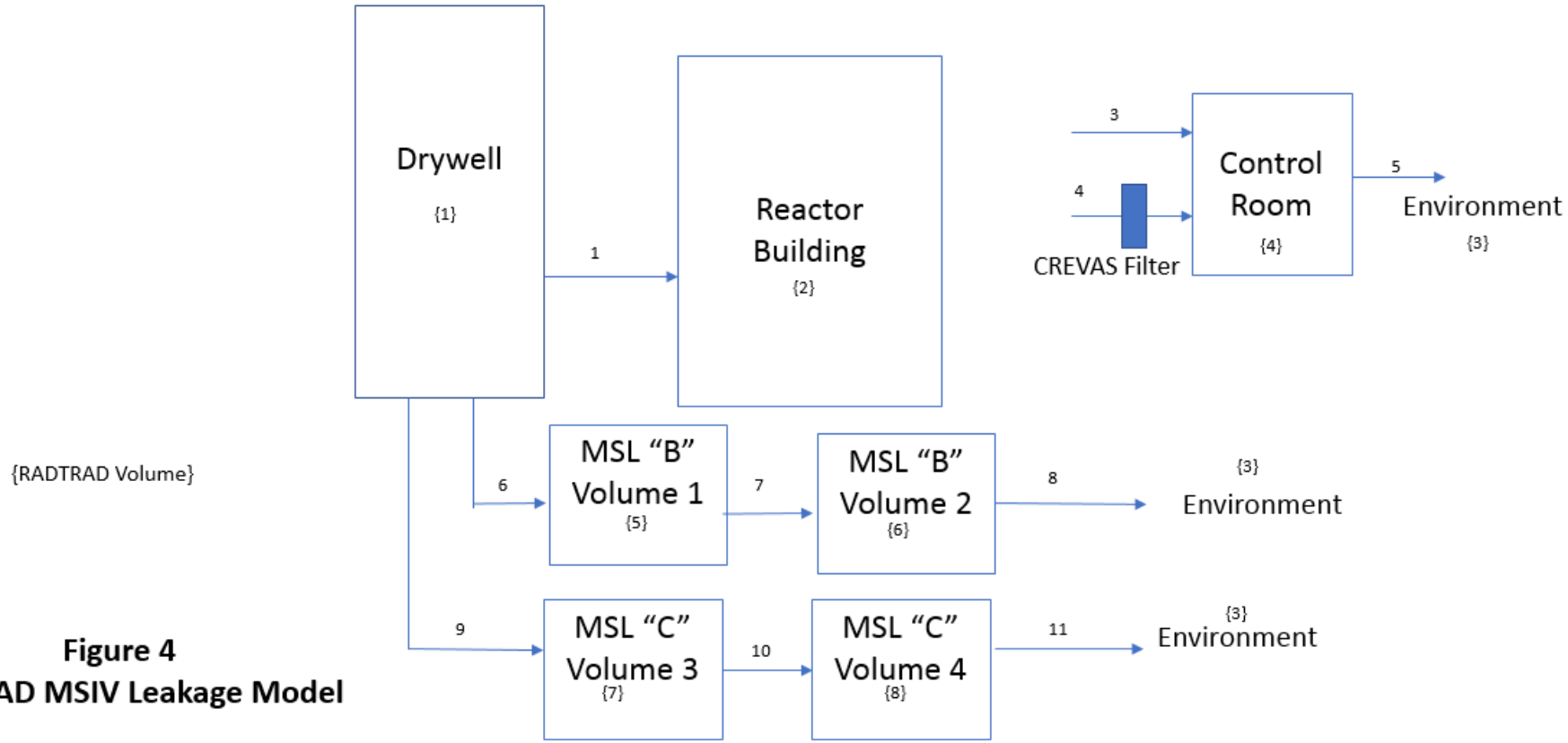


Figure 4
RADTRAD MSIV Leakage Model

Figure 5

Steam Line B Settling Velocity Probability Distribution

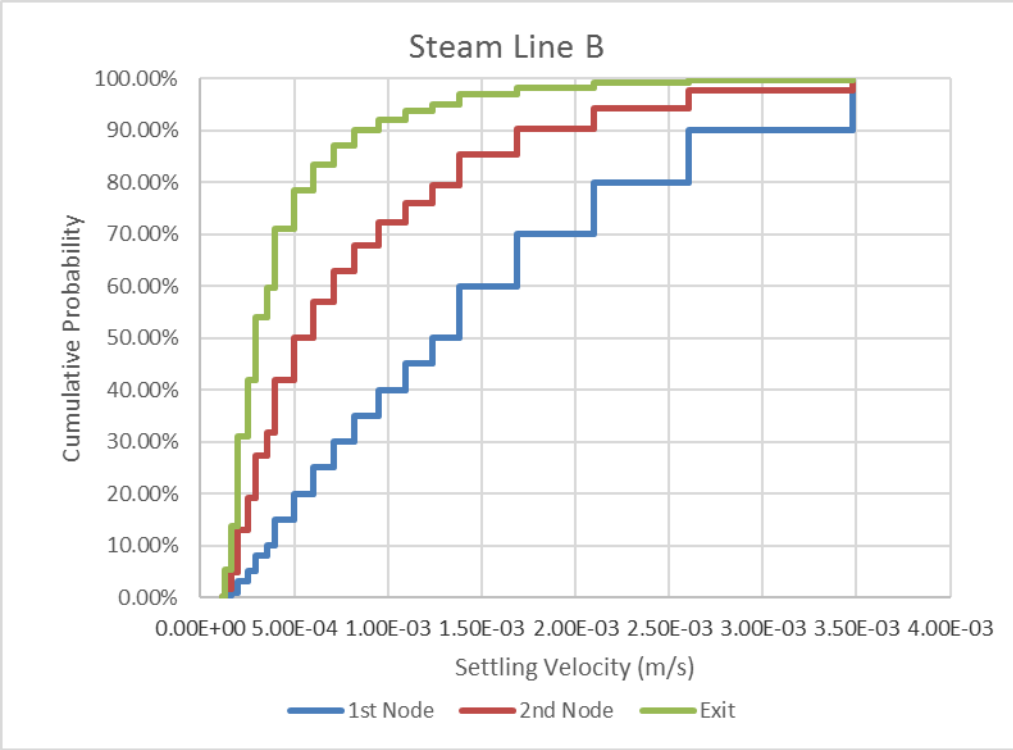
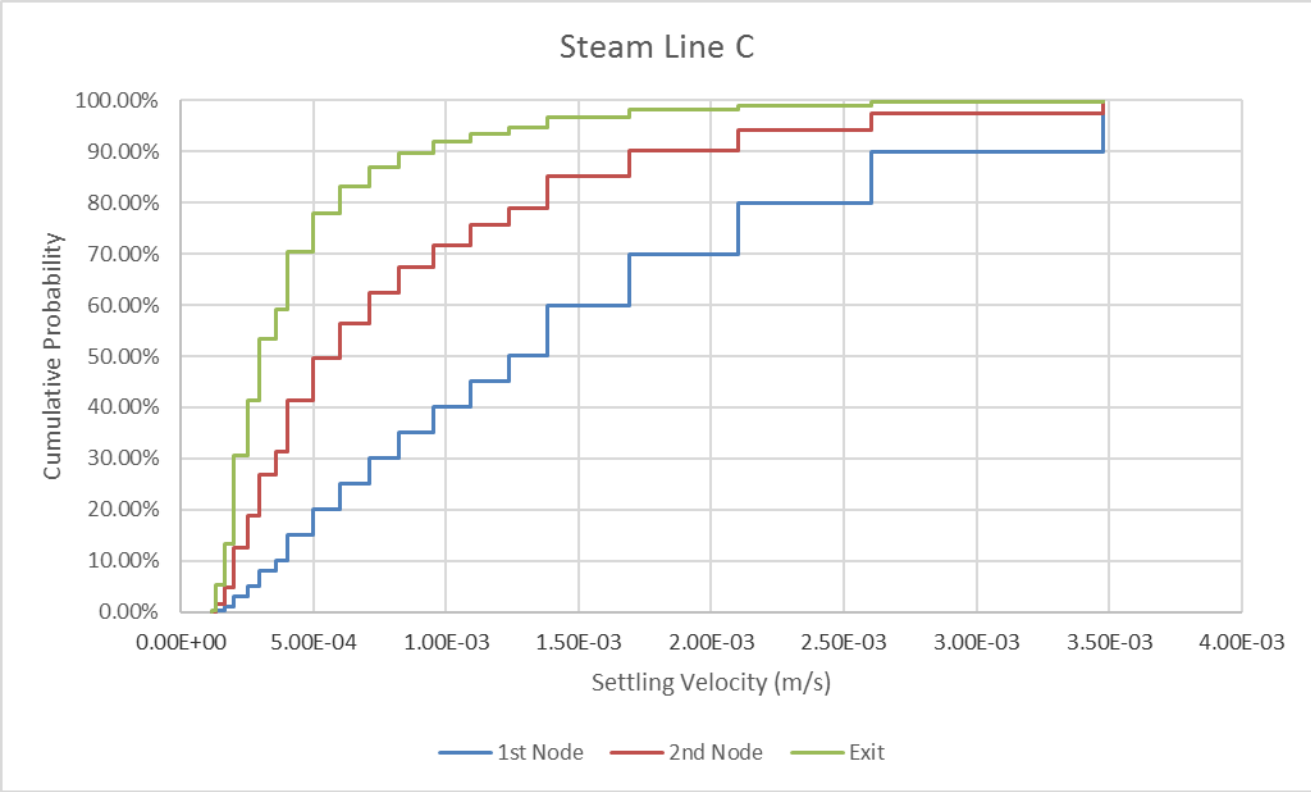


Figure 6

Steam Line C Settling Velocity Probability Distribution



12. ATTACHMENTS

Attachment 12.1 - Compliance with Regulatory Guide 1.183

Attachment 12.2 – RADTRAD Error Notices

Attachment 12.3 - NUREG-0800 Section 6.5.2 review items

Attachment 12.4 - RADTRAD Output File “JAFCL_spray_270.out””

Attachment 12.5 - RADTRAD Output File “JAFCL _270.out”

Attachment 12.6 - RADTRAD Output File “JAFESF_270.out”

Attachment 12.7 - RADTRAD Output File “JAFMS _270.out”

Attachment 12.8 - RADTRAD Output File “JAFMS_270_shine.out”

Attachment 12.9 – RADTRAD Output File “JAFCL_270_shine.out”

Attachment 12.10 - RADTRAD Nuclide Inventory File “JAFLOCA.nif”

Attachment 12.11 - RADTRAD Release Fraction and Timing File “bwr_dba.rft”

Attachment 12.12 – MicroShield Output Files from MicroShield runs: “JAF_2hr.msd”, “JAF_8hr.msd”, “JAF_24hr.msd”. “JAF_96hr.msd”, “JAF_720hr.msd”

Attachment 12.13 – Sensitivity Studies

Attachment 12.14 – Main Steam Volumes & Surface Areas for Plateout of Activity

1st Pass Attributes – General Overview

2nd Pass Attributes – Technical Review

3rd Pass Attributes – Administrative

12.1 Compliance with Regulatory Guide 1.183

Conformance with Regulatory Guide (RG) 1.183 Main Sections			
RG Section	RG Position (from RG 1.183)	JAF Analysis	Comments
3.1	The inventory of fission products in the reactor core and available for release to the containment should be based on the maximum full power operation of the core with, as a minimum, current licensed values for fuel enrichment, fuel burnup, and an assumed core power equal to the current licensed rated thermal power times the ECCS evaluation uncertainty. The period of irradiation should be of sufficient duration to allow the activity of dose-significant radionuclides to reach equilibrium or to reach maximum values. The core inventory should be determined using an appropriate isotope generation and depletion computer code such as ORIGEN 2 or ORIGEN-ARP. Core inventory factors (Ci/MWt) provided in TID 14844 and used in some analysis computer codes were derived for low burnup, low enrichment fuel and should not be used with higher burnup and higher enrichment fuels.	Conforms	ORIGEN-ARP based methodology was used to determine core inventory. The core source terms used in this calculation are the current design basis values as developed for the JAFJAF core average exposure (CAVEX) bounding source term. Power level used in the LOCA calculation is 2586.7 MWt to account for two percent uncertainty (2536 x 1.02 = 2586.7). Fission product inventory is based on an average core burnup of burnups of 12 to 43 GWD/MTU (Reference 9.4).
3.1	For the DBA LOCA, all fuel assemblies in the core are assumed to be affected and the core average inventory should be used. For DBA events that do not involve the entire core, the fission product inventory of each of the damaged fuel rods is determined by dividing the total core inventory by the number of fuel rods in the core. To account for differences in power level across the core, radial peaking factors from the facility's core operating limits report (COLR) or technical specifications should be applied in determining the inventory of the damaged rods.	Conforms	This calculation addresses LOCA, and all fuel assemblies in the core are assumed to be affected and the core average inventory is used.
3.1	No adjustment to the fission product inventory should be made for events postulated to occur during power operations at less than full rated power or those postulated to occur at the beginning of core life. For events postulated to occur while the facility is shutdown, e.g., a fuel handling accident, radioactive decay from the time of shutdown may be modeled.	Conforms	This calculation addresses a LOCA. Fission product inventories reflect full power operation.
3.2	The core inventory release fractions, by radionuclide groups, for the gap release and early in-vessel damage phases for DBA LOCAs are listed in Table 1 for BWRs and Table 2 for PWRs. These fractions are applied to the equilibrium core inventory described in Regulatory Position 3.1.	Conforms	The fractions from Table 1 are used.

Conformance with Regulatory Guide (RG) 1.183 Main Sections

RG Section	RG Position (from RG 1.183)	JAF Analysis	Comments
	Table 1 **BWR Core Inventory Fraction Released Into Containment** **Gap Release Phase / Early In-vessel Phase / Total** Noble Gases 0.05 0.95 1.0 Halogens 0.05 0.25 0.3 Alkali Metals 0.05 0.20 0.25 Tellurium Metals 0.00 0.05 0.05 Ba, Sr 0.00 0.02 0.02 Noble Metals 0.00 0.0025 0.0025 Cerium Group 0.00 0.0005 0.0005 Lanthanides 0.00 0.0002 0.0002		
3.2	For non-LOCA events, the fractions of the core inventory assumed to be in the gap for the various radionuclides are given in Table 3. The release fractions from Table 3 are used in conjunction with the fission product inventory calculated with the maximum core radial peaking factor. **Table 3[11]** **Non-LOCA Fraction of Fission Product Inventory in Gap** **Group / Fraction** I-131 0.08 Kr-85 0.10 Other Noble Gases 0.05 Other Halogens 0.05 Alkali Metals 0.12	Conforms	Not Applicable to LOCA.
3.3	Table 4 tabulates the onset and duration of each sequential release phase for DBA LOCAs at PWRs and BWRs. The specified onset is the time following the initiation of the accident (i.e., time = 0). The early in-vessel phase immediately follows the gap release phase. The activity released from the core during each release phase should be modeled as increasing in a linear fashion over the duration of the phase. For non-LOCA DBAs, in which fuel damage is projected, the release from the fuel gap and the fuel pellet should be assumed to occur instantaneously with the onset of the projected damage. **Table 4** **LOCA Release Phases** **PWRs / BWRs** **Phase / Onset / Duration / Onset / Duration** Gap Release 30 sec 0.5 hr 2 min 0.5 hr Early In-Vessel 0.5 hr 1.3 hr 0.5 hr 1.5 hr	Conforms	The BWR durations from Table 4 are used. LOCA releases are modeled in a linear fashion using RADTRAD. The two-minute gap release decay is not applied but is considered in the timing of the secondary containment (Reactor Building) drawdown.

Conformance with Regulatory Guide (RG) 1.183 Main Sections

RG Section	RG Position (from RG 1.183)	JAF Analysis	Comments
3.3	For facilities licensed with leak-before-break methodology, the onset of the gap release phase may be assumed to be 10 minutes. A licensee may propose an alternative time for the onset of the gap release phase, based on facility-specific calculations using suitable analysis codes or on an accepted topical report shown to be applicable for the specific facility. In the	Not Applicable	JAF does not use leak- before-break methodology for DBA analyses.
3.4	Table 5 lists the elements in each radionuclide group that should be considered in design basis analyses. **Table 5** **Radionuclide Groups** **Group** — **Elements** Noble Gases — Xe, Kr Halogens — I, Br Alkali Metals — Cs, Rb Tellurium Group — Te, Sb, Se, Ba, Sr Noble Metals — Ru, Rh, Pd, Mo, Tc, Co Lanthanides — La, Zr, Nd, Eu, Nb, Pm, Pr Sm, Y, Cm, Am Cerium — Ce, Pu, Np	Conforms	The nuclides used are the 60 identified as being potentially important dose contributors to total effective dose equivalent (TEDE) in the RADTRAD code, which encompasses those listed in RG 1.183, Table 5.
3.5	Of the radioiodine released from the reactor coolant system (RCS) to the containment in a postulated accident, 95 percent of the iodine released should be assumed to be cesium iodide (CsI), 4.85 percent elemental iodine, and 0.15 percent organic iodide. This includes releases from the gap and the fuel pellets. With the exception of elemental and organic iodine and noble gases, fission products should be assumed to be in particulate form. The same chemical form is assumed in releases from fuel pins in FHAs and from releases from the fuel pins through the RCS in DBAs other than FHAs or LOCAs. However, the transport of these iodine species following release from the fuel may affect these assumed fractions. The accident-specific appendices to this regulatory guide provide additional details.	Conforms	NRC guidance on chemical forms for fission products is applied for all accidents as specified here and in RG 1.183 appendices.
3.6	The amount of fuel damage caused by non-LOCA design basis events should be analyzed to determine, for the case resulting in the highest radioactivity release, the fraction of the fuel that reaches or exceeds the initiation temperature of fuel melt and the fraction of fuel elements for which the fuel clad is breached. Although the NRC staff has traditionally relied upon the departure from nucleate boiling ratio (DNBR) as a fuel damage criterion, licensees may propose other methods to the NRC staff, such as those based upon enthalpy deposition, for estimating fuel damage for the purpose	Not applicable to LOCA.	

Conformance with Regulatory Guide (RG) 1.183 Main Sections			
RG Section	RG Position (from RG 1.183)	JAF Analysis	Comments
	of establishing radioactivity releases.		
4.1.1	The dose calculations should determine the TEDE. TEDE is the sum of the committed effective dose equivalent (CEDE) from inhalation and the deep dose equivalent (DDE) from external exposure. The calculation of these two components of the TEDE should consider all radionuclides, including progeny from the decay of parent radionuclides that are significant with regard to dose consequences and the released radioactivity.	Conforms	TEDE is calculated, with significant progeny included.
4.1.2	The exposure-to-CEDE factors for inhalation of radioactive material should be derived from the data provided in ICRP Publication 30, "Limits for Intakes of Radionuclides by Workers" (Ref. 19). Table 2.1 of Federal Guidance Report 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion" (Ref. 20), provides tables of conversion factors acceptable to the NRC staff. The factors in the column headed "effective" yield doses corresponding to the CEDE.	Conforms	Federal Guidance Report 11 dose conversion factors (DCFs) are used.
4.1.3	For the first 8 hours, the breathing rate of persons offsite should be assumed to be 3.5×10^{-4} cubic meters per second. From 8 to 24 hours following the accident, the breathing rate should be assumed to be 1.8×10^{-4} cubic meters per second. After that and until the end of the accident, the rate should be assumed to be 2.3×10^{-4} cubic meters per second.	Conforms	The analysis uses values which correspond to the values in Section 4.1.3 of RG 1.183.
4.1.4	The DDE should be calculated assuming submergence in semi-infinite cloud assumptions with appropriate credit for attenuation by body tissue. The DDE is nominally equivalent to the effective dose equivalent (EDE) from external exposure if the whole body is irradiated uniformly. Since this is a reasonable assumption for submergence exposure situations, EDE may be used in lieu of DDE in determining the contribution of external dose to the TEDE. Table III.1 of Federal Guidance Report 12, "External Exposure to Radionuclides in Air, Water, and Soil" (Ref. 21), provides external EDE conversion factors acceptable to the NRC staff. The factors in the column headed "effective" yield doses corresponding to the EDE.	Conforms	Federal Guidance Report 12 conversion factors are used.
4.1.5	The TEDE should be determined for the most limiting person at the EAB. The maximum EAB TEDE for any	Conforms	The maximum two-hour EAB doses value are determined by

Conformance with Regulatory Guide (RG) 1.183 Main Sections			
RG Section	RG Position (from RG 1.183)	JAF Analysis	Comments
	two-hour period following the start of the radioactivity release should be determined and used in determining compliance with the dose criteria in 10 CFR 50.67. The maximum two-hour TEDE should be determined by calculating the postulated dose for a series of small time increments and performing a "sliding" sum over the increments for successive two-hour periods. The maximum TEDE obtained is submitted. The time increments should appropriately reflect the progression of the accident to capture the peak dose interval between the start of the event and the end of radioactivity release (see also Table 6).		RADTRAD for each release path. These results are added, even if the times do not coincide, for simplicity and conservatism. That is, worst case two-hour results in each RADTRAD run are added to obtain the total EAB dose.
4.1.6	TEDE should be determined for the most limiting receptor at the outer boundary of the low population zone (LPZ) and should be used in determining compliance with the dose criteria in 10 CFR 50.67.	Conforms	Analyses are based on X/Qs determined at the LPZ distance in conformance with Regulatory Guide 1.145.
4.1.7	No correction should be made for depletion of the effluent plume by deposition on the ground.	Conforms	No such credit is taken.
4.2.1	The TEDE analysis should consider all sources of radiation that will cause exposure to control room personnel. The applicable sources will vary from facility to facility, but typically will include: • Contamination of the control room atmosphere by the intake or infiltration of the radioactive material contained in the radioactive plume released from the facility, • Contamination of the control room atmosphere by the intake or infiltration of airborne radioactive material from areas and structures adjacent to the control room envelope, • Radiation shine from the external radioactive plume released from the facility, • Radiation shine from radioactive material in the reactor containment, • Radiation shine from radioactive material in systems and components inside or external to the control room envelope, e.g., radioactive material buildup in recirculation filters.	Conforms	The principal source of dose within the control room is due to airborne activity. This calculation considers radiation shine from sources external to the control room. The sources considered are: • Secondary Containment (Reactor Building) Airborne Activity • External Cloud (Plume) Activity • Control Room Intake Filter Activity The control room dose contribution from shine meets the guidance of RG 1.183.

Conformance with Regulatory Guide (RG) 1.183 Main Sections			
RG Section	RG Position (from RG 1.183)	JAF Analysis	Comments
4.2.2	The radioactive material releases and radiation levels used in the control room dose analysis should be determined using the same source term, transport, and release assumptions used for determining the EAB and the LPZ TEDE values, unless these assumptions would result in non- conservative results for the control room.	Conforms	The source term, transport, and release assumptions are the same for both the control room and offsite locations.
4.2.3	The models used to transport radioactive material into and through the control room, and the shielding models used to determine radiation dose rates from external sources, should be structured to provide suitably conservative estimates of the exposure to control room personnel.	Conforms	RADTRAD analyses are used to evaluate transport of material into and through the control room, and to determine the resulting personnel doses.
4.2.4	Credit for engineered safety features that mitigate airborne radioactive material within the control room may be assumed. Such features may include control room isolation or pressurization, or intake or recirculation filtration. Refer to Section 6.5.1, "ESF Atmospheric Cleanup System," of the SRP (Ref. 3) and Regulatory Guide 1.52, "Design, Testing, and Maintenance Criteria for Post-accident Engineered-	Conforms	Pressurization and intake filtration are credited in the LOCA accident analysis. The JAF Control Room does not provide recirculation filtration.
4.2.5	Credit should generally not be taken for the use of personal protective equipment or prophylactic drugs. Deviations may be considered on a case-by-case basis.	Conforms	Such credits are not taken.
4.2.6	The dose receptor for these analyses is the hypothetical maximum exposed individual who is present in the control room for 100% of the time during the first 24 hours after the event, 60% of the time between 1 and 4 days, and 40% of the time from 4 days to 30 days. For the duration of the event, the breathing rate of this	Conforms	The identified occupancy factors are used in dose analyses. A breathing rate of 3.5×10^{-4} cubic meters per second is used.
4.2.7	Control room doses should be calculated using dose conversion factors identified in Regulatory Position 4.1 above for use in offsite dose analyses. The DDE from photons may be corrected for the difference between finite cloud geometry in the control room and the semi-infinite cloud assumption used in calculating the dose conversion factors. The following expression may be used to correct the semi-infinite cloud dose, DDE_{∞} to a finite cloud dose, DDE_{finite}, where the control room is modeled as a hemisphere that has a volume, V, in cubic feet, equivalent to that of the control room (Ref. 22). $$DDE_{finite} = \frac{DDE_{\infty} V^{0.338}}{1173}$$	Conforms	The equation given is utilized for finite cloud correction when calculating external doses due to the airborne activity inside the control room. This formula is built into RADTRAD for use in control room dose assessments.

Conformance with Regulatory Guide (RG) 1.183 Main Sections			
RG Section	RG Position (from RG 1.183)	JAF Analysis	Comments
4.3	The guidance provided in Regulatory Positions 4.1 and 4.2 should be used, as applicable, in re-assessing the radiological analyses identified in Regulatory Position 1.3.1, such as those in NUREG-0737 (Ref. 2). Design envelope source terms provided in NUREG-0737 should be updated for consistency with the AST. In general, radiation exposures to plant personnel identified in Regulatory Position 1.3.1 should be expressed in terms of TEDE. Integrated radiation exposure of plant equipment should be determined using the guidance of Appendix I of this guide.	Conforms	The post-accident doses to personnel in the Technical Support Center at JAF are evaluated in a separate calculation. Integrated radiation exposure of plant equipment for equipment qualification purposes continues to be based on TID-14844 source terms in accordance with RG 1.183, Appendix I.
5.1.1	The evaluations required by 10 CFR 50.67 are re-analyses of the design basis safety analyses and evaluations required by 10 CFR 50.34; they are considered to be a significant input to the evaluations required by 10 CFR 50.92 or 10 CFR 50.59. These analyses should be prepared, reviewed, and maintained in accordance with quality assurance programs that comply with Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50.	Conforms	Analyses are performed under quality assurance programs meeting Appendix B to 10 CFR Part 50.
5.1.2	Credit may be taken for accident mitigation features that are classified as safety-related, are required to be operable by technical specifications, are powered by emergency power sources, and are either automatically actuated or, in limited cases, have actuation requirements explicitly addressed in emergency operating procedures. The single active component failure that results in the most limiting radiological consequences should be assumed. Assumptions regarding the occurrence and timing of a loss of offsite power should be selected with the objective of maximizing the postulated radiological consequences.	Conforms	This analysis generally relies on the same safety related accident mitigation features historically credited for LOCA analyses. The analyses take credit for SLC System operation for post-LOCA pH control. The SLC System is safety-related, required to be operable by technical specifications, and powered by emergency power. The SLC System is manually initiated from the main control room, as directed by the emergency operating procedures. Reference 9.3 addresses other criteria that have been established to assure the SLC system is reliable for this intended service. The analysis also takes credit for spray removal of aerosols and elemental iodine in the Drywell. See Section 7.2.

Conformance with Regulatory Guide (RG) 1.183 Main Sections			
RG Section	RG Position (from RG 1.183)	JAF Analysis	Comments
5.1.3	The numeric values that are chosen as inputs to the analyses required by 10 CFR 50.67 should be selected with the objective of determining a conservative postulated dose. In some instances, a particular parameter may be conservative in one portion of an analysis but be nonconservative in another portion of the same analysis.	Conforms	See input parameter discussions for further information
5.1.4	Licensees should ensure that analysis assumptions and methods are compatible with the AST and the TEDE criteria.	Conforms	Assumptions and methods are compatible with the AST methodology and TEDE criteria as documented in this calculation.
5.3	Atmospheric dispersion values (X/Q) for the EAB, the LPZ, and the control room that were approved by the staff during initial facility licensing or in subsequent licensing proceedings may be used in performing the radiological analyses identified by this guide. Methodologies that have been used for determining X/Q values are documented in Regulatory Guides 1.3 and 1.4, Regulatory Guide 1.145, "Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants," and the paper, "Nuclear Power Plant Control Room Ventilation System Design for Meeting General Criterion 19". The NRC computer code PAVAN implements Regulatory Guide 1.145 and its use is acceptable to the NRC staff. The methodology of the NRC computer code ARCON96 is generally acceptable to the NRC staff for use in determining control room X/Q values.	Conforms	Atmospheric dispersion values (X/Qs) for the EAB, the LPZ, and the Control Room that were previously approved by the Staff are used in the LOCA analysis. These atmospheric dispersion values were based on meteorological data from 1985-1992 and provided X/Qs for stack releases and ground releases from the Reactor Building. Because the MSIV ground level release is a new release pathway, new X/Qs were developed for the Control Room for this release pathway. This analysis also used the previously approved meteorological data from 1985-1992 to maintain consistency with the other atmospheric dispersion calculations of record. The ARCON96 computer code was used with these data to determine the control room atmospheric dispersion values.

Conformance with RG 1.183 Appendix A (Loss-of-Coolant Accident)			
RG Section	RG Position	JAF Analysis	Comments
1	Acceptable assumptions regarding core inventory and the release of radionuclides from the fuel are provided in Regulatory Position 3 of this guide.	Conforms	*Fission Product Inventory:* Core source terms are developed using ORIGEN-ARP based methodology. *Release Fractions:* Release fractions are per Table 1 of R.G. 1.183. *Timing of Release Phases:* Release Phases are per Table 4 of R.G. 1.183. *Radionuclide Composition:* Radionuclide grouping is per Table 5 of R.G. 1.183. *Chemical Form:* Treatment of release chemical form is per R.G. 1.183, Section 3.5.
2	If the sump or suppression pool pH is controlled at values of 7 or greater, the chemical form of radioiodine released to the containment should be assumed to be 95% cesium iodide (CsI), 4.85 percent elemental iodine, and 0.15 percent organic iodide. Iodine species, including those from iodine re-evolution, for sump or suppression pool pH values less than 7 will be evaluated on a case-by-case basis. Evaluations of pH should consider the effect of acids and bases created during the LOCA event, e.g., radiolysis products. With the exception of elemental and organic iodine and noble gases, fission products should be assumed to be in particulate form.	Conforms	The stated distributions of iodine chemical forms are used. The post-LOCA suppression pool pH has been evaluated [Reference 9.3], including consideration of the effects of acids and bases created during the LOCA event, the effects of key fission product releases, and the impact of SLCS injection. Suppression pool pH remains above 7 for at least 30 days.
3.1	The radioactivity released from the fuel should be assumed to mix instantaneously and homogeneously throughout the free air volume of the primary containment in PWRs or the drywell in BWRs as it is released. This distribution should be adjusted if there are internal compartments that have limited ventilation exchange. The suppression pool free air volume may be included provided there is a mechanism to ensure mixing between the drywell to the wetwell. The release into the containment or drywell should be assumed to terminate at the end of the	Conforms	See Item 3.7 below.

Conformance with RG 1.183 Appendix A (Loss-of-Coolant Accident)			
RG Section	RG Position	JAF Analysis	Comments
	early in-vessel phase.		
3.2	Reduction in airborne radioactivity in the containment by natural deposition within the containment may be credited. Acceptable models for removal of iodine and aerosols are described in Chapter 6.5.2, "Containment Spray as a Fission Product Cleanup System," of the Standard Review Plan (SRP), NUREG-0800 (Ref. A-1) and in NUREG/CR-6189, "A Simplified Model of Aerosol Removal by Natural Processes in Reactor Containments" (Ref. A-2). The latter model is incorporated into the analysis code RADTRAD (Ref. A-3).	Conforms	Credit is not taken for natural deposition. Removal by containment (drywell) sprays is considered in accordance with SRP 6.5.2.
3.3	Reduction in airborne radioactivity in the containment by containment spray systems that have been designed and are maintained in accordance with Chapter 6.5.2 of the SRP (Ref. A-1) may be credited. Acceptable models for the removal of iodine and aerosols are described in Chapter 6.5.2 of the SRP and NUREG/CR-5966, "A Simplified Model of Aerosol Removal by Containment Sprays"1 (Ref. A-4). This simplified model is incorporated into the analysis code RADTRAD (Refs. A-1 to A-3). The evaluation of the containment sprays should address areas within the primary containment that are not covered by the spray drops. The mixing rate attributed to natural convection between sprayed and unsprayed regions of the containment building, provided that adequate flow exists between these regions, is assumed to be two turnovers of the unsprayed regions per hour, unless other rates are justified. The containment building atmosphere may be considered a single, well-mixed volume if the spray covers at least 90% of the volume and if adequate mixing of unsprayed compartments can be shown. The SRP sets forth a maximum decontamination factor (DF) for elemental iodine based on the maximum iodine activity in the primary containment atmosphere when the sprays actuate, divided by the activity of iodine remaining at some time after	Not Applicable	Compliance of the JAF drywell spray system with the guidance of SRP 6.5.2 is discussed in Appendix 12.3. See Section 7.2 for a discussion of spray removal (removal coefficient, timing and decontamination factor).

Conformance with RG 1.183 Appendix A (Loss-of-Coolant Accident)			
RG Section	RG Position	JAF Analysis	Comments
	decontamination. The SRP also states that the particulate iodine removal rate should be reduced by a factor of 10 when a DF of 50 is reached. The reduction in the removal rate is not required if the removal rate is based on the calculated time-dependent airborne aerosol mass. There is no specified maximum DF for aerosol removal by sprays. The maximum activity to be used in determining the DF is defined as the iodine activity in the columns labeled "Total" in Tables 1 and 2 of this guide multiplied by 0.05 for elemental iodine and by 0.95 for particulate iodine (i.e., aerosol treated as particulate in SRP methodology).		
3.4	Reduction in airborne radioactivity in the containment by in- containment recirculation filter systems may be credited if these systems meet the guidance of Regulatory Guide 1.52 and Generic Letter 99-02 (Refs. A-5 and A-6). The filter media loading caused by the increased aerosol release associated with the revised source term should be addressed.	Not Applicable	No in-containment recirculation filter systems exist at JAF.
3.5	Reduction in airborne radioactivity in the containment by suppression pool scrubbing in BWRs should generally not be credited. However, the staff may consider such reduction on an individual case basis. The evaluation should consider the relative timing of the blowdown and the fission product release from the fuel, the force driving the release through the pool, and the potential for any bypass of the suppression pool (Ref. 7). Analyses should consider iodine re-evolution if the suppression pool liquid pH is not maintained greater than 7.	Conforms	No credit is taken for suppression pool scrubbing in the LOCA AST reanalysis. As indicated in the evaluation of Regulatory Position 2, above, analyses have been performed that determined that the suppression pool liquid pH is maintained greater than 7, and therefore iodine re- evolution is not a concern.
3.6	Reduction in airborne radioactivity in the containment by retention in ice condensers, or other engineering safety features not addressed above, should be evaluated on an individual case basis. See Section 6.5.4 of the SRP (Ref. A-1).	Not Applicable	JAF does not have ice condensers.
3.7	The primary containment (i.e., drywell for	Conforms.	Credit for leak rate reduction after 24

Conformance with RG 1.183 Appendix A (Loss-of-Coolant Accident)			
RG Section	RG Position	JAF Analysis	Comments
	Mark I and II containment designs) should be assumed to leak at the peak pressure technical specification leak rate for the first 24 hours. For PWRs, the leak rate may be reduced after the first 24 hours to 50% of the technical specification leak rate. For BWRs, leakage may be reduced after the first 24 hours, if supported by plant configuration and analyses, to a value not less than 50% of the technical specification leak rate. Leakage from subatmospheric containments is assumed to terminate when the containment is brought to and maintained at a subatmospheric condition as defined by technical specifications. For BWRs with Mark III containments, the leakage from the drywell into the primary containment should be based on the steaming rate of the heated reactor core, with no credit for core debris relocation. This leakage should be assumed during the two-hour period between the initial blowdown and termination of the fuel radioactivity release (gap and early in-vessel release phases). After two hours, the radioactivity is assumed to be uniformly distributed throughout the drywell and the primary containment.		hours, based on containment pressure, is determined as discussed in this calculation. JAF has a Mark I containment, and leakage from the drywell into secondary containment (Reactor Building) is based on a leakge of 1.5%v/day at the peak drywell pressure of 45 psig as given in Technical Specification 5.5.6.b. Rapid mixing of the wetwell and drywell is considered at two hours. The drywell leakage is reduced by 50% at 24 hours based on post-accident drywell pressure.
3.8	If the primary containment is routinely purged during power operations, releases via the purge system prior to containment isolation should be analyzed and the resulting doses summed with the postulated doses from other release paths. The purge release evaluation should assume that 100% of the radionuclide inventory in the reactor coolant system liquid is released to the containment at the initiation of the LOCA. This inventory should be based on the technical specification reactor coolant system equilibrium activity. Iodine spikes need not be considered. If the purge system is not isolated before the onset of the gap release phase, the release fractions associated with the gap release and early in- vessel phases should be considered as applicable.	Conforms	JAF has a purge and vent system which is not used for humidity, temperature, or airborne activity control during reactor power operations. The purge valves have mechanical stops to limit valve opening and these valves would be fully closed prior to the initiation of gap release at two-minutes.
4.1	Leakage from the primary containment should	Conforms	Secondary Containment (Reactor

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RG Section	RG Position	JAF Analysis	Comments
	be considered to be collected, processed by engineered safety feature (ESF) filters, if any, and released to the environment via the secondary containment exhaust system during periods in which the secondary containment has a negative pressure as defined in technical specifications. Credit for an elevated release should be assumed only if the point of physical release is more than two and one-half times the height of any adjacent structure.		Building) filtered release credit is taken at 20 minutes after the start of the accident based on the drawdown analysis. For EAB and LPZ doses, ground level releases are assumed. For Control Room doses, releases are based on an unfiltered ground level release from the Reactor Building until the differential pressure reaches -0.25 in w.g. (in 20 minutes) at which time the release is a filtered elevated release.
4.2	Leakage from the primary containment is assumed to be released directly to the environment as a ground-level release during any period in which the secondary containment does not have a negative pressure as defined in technical specifications.	Conforms	Releases from the primary containment are into the Reactor Building. For EAB and LPZ doses, releases are assumed to be elevated releases as was done in the previously approved atmospheric dispersion analyses. For Control Room doses, releases are based on an unfiltered ground level release from the Reactor Building until the differential pressure reaches -0.25 in w.g. (in 20 minutes) at which time the release is a filtered elevated release.
4.3	The effect of high wind speeds on the ability of the secondary containment to maintain a negative pressure should be evaluated on an individual case basis. The wind speed to be assumed is the 1-hour average value that is exceeded only 5% of the total number of hours in the data set. Ambient temperatures used in these assessments should be the 1-hour average value that is exceeded only 5% or 95% of the total numbers of hours in the data set, whichever is conservative for the intended use (e.g., if high temperatures are limiting, use those exceeded only 5%).	Conforms	The potential for high wind speeds impacting the ability of secondary containment to maintain negative pressures for wind speeds has been evaluated in the Reactor Building drawdown analysis (Ref. 9.17). This analysis was based on a wind speed of 20 miles per hour which occurs 5% of the time at nearby Syracuse, New York.
4.4	Credit for dilution in the secondary containment may be allowed when adequate means to cause mixing can be demonstrated. Otherwise, the leakage from the primary containment should be assumed to be transported directly to exhaust systems	Conforms	Credit is taken for mixing in 50% of the secondary containment (Reactor Building) volume. This analysis will credit 50% mixing consistent with SRP 6.5.3 and

Conformance with RG 1.183 Appendix A (Loss-of-Coolant Accident)			
RG Section	RG Position	JAF Analysis	Comments
	without mixing. Credit for mixing, if found to be appropriate, should generally be limited to 50%. This evaluation should consider the magnitude of the containment leakage in relation to contiguous building volume or exhaust rate, the location of exhaust plenums relative to projected release locations, the recirculation ventilation systems, and internal walls and floors that impede stream flow between the release and the exhaust.		Regulatory Guide 1.183, Appendix A, Section 4.4. The leakage from the Drywell to the Reactor Building is 1.5% v/day and the Drywell volume is 1.5E+05 ft^3. The flow rate from the primary containment is therefore approximately 56 cfm into a secondary containment volume of approximately 2,370,000 ft^3. The containment leakage, if any, would most likely be associated with piping penetrations which are located in the lower part of the containment or door seals. This small amount of containment leakage would have to diffuse through the secondary containment prior to being exhausted by the SGTS to the environment. Significant mixing would occur as the leakage travels through the auxiliary building. The SGT system would provide additional mixing by removing air from many different regions of the Reactor Building and exhausting to the environment. Based on the above, mixing in 50% of the secondary containment volume is justified.
4.5	Primary containment leakage that bypasses the secondary containment should be evaluated at the bypass leak rate incorporated in the technical specifications. If the bypass leakage is through water, e.g., via a filled piping run that is maintained full, credit for retention of iodine and aerosols may be considered on a case-by-case basis. Similarly, deposition of aerosol radioactivity in gas-filled lines may be considered on a case-by-case basis.	Conforms	There is no bypass leakage consideration at JAF. The JAF Technical Specifications do not provide a bypass leakage limit. The release of MSIV leakage at JAF has previously been based on the use of the MSLCS to insure filtration of the MSIV leakage by the SGTS. This system is no longer credited. MSIV leakage will have a separate technical specification limit of 270 scfh total leakage with not more than 135 scfh per line. The dose consequences for releases through this pathway (with piping deposition credit) are calculated separately considering the release as a ground level release. Because doses from MSIV leakage

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RG Section	RG Position	JAF Analysis	Comments
			are analyzed separately, they need not be considered as among the penetrations controlled under the Containment (Drywell) leakage limit (L_a). This will require an Appendix J exemption from considering MSIV leakage as part of La. ESF leakage is considered separately as well with the ESF leakage going into the Reactor Building.
4.6	Reduction in the amount of radioactive material released from the secondary containment because of ESF filter systems may be taken into account provided that these systems meet the guidance of Regulatory Guide 1.52 (Ref. A-5) and Generic Letter 99-02 (Ref. A-6).	Conforms	SGTS filters meet these criteria and are therefore credited at an efficiency of 97% for all iodine chemical forms and for 97% for aerosols.
5.1	With the exception of noble gases, all the fission products released from the fuel to the containment (as defined in Tables 1 and 2 of this guide) should be assumed to instantaneously and homogeneously mix in the primary containment sump water (in PWRs) or suppression pool (in BWRs) at the time of release from the core. In lieu of this deterministic approach, suitably conservative mechanistic models for the transport of airborne activity in containment to the sump water may be used. Note that many of the parameters that make spray and deposition models conservative with regard to containment airborne leakage are nonconservative with regard to the buildup of sump activity.	Conforms	With the exception of noble gases, all the fission products released from the fuel to the containment are assumed to instantaneously and homogeneously mix in the suppression pool at the time of release from the core.
5.2	The leakage should be taken as two times the sum of the simultaneous leakage from all components in the ESF recirculation systems above which the technical specifications, or licensee commitments to item 111.D.1.1 of NUREG-0737 (Ref. A-8), would require declaring such systems inoperable. The leakage should be assumed to start at the earliest time the recirculation flow occurs in these systems and end at the latest time the releases from these systems are terminated. Consideration should also be given to design	Conforms	The design basis 10 gpm leak rate is 2 times the acceptance criteria for the sum of the simultaneous leakage from all components in the ESF recirculation systems as addressed in the Program committed to in T.S. 5.5.2 "Primary Coolant Sources Outside Containment". Since certain ESF systems take suction immediately from the suppression pool, this leak path is assumed to start at time 0.

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RG Section	RG Position	JAF Analysis	Comments
	leakage through valves isolating ESF recirculation systems from tanks vented to atmosphere, e.g., emergency core cooling system (ECCS) pump miniflow return to the refueling water storage tank.		
5.3	With the exception of iodine, all radioactive materials in the recirculating liquid should be assumed to be retained in the liquid phase.	Conforms	With the exception of iodine, all radioactive materials in ESF liquids are assumed to be retained in the liquid phase.
5.4	If the temperature of the leakage exceeds 212°F, the fraction of total iodine in the liquid that becomes airborne should be assumed equal to the fraction of the leakage that flashes to vapor. This flash fraction, FF, should be determined using a constant enthalpy, h, process, based on the maximum time- dependent temperature of the sump water circulating outside the containment: $$FF = \frac{h_{f1} - h_{f2}}{h_{fg}}$$ *Where:* h_{f1} is the enthalpy of liquid at system design temperature and pressure; h_{f2} is the enthalpy of liquid at saturation conditions (14.7 psia, 212°F); and h_{fg} is the heat of vaporization at 212°F.	Not Applicable	The temperature of the leakage does not exceed 212°F.
5.5	If the temperature of the leakage is less than 212°F or the calculated flash fraction is less than 10%, the amount of iodine that becomes airborne should be assumed to be 10% of the total iodine activity in the leaked fluid, unless a smaller amount can be justified based on the actual sump pH history and area ventilation rates.	Conforms	ESF leakage into the Reactor Building is assumed to flash such than 10% of the total iodine activity in the leaked fluid is assumed airborne.
5.6	The radioiodine that is postulated to be available for release to the environment is assumed to be 97% elemental and 3% organic. Reduction in release activity by dilution or holdup within buildings, or by ESF ventilation filtration systems, may be credited where applicable. Filter systems used in these applications should be evaluated against the guidance of Regulatory Guide 1.52 (Ref. A-5) and Generic Letter 99-02 (Ref. A-6).	Conforms	The credited SGTS and Control Room intake charcoal and HEPA filters meet the requirements of R.G. 1.52 and Generic Letter 99-02. These are credited at 97% efficiency for elemental and organic iodines. Aerosol removal efficiencies are assumed to be 97% based on the HEPA/charcoal combination. The above filter efficiencies are the historical design basis and are unchanged as a result of AST.

Conformance with RG 1.183 Appendix A (Loss-of-Coolant Accident)			
RG Section	RG Position	JAF Analysis	Comments
6.1	For the purpose of this analysis, the activity available for release via MSIV leakage should be assumed to be that activity determined to be in the drywell for evaluating containment leakage (see Regulatory Position 3). No credit should be assumed for activity reduction by the steam separators or by iodine partitioning in the reactor vessel.	Conforms	Because the JAF MSLCS will not be credited in this accident analysis, MSIV leakage will be considered an unfiltered radioactivity release pathway, with piping deposition credit, and the radiological consequences of such a release are analyzed. The radioactivity release from the fuel is assumed to instantaneously and homogeneously mix throughout the drywell air space. The MSIV leakage is assumed to be from the drywell air space.
6.2	All the MSIVs should be assumed to leak at the maximum leak rate above which the technical specifications would require declaring the MSIVs inoperable. The leakage should be assumed to continue for the duration of the accident. Postulated leakage may be reduced after the first 24 hours, if supported by site-specific analyses, to a value not less than 50% of the maximum leak rate.	Conforms	MSIV leakage assumed in this accident analysis is 270 scfh for all steam lines and 135 scfh for any one line. A reduction in leakage of 50% is assumed at 24 hours, based on expected containment pressures at that time. No further reduction in leak rate is credited after the first 24-hours.
6.3	Reduction of the amount of released radioactivity by deposition and plateout on steam system piping upstream of the outboard MSIVs may be credited, but the amount of reduction in concentration allowed will be evaluated on an individual case basis. Generally, the model should be based on the assumption of well-mixed volumes, but other models such as slug flow may be used if justified.	Conforms	Modeling of deposition and plateout for MSIV piping is based on the assumption of 2 well mixed volumes for any one pipe line providing a leak path. The formulation for determining activity removal from a well-mixed node is based on that developed in AEB-98-03 and used as described in this calculation.
6.4	In the absence of collection and treatment of releases by ESFs such as the MSIV leakage control system, or as described in paragraph 6.5 below, the MSIV leakage should be assumed to be released to the environment as an unprocessed, ground-level release. Holdup and dilution in the turbine building should not be assumed.	Conforms	Since MSLCS is no longer credited, no ESFs are assumed to be available to collect or treat MSIV leakage. Releases are assumed to be from the Seismic Class I Turbine Stop Valves (TSVs) without credit for holdup or dilution in the condenser or turbine building. The release is treated as a ground level release for offsite dose assessment.

Conformance with RG 1.183 Appendix A (Loss-of-Coolant Accident)			
RG Section	RG Position	JAF Analysis	Comments
6.5	A reduction in MSIV releases that is due to holdup and deposition in main steam piping downstream of the MSIVs and in the main condenser, including the treatment of air ejector effluent by offgas systems, may be credited if the components and piping systems used in the release path are capable of performing their safety function during and following a safe shutdown earthquake (SSE). The amount of reduction allowed will be evaluated on an individual case basis. References A-9 and A-10 provide guidance on acceptable models.	Conforms	Main steam piping downstream of the MSIVs to the TSVs is credited. No credit is taken for holdup and deposition in piping downstream of the TSVs, or in the condenser. Aerosol removal in steam piping is evaluated based on AEB-98-03 well-mixed modeling treatment with some additional conservatisms. For elemental iodine, RG 1.183's Reference A-9 is considered for elemental iodine deposition velocities, resuspension rates and fixation rates. The deposition velocities are used in the well-mixed model formulation in AEB-98-03 that is analogous for aerosols or elemental iodine. This modeling is described in detail in this calculation. The impacts of resuspension from deposited elemental iodine is treated as organic iodine and instantly released.
7.0	The radiological consequences from post-LOCA primary containment purging as a combustible gas or pressure control measure should be analyzed. If the installed containment purging capabilities are maintained for purposes of severe accident management and are not credited in any design basis analysis, radiological consequences need not be evaluated. If the primary containment purging is required within 30 days of the LOCA, the results of this analysis should be combined with consequences postulated for other fission product release paths to determine the total calculated radiological consequences from the LOCA. Reduction in the amount of radioactive material released via ESF filter systems may be taken into account provided that these systems meet the guidance in Regulatory Guide 1.52 (Ref. A-5) and Generic Letter 99-02 (Ref. A-6).	Conforms	Containment purging as a combustible gas or pressure control measure is not required nor credited in any design basis analysis for 30 days following a design basis LOCA at JAF. See Section 2.1.5. Also see the RG Section 3.8 discussion in this Table.

12.2 RADTRAD Error Notices

RADTRAD Error Notice Number	Error Description	Discussion
1	When a user runs requests that a control room be added to the dose model the GUI will generate a default breathing rate. If the user has previously specified a delay time, then the default time versus breathing rate table has incorrect time values (they are not updated). The end result is that RADTRAD will not execute (the code crashes).	The control room model has the correct breathing rate and the code executes as intended.
2	Calculation to determine the Worst 2-hour EAB dose can exceed array length in at least one case. The resulting overwrite causes an incorrect value of the time to be reported by the code. This does not result in erroneous dose values.	The dose values reports are not impacted.
3	When a user runs the GUI version through the acceptance test case sequence, some results are different from those calculated by the batch version. For example test case 14 after test case 13 will have additional time periods edited, dose results are not affected.	This error does not impact code results.
4	When a user runs the GUI version through the acceptance test case sequence, some results are different from those calculated by the batch version. For example test case 1a after test case 19 will have an incorrect value for the worst 2 hour EAB dose. The edited value at 2 hours is correct.	This error does not impact code results.
5	When a user chooses the Powers deposition models (either sprays or natural decontamination) they go to the Aerosol Model Screen. The GUI indicates that the percentile option has been initialized, but is not and results in a termination when the calculate button is initiated.	This error does not impact code results.
7	The addition of offsite dose calculations to the control room dose calculation reduced the control room dose by a factor of 2.	The control room χ/Q time steps align with the other dose locations. No impact on results.

RADTRAD Error Notice Number	Error Description	Discussion
8	Unknown to the user, the RADTRAD 3.03 GUI automatically modifies any compartment, using Powers' Natural Deposition, to the "PWR Design Basis" containment model, whenever the panel for that given compartment is opened. Therefore, the compartment panel cannot be viewed without one having to return the selection to whatever containment model that the user desired. (Mscisz) The program has a case set-up screen for options where the user selects the reactor type to determine fission product species for the event and a separate selection of the Powers aerosol decontamination factor. Normally if a case is created, saved, and then executed the selected options are used. If a case is re-opened, to check or correct the data inputs for example, the program automatically resets the options to PWR - DBA and 10th percentile Powers aerosol decontamination factor. If the case is then run without checking these options then the case is executed with the defaults.(Re)	The Powers' natural deposition model is not used.
9	Do you know of any previously reported error in RADTRAD associated with the use of all 10 Volumes? Two of us have separately run into problems when specifying a 10th volume in two separate models. It seems that when the 10th volume is specified, it somehow alters the source term associated with Volume #1.	Nine compartments are used and this error was not experienced during model creation.
10	When running RADTRAD with reduced time steps the code generates different inventories for some nuclides	The code is run with the acceptable time step of 0.1 hour in the first time period as discussed in the error notice.
11	When running RADTRAD with only Tellurium nuclides why is the concentration of iodine daughters so low?	RADTRAD runs with only Tellurium nuclides are not made.
12	When running RADTRAD with Powers' Natural Deposition model, the code generates inventories at 24 hours that may vary by as much as 2% when I add time intervals.	The Powers' natural deposition model is not used.

RADTRAD Error Notice Number	Error Description	Discussion
13	When running RADTRAD with abrupt flow changes the user can affect dose results by changing the time steps. For example, flow out a PORV is stopped after a few minutes and then that flow is re-directed to a secondary containment. If the time steps are uncontrolled, excessive release from the secondary can occur. This significantly affects the results from TID source terms.	The RADTRAD model includes flow changes but time steps are adequate to minimize the effects on the results. Any effects of this error are in the conservative direction, so no negative impact on results.
14	When using the Powers' spray model the use of an alpha =1 (total compartment is sprayed) is inconsistent with the Powers' model as developed in NUREG/CR-5966 and as implemented in RADTRAD.	The Powers' spray model is not used.
15	When using the natural deposition User input option, if the User does not specify a set of aerosol deposition values the code fails.	Natural deposition is not used.
16	RADTRAD has the capability to analyze the decay of radionuclides from the time of shutdown. The ability was first implemented in version 2.02 with full implementation in version 3.02 and additional modification to allow multiple source term compartments was implemented in version 3.03. All options were separate effects tested in version 3.03. This program error was found to only occur if the user selects: (I) a timed release, i.e. TIO and puff releases (as in a fuel handling or main steam line break scenario) are not affected, (2) more than one compartment receives a part of the released radionuclides (common in sprayed containments), and (3) radionuclide decay. The combination of timed release, decay, and multiple compartments was not correctly implemented; instead the initial fuel inventory is decayed each time a source compartment is entered. This error means that the nuclides available for release will be reduced. If the user has two source term compartments the radionuclides available for release at 1 hour is reduced to 58% of what is correct and when there are 3 source term compartments to approximately 34% - this is non-conservative.	More than one compartment does not receive the release.

RADTRAD Error Notice Number	Error Description	Discussion
17	RADTRAD has the capability for removing aerosols due to natural deposition. In the implementation of the Powers model the code assigned a removal coefficient of 0.01 to be used beyond the end of the approximately one day correlation, it should have been 0.0. This allows more particulate to be deposited within the compartment, thus less is available for release to the environment.	The Powers' natural deposition model is not used.
18	1. If the user selects the user-defined coefficients Natural Deposition Aerosol Model, no values of deposition lambda or decontamination factor are included in the output file even if the show results control option to include runtime model information is enabled. Furthermore, in RADTRAD 3.10 only, if the user selects the Henry natural deposition model with runtime model information requested, the output is mislabeled as "user removal coefficients" instead of "Henry's correlation." 2. According to Section 2.3.2 of the Alion-RADTRAD 3.10 User's Manual (ALION-UGMRADTRAD- 2408-02), "It is not consistent to select both Sprays and Natural Deposition to be active at the same time in the same compartment." However, the RADTRAD software allows users to model both Sprays and Natural Deposition in the same compartment without a warning or error statement. Furthermore, when the user selects both Sprays and Natural Deposition for a single compartment with the control option to show results – include runtime model information enabled, the values of deposition lambda for the Sprays model may be erroneously reported as the deposition lambda values for Natural Deposition in addition to Sprays. Also note that the reported decontamination factors are for each individual model and may be difficult to interpret. The decontamination factor for Sprays is the amount of a transport group's radionuclides in the sump pool and containment atmosphere divided by just what is in the containment atmosphere. Similarly, the decontamination factor for Natural Deposition is the amount of a transport group's radionuclides deposited on surfaces and in the containment atmosphere divided by what is in the containment atmosphere. Since both removal models deplete the containment atmosphere source term, the decontamination factors reported will be greater than if only a single model was used. In order to calculate a combined decontamination factor, the values for Sprays and Natural Deposition should be	Natural deposition coefficients are not used in the model. Therefore, there is no impact on results.

RADTRAD Error Notice Number	Error Description	Discussion
	added together and then a value of 1.0 should be subtracted. The user must ensure that undue credit for radionuclide removal is not taken by implementing both Sprays and Natural Deposition.	

12.3 NUREG-0800 Section 6.5.2 review items

A comparison between the NUREG-0800 Section 6.5.2 review items and the discussion of how these items are addressed by the JAF containment spray system is provided in the following table.

NUREG-0800 Review Procedure Item	Discussion
1. Design Requirements for Fission Product Removal. The containment spray system should be designed in accordance with the requirements of ANSI/ANS 56.5, except that the requirements for any spray additive or other pH control system in this reference need not be followed.	The containment spray system meets the requirements of ANS/ANSI 56.5 as it relates to the calculation of fission product removal following a LOCA. This includes geometry, physical features, flow characteristics, and containment mixing DBD-010 (Ref. 9.18). The relevant requirements taken from Section 6.3, 6.3.1 and 6.3.2 of ANSI/ANSI 56.5 and an explanation on how these requirements are met are as follows: “The performance requirements for the fission product removal function of the containment spray system usually coincide with the requirements for the pressure suppression and heat removal functions. However, because of the greater sensitivity of the fission product removal function to such system parameters as drop size, solution chemistry, and the containment volume covered by the spray, the fission product removal function places additional restraints on the design.” The containment spray system is already credited for pressure suppression and heat removal GE-NE-T23-00766-00-01 (Ref. 9.11). The following specific requirements related to the fission product removal function are also met. “Drop Size. Since the drop size spectrum emitted by the spray nozzles is a key parameter in determining the fission product removal effectiveness, detailed drop size information shall be obtained for the nozzles selected for this function. This information, based upon tests, shall include: (1) A histogram or tabulated data of the spatial drop diameter spectrum obtained from a representative section of the spray cone produced by the nozzle. Each drop diameter increment shall contain a statistically meaningful number of observations. Drop diameter increments shall be 100 microns or less. (2) Information concerning the source of the data and their expected accuracy and repeatability.” Detailed drop size information for the spray nozzles is given in Figure 1 of 22A1472AC, Rev. 2 (Ref.

NUREG-0800 Review Procedure Item	Discussion
	9.59). The aerosol removal efficiency is calculated using the conservative method in NUREG-0800 as discussed in Section 7.11 of SRP 6.5.2. "(1) The spray nozzles shall be located as high in the containment as practicable, to maximize the spray drop fall distance." The two levels of spray nozzles are located as high in the containment building as practical and are both located above the piping that could be the source of the LOCA FP-14K, Revision 6 (Ref. 9.21). The lower spray nozzle header is conservatively used to calculate fall height. "(2) The spray nozzles and distribution headers shall be arranged such that the volume of the containment covered by the spray is maximized. If containment structures (e.g., a concrete operating floor) obstruct containment coverage by the spray headers in the containment dome, an evaluation shall be made to determine the need for additional spray headers to reach the regions below these obstructions." There is not a concrete operating floor between the spray headers and the drywell floor. The containment structure allows the spray to reach the drywell floor FP-27B (Ref. 9.22), FM-1H (Ref. 9.23). "(3) Nozzle and header arrangement shall maximize the uniformity of the spray solution mass flux in the sprayed region. In the region above the operating deck, an unsprayed annulus adjacent to the containment wall shall be avoided." Each spray nozzle is equally spaced around the radius of the drywell such that the spray uniformity is maximized and an unsprayed annulus adjacent to the drywell wall is avoided DBD-010 (Ref. 9.11). "(4) Coverage analysis shall include the effect of the post-accident atmosphere on the spray drop trajectories, including the post-accident containment conditions resulting in the highest calculated atmospheric density." The spray nozzles are designed to function in the post-accident containment atmosphere DBD-010 (Ref. 9.11). Removal efficiencies based on NUREG-0800 Section 6.5.2 are used which are conservative to use in the post-accident environment. "(5) Overlapping nozzle patterns are usually necessary to distribute the required spray flow rate; however, overlapping patterns for different types of nozzles producing widely different drop sizes shall be minimized. This is due to the fact that sprays

NUREG-0800 Review Procedure Item	Discussion
	with widely different drop sizes tend to coalesce and this is not desirable." The same nozzles are used throughout the drywell such that coalescence is minimized DBD-010 (Ref. 9.11). "(6) Complete spray coverage of a region shall be assumed if 90 percent of the volume or 90 percent of the cross-sectional area with the fully developed spray pattern is directly sprayed. Spray coverage data shall be corrected for post-accident conditions to account for the reduced spray coverage in higher density atmospheres. These criteria shall apply when full credit for fission product removal is desired without additional analysis." Due to the uniformity of the spray nozzles DBD-010 (Ref. 9.11)., it is expected that at least 90% of the cross-sectional area of the drywell air space is sprayed. However, only approximately 20% of the drywell volume is assumed to be sprayed because the lower spray nozzle elevation is credited. The spray nozzles are designed to function in the post-accident containment atmosphere such that reduced spray coverage due to a higher density environment is minimized DBD-010 (Ref. 9.11). "(7) Spray nozzles shall be arranged and mounted on the piping so as to minimize the potential for nozzle blockage." The spray nozzles are mounted on the piping so as to mimize the potential for nozzle blockage FP-14H (Ref. 9.60). Nozzle blockage is also managed by flow testing through the nozzles with air every 10 years (Reference 9.61).
A. System Operation. The containment spray system should be designed to be initiated automatically by an appropriate accident signal and transferred automatically from the injection mode to the recirculation mode to ensure continuous operation until the design objectives of the system have been achieved. In all cases, the operating period should not be less than 2 hours. Additives to the spray solution may be initiated manually or automatically or stored in the containment sump to be dissolved during the spray injection period.	The containment spray system is not operated automatically to prevent flow diversion from the residual heat removal system in low pressure coolant injection mode. At 10 minutes after the LOCA GE-NE-T2300766-00-01 (Ref. 9.10), flow is diverted to containment sprays to reduce containment pressure and scrub airborne activity. The manual actions required to initiate sprays at 10 minutes following a LOCA meet the requirements of Information Notice 97-78. However, the LOCA analysis assumes manual actuation at 20-minutes.
B. Coverage of Containment Building Volume. To ensure full spray coverage of the containment building volume, the following should be observed: i. The spray nozzles should be located as	The two levels of spray nozzles are located as high in the Drywell as practical and are both located above the piping that could be the source of the LOCA. The lower spray nozzle header is used to calculate fall height which is used in determining

NUREG-0800 Review Procedure Item	Discussion
high in the containment building as practicable to maximize the spray drop fall distance.	the spray removal coefficient.
ii. The layout of the spray nozzles and distribution headers should be such that the cross-sectional area of the containment building covered by the spray is as large as practicable and the spray produced is a nearly homogeneous distribution in the containment building space. Unsprayed regions in the upper containment building and, in particular, an unsprayed annulus adjacent to the containment building liner should be avoided wherever possible.	The nozzles produce a spray that is nearly homogeneously distributed in the containment building space and an unsprayed annulus adjacent to the containment wall is not produced DBD-010 (Ref. 9.11).
iii. In designing the layout of the spray nozzle positions and orientations, the effects of the postaccident atmosphere should be considered, including the effects of postaccident conditions that result in the maximum possible density of the containment atmosphere.	The spray nozzles are designed to function in the post-accident containment atmosphere DBD-010 (Ref. 9.11).
C. Promotion of Containment Building Atmosphere Mixing. Because the effectiveness of the containment spray system depends on a well-mixed containment atmosphere, consideration should be given to all design features enhancing postaccident mixing.	The containment is well mixed following the LOCA per Section 7.3.
D. Spray Nozzles. The nozzles used in the containment spray system should be designed to minimize the possibility of clogging while producing drop sizes effective for iodine absorption. The nozzles should not have internal moving parts such as swirl vanes and turbulence promoters. They should not have orifices or internal restrictions which narrow the flow passage to less than 0.64 cm (0.25 inch) in diameter.	The nozzles used do not have orifices or internal restrictions which narrow the flow passage to less than 0.25 inches in diameter The spray nozzles are designed to minimize the possibility of clogging, are air tested every 10 years to ensure they are not clogged (Ref. 9.61).
E. Spray Solution. The partition of iodine between liquid and gas phases and retention of iodine in the liquid is enhanced by the alkalinity of the solution. The spray system should be designed so that the spray solution is within material compatibility constraints. Iodine-scrubbing credit is given for spray solutions whose chemistry, including any additives, has been demonstrated to be effective for	The spray solution remains above a pH of 7 throughout the entire accident duration. Maintaining a pH above 7 has been demonstrated to be effective for iodine absorption and retention (Ref. 9.3).

NUREG-0800 Review Procedure Item	Discussion
iodine absorption and retention under postaccident conditions.	
F. Containment Sump Solution Mixing. The containment sump should be designed to permit mixing of emergency core cooling system (ECCS) and spray solutions. Drains to the engineered safety features sump should be provided for all regions of the containment which would collect a significant quantity of the spray solution. Alternatively, allowance should be made for “dead” volumes in the determination of the pH of the sump solution and the quantities of additives injected.	The suppression pool is sufficiently mixed and has been demonstrated to be maintained above a pH of 7 throughout the accident (Ref. 9.3).
G. Containment Sump and Recirculation Spray Solutions. The pH of the aqueous solution collected in the containment sump after completion of injection of containment spray and ECCS water and all additives for reactivity control, fission product removal, or other purposes should be maintained at a level sufficiently high to provide assurance that significant long-term iodine reevolution does not occur. The expected long-term partition coefficient is used to calculate the long-term iodine retention. Long-term iodine retention may be assumed only when the equilibrium sump solution pH, after mixing and dilution with the primary coolant and ECCS injection, is above 7. This pH value should be achieved by the onset of the spray recirculation mode.	The spray solution remains above a pH of 7 throughout the entire accident duration and is achieved by the onset of the spray recirculation mode. (Ref. 9.3).
H. Storage of Additives. The design should provide facilities for the long-term storage of any spray additives. These facilities should be designed so that the additives required to achieve the design objectives of the system are stored in a state of continuous readiness whenever the reactor is critical for the design life of the plant. The storage facilities should be designed to prevent freezing, precipitation, chemical reaction, and decomposition of the additives. For sodium hydroxide storage tanks, heat tracing of tanks and piping is required whenever exposure to temperatures below 4.5 °C (40 °F) is predicted. An inert cover gas should be provided for solutions that may deteriorate when exposed to air.	The standby liquid control system stores the buffering solution in a continuous state of readiness (Ref. 9.3).

NUREG-0800 Review Procedure Item	Discussion
I. Single Failure. The system should be able to function effectively and meet all the criteria in Subsection II with a single failure of an active component in the spray system, in any of its subsystems, or in any of its support systems.	The containment spray system functions effectively and meets all criteria in Subsection II of SRP 6.5.2 with a single failure of an active component in the spray system, in any of its subsystems, or in any of its support systems DBD-010 (Ref. 9.11).

12.4 RADTRAD Output File “JAFCL_spray _270.out”

```
 ########################################################################
    RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 12:02:26
 ########################################################################

 ########################################################################
                      File information
 ########################################################################

 Plant file           = C:\radtrad3.03\Fitz\JAFCL_spray_270.psf
 Inventory file       = c:\radtrad3.03\fitz\jafloca.nif
 Release file         = c:\radtrad3.03\defaults\bwr_dba.rft
 Dose Conversion file = c:\radtrad3.03\defaults\fgr11&12.inp




     #####    ####   #####    #  #     #  #####   #     #  #####
     #    #  #       #        #  ##    #  #    #  #     #    #
     #    #  #       #        #  # #   #  #    #  #     #    #
     #####    ####   ####     #  #  #  #  #####   #     #    #
     #            #  #        #  #   # #  #       #     #    #
     #            #  #        #  #    ##  #       #     #    #
     #         ####   #        #  #     #  #        ####     #


 Radtrad 3.03 4/15/2001
 Containment Leakage from Drywell & Wetwell (DW+WW) Using CAVEX Core Inventory -
Containment Shine Dose
 Nuclide Inventory File:
 c:\radtrad3.03\fitz\jafloca.nif
 Plant Power Level:
  2.5867E+03
 Compartments:
   6
 Compartment 1:
 DW
   3
  1.5000E+05
   1
   0
   0
   0
   0
 Compartment 2:
 RB
   3
  1.1850E+06
   0
   0
   0
   0
   0
 Compartment 3:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
   0
 Compartment 4:
 CR
   1
  1.0100E+05
   0
   0
   0
```

```
  0
  0
Compartment 5:
MSL "B" Volume 1
  3
 1.0000E+00
  0
  0
  0
  0
  0
Compartment 6:
MSL "C" Volume 3
  3
 1.0000E+00
  0
  0
  0
  0
  0
Pathways:
  7
Pathway 1:
DW to  RB
  1
  2
  4
Pathway 2:
RB to Environment
  2
  3
  2
Pathway 3:
Environment to CR Unfiltered
  3
  4
  2
Pathway 4:
Environment to  CR Filtered
  3
  4
  2
Pathway 5:
CR to  Environment - Exhaust
  4
  3
  2
Pathway 6:
DW to  MSL "B" Volume 1
  1
  5
  1
Pathway 7:
DW to  MSL "A" Volume 3
  1
  6
  1
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\radtrad3.03\defaults\fgr11&12.inp
c:\radtrad3.03\defaults\bwr_dba.rft
  0.0000E+00
  1
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
```

```
  0.0000E+00
  0
  0
  0
  0
Compartments:
  6
Compartment 1:
  1
  1
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.8800E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   3.0000E+01
  2.2000E+00   3.0000E+01
  2.3000E+00   3.0000E+01
  2.4000E+00   3.0000E+01
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.8800E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   3.0000E+01
  2.2000E+00   3.0000E+01
  2.3000E+00   3.0000E+01
  2.4000E+00   3.0000E+01
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  0
  0
```

```
  0
Compartment 5:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 6:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.5000E+00
  2.4000E+01   7.5000E-01
  7.2000E+02   0.0000E+00
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   6.6000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  3.3330E-01   6.6000E+03   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   4.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
```

```
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+02   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   1.0000E+02   1.0000E+02   1.0000E+02
  5.0000E-01   1.3000E+03   1.0000E+02   1.0000E+02   1.0000E+02
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
```

```
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
EAB
  3
  1
  4
  0.0000E+00   5.2400E-05
  1.0000E+00   5.2400E-05
  2.0000E+00   5.2400E-05
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  0
Location 2:
LPZ
  3
  1
  6
  0.0000E+00   2.0400E-05
  4.0000E+00   2.1700E-06
  8.0000E+00   9.5300E-07
  2.4000E+01   3.9000E-07
  9.6000E+01   1.0800E-07
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   2.3000E-04
  0
Location 3:
CR
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  7
  0.0000E+00   3.5200E-03
```

```
  2.7780E-01   3.5200E-03
  3.3300E-01   9.2600E-07
  8.0000E+00   6.7500E-07
  2.4000E+01   3.3900E-07
  9.6000E+01   1.2600E-07
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   1.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   5.0000E-01
  8.0000E+00   1.0000E+00
  2.4000E+01   2.0000E+00
  9.6000E+01   5.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\radtrad3.o343
  1
  1
  1
  0
  0
End of Scenario File
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 12:02:26
########################################################################

########################################################################
                     Plant Description
########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.5867E+03 MWth

Number of compartments    =   6

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: DW
Compartment volume =   1.5000E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Exit Pathway Number    1: DW to  RB
   Exit Pathway Number    6: DW to  MSL "B" Volume 1
   Exit Pathway Number    7: DW to  MSL "A" Volume 3

Compartment number  2
Name: RB
Compartment volume =   1.1850E+06 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  2
   Inlet Pathway Number   1: DW to  RB
   Exit Pathway Number    2: RB to Environment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   2: RB to Environment
   Inlet Pathway Number   5: CR to  Environment - Exhaust
   Exit Pathway Number    3: Environment to CR Unfiltered
   Exit Pathway Number    4: Environment to  CR Filtered

Compartment number  4
Name: CR
Compartment volume =   1.0100E+05 (Cubic feet)
Compartment type is Control Room
Pathways into and out of compartment  4
   Inlet Pathway Number   3: Environment to CR Unfiltered
   Inlet Pathway Number   4: Environment to  CR Filtered
   Exit Pathway Number    5: CR to  Environment - Exhaust

Compartment number  5
Name: MSL "B" Volume 1
Compartment volume =   1.0000E+00 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  5
   Inlet Pathway Number   6: DW to  MSL "B" Volume 1

Compartment number  6
Name: MSL "C" Volume 3
Compartment volume =   1.0000E+00 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  6
   Inlet Pathway Number   7: DW to  MSL "A" Volume 3

Total number of pathways =   7
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 12:02:26
########################################################################

########################################################################
                    Scenario Description
########################################################################

Radioactive Decay is enabled
Calculation of Daughters is enabled

Release Fractions and Timings
               GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
            0.500000 hr    1.5000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        4.279E+03
IODINE       5.0000E-02     2.5000E-01      0.0000E+00        2.249E+02
CESIUM       5.0000E-02     2.0000E-01      0.0000E+00        4.682E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        3.100E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.674E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.550E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.852E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        5.214E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.978E+00

Inventory Power =      2587. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
               (Ci/MWt)      (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   1.529E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.830E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   5.260E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.670E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.740E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.360E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.600E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   3.240E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   4.260E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.030E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.200E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   4.400E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   4.110E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.250E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.640E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   5.020E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.860E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   5.030E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.140E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.540E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.460E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   3.180E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.940E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.980E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.560E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   7.910E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.530E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   4.340E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   7.420E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.430E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   5.380E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.860E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.710E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.960E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.640E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.430E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
 I-135     2   5.330E+04  2.380E+04   8.294E-14   8.460E-09   3.320E-10
 Xe-133    1   5.630E+04  4.532E+05   1.560E-15   0.000E+00   0.000E+00
 Xe-135    1   2.310E+04  3.272E+04   1.190E-14   0.000E+00   0.000E+00
 Cs-134    3   7.220E+03  6.507E+07   7.570E-14   1.110E-08   1.250E-08
 Cs-136    3   2.160E+03  1.132E+06   1.060E-13   1.730E-09   1.980E-09
 Cs-137    3   5.810E+03  9.467E+08   2.725E-14   7.930E-09   8.630E-09
 Ba-139    6   5.150E+04  4.962E+03   2.170E-15   2.400E-12   4.640E-11
```

Ba-140	6	5.000E+04	1.101E+06	8.580E-15	2.560E-10	1.010E-09
La-140	9	5.240E+04	1.450E+05	1.170E-13	6.870E-11	1.310E-09
La-141	9	4.700E+04	1.415E+04	2.390E-15	9.400E-12	1.570E-10
La-142	9	4.600E+04	5.550E+03	1.440E-13	8.740E-12	6.840E-11
Ce-141	8	4.720E+04	2.808E+06	3.430E-15	2.550E-11	2.420E-09
Ce-143	8	4.560E+04	1.188E+05	1.290E-14	6.230E-12	9.160E-10
Ce-144	8	3.790E+04	2.456E+07	2.773E-15	2.920E-10	1.010E-07
Pr-143	9	4.430E+04	1.172E+06	2.100E-17	1.680E-18	2.190E-09
Nd-147	9	1.850E+04	9.487E+05	6.190E-15	1.820E-11	1.850E-09
Np-239	8	5.370E+05	2.035E+05	7.690E-15	7.620E-12	6.780E-10
Pu-238	8	1.530E+02	2.769E+09	4.880E-18	3.860E-10	7.790E-05
Pu-239	8	1.340E+01	7.594E+11	4.240E-18	3.750E-10	8.330E-05
Pu-240	8	2.510E+01	2.063E+11	4.750E-18	3.760E-10	8.330E-05
Pu-241	8	5.410E+03	4.544E+08	7.250E-20	9.150E-12	1.340E-06
Am-241	9	9.060E+00	1.364E+10	8.180E-16	1.600E-09	1.200E-04
Cm-242	9	2.300E+03	1.407E+07	5.690E-18	9.410E-10	4.670E-06
Cm-244	9	1.520E+02	5.715E+08	4.910E-18	1.010E-09	6.700E-05

Nuclide	Daughter	Fraction	Daughter	Fraction	Daughter	Fraction
Kr-85m	Kr-85	0.21	none	0.00	none	0.00
Kr-87	Rb-87	1.00	none	0.00	none	0.00
Kr-88	Rb-88	1.00	none	0.00	none	0.00
Sr-90	Y-90	1.00	none	0.00	none	0.00
Sr-91	Y-91m	0.58	Y-91	0.42	none	0.00
Sr-92	Y-92	1.00	none	0.00	none	0.00
Y-93	Zr-93	1.00	none	0.00	none	0.00
Zr-95	Nb-95m	0.01	Nb-95	0.99	none	0.00
Zr-97	Nb-97m	0.95	Nb-97	0.05	none	0.00
Mo-99	Tc-99m	0.88	Tc-99	0.12	none	0.00
Tc-99m	Tc-99	1.00	none	0.00	none	0.00
Ru-103	Rh-103m	1.00	none	0.00	none	0.00
Ru-105	Rh-105	1.00	none	0.00	none	0.00
Ru-106	Rh-106	1.00	none	0.00	none	0.00
Sb-127	Te-127m	0.18	Te-127	0.82	none	0.00
Sb-129	Te-129m	0.22	Te-129	0.77	none	0.00
Te-127m	Te-127	0.98	none	0.00	none	0.00
Te-129	I-129	1.00	none	0.00	none	0.00
Te-129m	Te-129	0.65	I-129	0.35	none	0.00
Te-131m	Te-131	0.22	I-131	0.78	none	0.00
Te-132	I-132	1.00	none	0.00	none	0.00
I-131	Xe-131m	0.01	none	0.00	none	0.00
I-133	Xe-133m	0.03	Xe-133	0.97	none	0.00
I-135	Xe-135m	0.15	Xe-135	0.85	none	0.00
Xe-135	Cs-135	1.00	none	0.00	none	0.00
Cs-137	Ba-137m	0.95	none	0.00	none	0.00
Ba-140	La-140	1.00	none	0.00	none	0.00
La-141	Ce-141	1.00	none	0.00	none	0.00
Ce-143	Pr-143	1.00	none	0.00	none	0.00
Ce-144	Pr-144m	0.02	Pr-144	0.98	none	0.00
Nd-147	Pm-147	1.00	none	0.00	none	0.00
Np-239	Pu-239	1.00	none	0.00	none	0.00
Pu-238	U-234	1.00	none	0.00	none	0.00
Pu-239	U-235	1.00	none	0.00	none	0.00
Pu-240	U-236	1.00	none	0.00	none	0.00
Pu-241	U-237	0.00	Am-241	1.00	none	0.00
Am-241	Np-237	1.00	none	0.00	none	0.00
Cm-242	Pu-238	1.00	none	0.00	none	0.00
Cm-244	Pu-240	1.00	none	0.00	none	0.00

Iodine fractions

Aerosol	=	9.5000E-01
Elemental	=	4.8500E-02
Organic	=	1.5000E-03

COMPARTMENT DATA

Compartment number 1: DW

Sprays: Aerosal Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01

1.8800E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	3.0000E+01
2.2000E+00	3.0000E+01
2.3000E+00	3.0000E+01
2.4000E+00	3.0000E+01
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Sprays: Elemental Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01
1.8800E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	3.0000E+01
2.2000E+00	3.0000E+01
2.3000E+00	3.0000E+01
2.4000E+00	3.0000E+01
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Compartment number 2: RB

Compartment number 3: Environment

Compartment number 4: CR

Compartment number 5: MSL "B" Volume 1

Compartment number 6: MSL "C" Volume 3

PATHWAY DATA

Pathway number 1: DW to RB

Convection Data

Time (hr)	Flow Rate (% / day)
0.0000E+00	1.5000E+00
2.4000E+01	7.5000E-01
7.2000E+02	0.0000E+00

Pathway number 2: RB to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	6.6000E+03	0.0000E+00	0.0000E+00	0.0000E+00
3.3330E-01	6.6000E+03	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 3: Environment to CR Unfiltered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	4.0000E+02	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 4: Environment to CR Filtered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	9.0000E+02	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 5: CR to Environment - Exhaust

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	1.0000E+02	1.0000E+02	1.0000E+02
5.0000E-01	1.3000E+03	1.0000E+02	1.0000E+02	1.0000E+02
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 6: DW to MSL "B" Volume 1

Piping: Removal Data

Time (hr)	Flow Rate (cfm)	DF Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.0000E+00	4.7800E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.4000E+01	2.3900E-01	1.0000E+00	1.0000E+00	1.0000E+00
7.2000E+02	0.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Pathway number 7: DW to MSL "A" Volume 3

Piping: Removal Data

Time (hr)	Flow Rate (cfm)	DF Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.0000E+00	4.7800E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.4000E+01	2.3900E-01	1.0000E+00	1.0000E+00	1.0000E+00
7.2000E+02	0.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

LOCATION DATA

Location EAB is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	5.2400E-05
1.0000E+00	5.2400E-05
2.0000E+00	5.2400E-05
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
7.2000E+02	3.5000E-04

Location LPZ is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	2.0400E-05
4.0000E+00	2.1700E-06
8.0000E+00	9.5300E-07
2.4000E+01	3.9000E-07
9.6000E+01	1.0800E-07
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
8.0000E+00	1.8000E-04
2.4000E+01	2.3000E-04
7.2000E+02	2.3000E-04

Location CR is in compartment 4

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	3.5200E-03
2.7780E-01	3.5200E-03
3.3300E-01	9.2600E-07
8.0000E+00	6.7500E-07
2.4000E+01	3.3900E-07

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        9.6000E+01          1.2600E-07
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)          Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.5000E-04
        7.2000E+02                 3.5000E-04

      Location Occupancy Factor Data
       Time (hr)          Occupancy Factor
        0.0000E+00            1.0000E+00
        2.4000E+01            6.0000E-01
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time             Time step
       0.0000E+00       1.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       5.0000E-01
       8.0000E+00       1.0000E+00
       2.4000E+01       2.0000E+00
       9.6000E+01       5.0000E+00
       7.2000E+02       0.0000E+00
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 12:02:26
########################################################################




     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


########################################################################
           Dose, Detailed model and Detailed Inventory Output
########################################################################

EAB Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3720E-03  2.4812E-01  1.2306E-02
Accumulated dose (rem)  1.3720E-03  2.4812E-01  1.2306E-02

LPZ Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.3415E-04  9.6597E-02  4.7910E-03
Accumulated dose (rem)  5.3415E-04  9.6597E-02  4.7910E-03

CR Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.7178E-04  1.6156E+00  7.1568E-02
Accumulated dose (rem)  3.7178E-04  1.6156E+00  7.1568E-02

DW Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5339E+04  1.1556E-01  8.1875E+23  1.0363E+18
Kr-85m                 7.0976E+05  8.6246E-05  6.1104E+20  1.6510E+19
Kr-87                  1.2507E+06  4.4153E-05  3.0563E+20  3.0427E+19
Kr-88                  1.8753E+06  1.4955E-04  1.0235E+21  4.4068E+19
Rb-86                  5.6860E+03  6.9881E-05  4.8934E+20  1.2999E+17
I-131                  2.3333E+06  1.8821E-02  8.6521E+22  5.3353E+19
I-132                  3.2389E+06  3.1378E-04  1.4315E+21  7.5375E+19
I-133                  4.8078E+06  4.2441E-03  1.9217E+22  1.1030E+20
I-134                  4.2584E+06  1.5963E-04  7.1740E+20  1.0662E+20
I-135                  4.4365E+06  1.2633E-03  5.6353E+21  1.0261E+20
Xe-133                 4.8525E+06  2.5924E-02  1.1738E+23  1.1091E+20
Xe-135                 2.0375E+06  7.9785E-04  3.5591E+21  4.6188E+19
Cs-134                 6.2233E+05  4.8100E-01  2.1617E+24  1.4225E+19
Cs-136                 1.8605E+05  2.5385E-03  1.1240E+22  4.2535E+18
Cs-137                 5.0080E+05  5.7575E+00  2.5308E+25  1.1447E+19

DW Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4163E+23  0.0000E+00
Elemental I (atoms)    5.5058E+21  0.0000E+00
Organic I (atoms)      1.7028E+20  0.0000E+00
Aerosols (kg)          6.2647E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.7352E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.8338E-04
Total I (Ci)                                   1.9075E+07

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
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Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   0.3333    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   0.3333    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5522E+00  1.1603E-05  8.2204E+19  7.1009E+13
Kr-85m                 7.1261E+01  8.6592E-09  6.1349E+16  1.1264E+15
Kr-87                  1.2557E+02  4.4330E-09  3.0685E+16  2.0531E+15
Kr-88                  1.8828E+02  1.5016E-08  1.0276E+17  2.9991E+15
Rb-86                  5.7089E-01  7.0161E-09  4.9130E+16  8.9065E+12
I-131                  2.3426E+02  1.8896E-06  8.6866E+18  3.6554E+15
I-132                  3.1998E+02  3.0999E-08  1.4142E+17  5.0804E+15
I-133                  4.8271E+02  4.2612E-07  1.9294E+18  7.5512E+15
I-134                  4.2755E+02  1.6027E-08  7.2029E+16  7.1437E+15
I-135                  4.4543E+02  1.2684E-07  5.6579E+17  7.0108E+15
Xe-133                 4.8720E+02  2.6028E-06  1.1785E+19  7.5999E+15
Xe-135                 2.0457E+02  8.0106E-08  3.5734E+17  3.1708E+15
Cs-134                 6.2483E+01  4.8293E-05  2.1703E+20  9.7468E+14
Cs-136                 1.8679E+01  2.5487E-07  1.1286E+18  2.9144E+14
Cs-137                 5.0281E+01  5.7806E-04  2.5410E+21  7.8434E+14

RB Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4541E+19  0.0000E+00
Elemental I (atoms)    5.5267E+17  0.0000E+00
Organic I (atoms)      1.7093E+16  0.0000E+00
Aerosols (kg)          6.2898E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          9.8296E-09
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2492E-08
Total I (Ci)                                    1.9099E+03

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

RB to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.5426E+18
Elemental I (atoms)    0.0000E+00  2.0748E+16
Organic I (atoms)      0.0000E+00  6.4169E+14
Aerosols (kg)          0.0000E+00  2.3569E-05

Environment Integral Nuclide Release:

Time (h) =   0.3333       Ci           kg         Atoms         Bq
Kr-85                  1.7057E-01  4.3476E-07  3.0802E+18  6.3111E+09
Kr-85m                 2.7031E+00  3.2847E-10  2.3272E+15  1.0002E+11
Kr-87                  4.9151E+00  1.7352E-10  1.2011E+15  1.8186E+11
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Kr-88	7.1932E+00	5.7366E-10	3.9257E+15	2.6615E+11
Rb-86	2.1394E-02	2.6293E-10	1.8412E+15	7.9158E+08
I-131	8.7803E+00	7.0823E-08	3.2558E+17	3.2487E+11
I-132	1.2176E+01	1.1796E-09	5.3817E+15	4.5052E+11
I-133	1.8135E+01	1.6009E-08	7.2487E+16	6.7099E+11
I-134	1.7075E+01	6.4008E-10	2.8766E+15	6.3178E+11
I-135	1.6830E+01	4.7922E-09	2.1377E+16	6.2269E+11
Xe-133	1.8256E+01	9.7531E-08	4.4161E+17	6.7547E+11
Xe-135	7.6252E+00	2.9859E-09	1.3320E+16	2.8213E+11
Cs-134	2.3413E+00	1.8096E-06	8.1324E+18	8.6627E+10
Cs-136	7.0005E-01	9.5516E-09	4.2295E+16	2.5902E+10
Cs-137	1.8841E+00	2.1660E-05	9.5213E+19	6.9710E+10

Environment Transport Group Inventory:

Time (h) = 0.3333	Total Release	Release Rate/s	
Noble gases (atoms)	3.5426E+18	2.9525E+15	
Elemental I (atoms)	2.0744E+16	1.7288E+13	
Organic I (atoms)	6.4155E+14	5.3468E+11	
Aerosols (kg)	2.3569E-05	1.9642E-08	
Dose Effective (Ci) I-131 (Thyroid)			1.2376E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.5758E+01
Total I (Ci)			7.2996E+01

RB to Environment Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5426E+18
Elemental I (atoms)	0.0000E+00	2.0748E+16
Organic I (atoms)	0.0000E+00	6.4169E+14
Aerosols (kg)	0.0000E+00	2.3569E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2430E+16
Elemental I (atoms)	0.0000E+00	7.2796E+13
Organic I (atoms)	0.0000E+00	2.2514E+12
Aerosols (kg)	0.0000E+00	8.2692E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	1.2042E+15	0.0000E+00
Elemental I (atoms)	7.0495E+12	0.0000E+00
Organic I (atoms)	2.1803E+11	0.0000E+00
Aerosols (kg)	8.0112E-09	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 0.3333	Ci	kg	Atoms	Decay
Kr-85	5.4048E-04	1.3776E-09	9.7602E+15	6.5136E+09
Kr-85m	8.4609E-03	1.0281E-12	7.2841E+12	1.0306E+11
Kr-87	1.4909E-02	5.2634E-13	3.6433E+12	1.8665E+11
Kr-88	2.2355E-02	1.7828E-12	1.2200E+13	2.7401E+11
Rb-86	6.7782E-05	8.3303E-13	5.8333E+12	8.1696E+08
I-131	2.7814E-02	2.2435E-10	1.0314E+15	3.3528E+11
I-132	3.7692E-02	3.6516E-12	1.6659E+13	4.6153E+11
I-133	5.7312E-02	5.0593E-11	2.2908E+14	6.9229E+11

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I-134                  5.0764E-02  1.9029E-12  8.5520E+12  6.4672E+11
I-135                  5.2886E-02  1.5059E-11  6.7177E+13  6.4199E+11
Xe-133                 5.7846E-02  3.0904E-10  1.3993E+15  6.9712E+11
Xe-135                 2.4289E-02  9.5111E-12  4.2427E+13  2.9118E+11
Cs-134                 7.4187E-03  5.7339E-09  2.5769E+16  8.9406E+10
Cs-136                 2.2178E-03  3.0261E-11  1.3400E+14  2.6732E+10
Cs-137                 5.9699E-03  6.8634E-08  3.0170E+17  7.1946E+10

CR Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    1.1225E+16  0.0000E+00
Elemental I (atoms)    6.5612E+13  0.0000E+00
Organic I (atoms)      2.0292E+12  0.0000E+00
Aerosols (kg)          7.4680E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.3692E-11
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.7398E-11
Total I (Ci)                                   2.2647E-01

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2430E+16
Elemental I (atoms)    0.0000E+00  7.2796E+13
Organic I (atoms)      0.0000E+00  2.2514E+12
Aerosols (kg)          0.0000E+00  8.2692E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    1.2042E+15  0.0000E+00
Elemental I (atoms)    7.0495E+12  0.0000E+00
Organic I (atoms)      2.1803E+11  0.0000E+00
Aerosols (kg)          8.0112E-09  0.0000E+00

EAB Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.2171E-04  1.2915E-02  1.0909E-03
Accumulated dose (rem)  1.8937E-03  2.6104E-01  1.3397E-02

LPZ Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0311E-04  5.0280E-03  4.2469E-04
Accumulated dose (rem)  7.3726E-04  1.0163E-01  5.2157E-03

CR Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1983E-04  2.8329E+00  1.2548E-01
Accumulated dose (rem)  9.9162E-04  4.4485E+00  1.9705E-01

DW Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg          Atoms      Decay
Kr-85                  6.8009E+04  1.7334E-01  1.2281E+24  2.3096E+18
Kr-85m                 1.0375E+06  1.2607E-04  8.9321E+20  3.6171E+19
Kr-87                  1.7130E+06  6.0476E-05  4.1862E+20  6.3902E+19
Kr-88                  2.7008E+06  2.1539E-04  1.4740E+21  9.5608E+19
Rb-86                  6.0304E+02  7.4113E-06  5.1898E+19  1.6215E+17
I-131                  2.5229E+05  2.0350E-03  9.3551E+21  6.6630E+19
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I-132                  3.6181E+05  3.5051E-05  1.5991E+20  9.3943E+19
I-133                  5.1719E+05  4.5656E-04  2.0673E+21  1.3762E+20
I-134                  4.0377E+05  1.5135E-05  6.8021E+19  1.2989E+20
I-135                  4.7159E+05  1.3429E-04  5.9903E+20  1.2772E+20
Xe-133                 7.2742E+06  3.8862E-02  1.7596E+23  2.4715E+20
Xe-135                 3.0409E+06  1.1908E-03  5.3118E+21  1.0329E+20
Cs-134                 6.6019E+04  5.1026E-02  2.2932E+23  1.7745E+19
Cs-136                 1.9729E+04  2.6919E-04  1.1920E+21  5.3059E+18
Cs-137                 5.3127E+04  6.1078E-01  2.6848E+24  1.4280E+19

DW Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    1.4122E+24  0.0000E+00
Elemental I (atoms)    5.8262E+20  7.6685E+21
Organic I (atoms)      2.5457E+20  0.0000E+00
Aerosols (kg)          6.6457E-01  8.7318E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          8.3482E-05
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.0587E-04
Total I (Ci)                                    2.0066E+06

DW to  RB Transport Group Inventory:
Time (h) =   0.5000  Leakage Transport

Noble gases (atoms)      2.2071E+20
Elemental I (atoms)      7.3466E+17
Organic I (atoms)        3.9920E+16
Aerosols (kg)            8.3447E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   0.5000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.1654E+20
Elemental I (atoms)    0.0000E+00  3.8790E+17
Organic I (atoms)      0.0000E+00  2.1078E+16
Aerosols (kg)          0.0000E+00  4.4060E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   0.5000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.1654E+20
Elemental I (atoms)    0.0000E+00  3.8790E+17
Organic I (atoms)      0.0000E+00  2.1078E+16
Aerosols (kg)          0.0000E+00  4.4060E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms      Decay
Kr-85                  1.0060E+01  2.5640E-05  1.8166E+20  2.3307E+14
Kr-85m                 1.5347E+02  1.8648E-08  1.3212E+17  3.6268E+15
Kr-87                  2.5338E+02  8.9453E-09  6.1920E+16  6.3017E+15
Kr-88                  3.9949E+02  3.1859E-08  2.1802E+17  9.5507E+15
Rb-86                  6.9865E-01  8.5863E-09  6.0126E+16  2.3810E+13
I-131                  2.8694E+02  2.3145E-06  1.0640E+19  9.7735E+15
I-132                  3.7616E+02  3.6442E-08  1.6626E+17  1.3269E+16
I-133                  5.8833E+02  5.1935E-07  2.3516E+18  2.0126E+16
I-134                  4.5930E+02  1.7217E-08  7.7376E+16  1.7593E+16
I-135                  5.3645E+02  1.5275E-07  6.8141E+17  1.8544E+16
Xe-133                 1.0762E+03  5.7497E-06  2.6034E+19  2.4942E+16
Xe-135                 4.5297E+02  1.7738E-07  7.9125E+17  1.0468E+16
Cs-134                 7.6486E+01  5.9116E-05  2.6567E+20  2.6061E+15
Cs-136                 2.2857E+01  3.1187E-07  1.3810E+18  7.7907E+14
Cs-137                 6.1550E+01  7.0762E-04  3.1105E+21  2.0972E+15

RB Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    2.0889E+20  0.0000E+00
Elemental I (atoms)    6.7414E+17  0.0000E+00
Organic I (atoms)      3.7643E+16  0.0000E+00
Aerosols (kg)          7.6994E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.2013E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.5206E-08
Total I (Ci)                                    2.2472E+03
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DW to RB Transport Group Inventory:
Time (h) = 0.5000 Leakage Transport

Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

RB to Environment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1797E+19
Elemental I (atoms)	3.4875E+16	2.1827E+16
Organic I (atoms)	1.4450E+15	6.8638E+14
Aerosols (kg)	3.9758E-05	2.4798E-05

Environment Integral Nuclide Release:

Time (h) = 0.5000	Ci	kg	Atoms	Bq
Kr-85	5.6802E-01	1.4478E-06	1.0257E+19	2.1017E+10
Kr-85m	8.8305E+00	1.0730E-09	7.6023E+15	3.2673E+11
Kr-87	1.5306E+01	5.4036E-10	3.7404E+15	5.6632E+11
Kr-88	2.3241E+01	1.8535E-09	1.2684E+16	8.5991E+11
Rb-86	2.2510E-02	2.7664E-10	1.9372E+15	8.3286E+08
I-131	9.2384E+00	7.4518E-08	3.4256E+17	3.4182E+11
I-132	1.2788E+01	1.2389E-09	5.6522E+15	4.7317E+11
I-133	1.9076E+01	1.6840E-08	7.6249E+16	7.0582E+11
I-134	1.7854E+01	6.6929E-10	3.0079E+15	6.6061E+11
I-135	1.7693E+01	5.0380E-09	2.2474E+16	6.5462E+11
Xe-133	6.0785E+01	3.2474E-07	1.4704E+18	2.2491E+12
Xe-135	2.5516E+01	9.9916E-09	4.4571E+16	9.4409E+11
Cs-134	2.4634E+00	1.9040E-06	8.5567E+18	9.1146E+10
Cs-136	7.3656E-01	1.0050E-08	4.4501E+16	2.7253E+10
Cs-137	1.9824E+00	2.2790E-05	1.0018E+20	7.3347E+10

Environment Transport Group Inventory:

Time (h) = 0.5000	Total Release	Release Rate/s	
Noble gases (atoms)	1.1796E+19	6.5536E+15	
Elemental I (atoms)	2.1822E+16	1.2123E+13	
Organic I (atoms)	6.8623E+14	3.8124E+11	
Aerosols (kg)	2.4798E-05	1.3777E-08	
Dose Effective (Ci) I-131 (Thyroid)			1.3020E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.6575E+01
Total I (Ci)			7.6650E+01

RB to Environment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1797E+19
Elemental I (atoms)	3.4875E+16	2.1827E+16
Organic I (atoms)	1.4450E+15	6.8638E+14
Aerosols (kg)	3.9758E-05	2.4798E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2437E+16
Elemental I (atoms)	0.0000E+00	7.2797E+13
Organic I (atoms)	0.0000E+00	2.2515E+12
Aerosols (kg)	0.0000E+00	8.2693E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00

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Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    3.3232E+15  0.0000E+00
Elemental I (atoms)    1.9412E+13  0.0000E+00
Organic I (atoms)      6.0037E+11  0.0000E+00
Aerosols (kg)          2.2105E-08  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms      Decay
Kr-85                  4.3882E-04  1.1185E-09  7.9242E+15  1.7280E+10
Kr-85m                 6.6944E-03  8.1347E-13  5.7633E+12  2.6952E+11
Kr-87                  1.1053E-02  3.9021E-13  2.7011E+12  4.7097E+11
Kr-88                  1.7426E-02  1.3897E-12  9.5105E+12  7.1068E+11
Rb-86                  5.4976E-05  6.7566E-13  4.7313E+12  2.1665E+09
I-131                  2.2552E-02  1.8190E-10  8.3622E+14  8.8897E+11
I-132                  2.9081E-02  2.8173E-12  1.2853E+13  1.1942E+12
I-133                  4.6239E-02  4.0818E-11  1.8482E+14  1.8305E+12
I-134                  3.6098E-02  1.3532E-12  6.0814E+12  1.5960E+12
I-135                  4.2162E-02  1.2006E-11  5.3556E+13  1.6863E+12
Xe-133                 4.6963E-02  2.5090E-10  1.1360E+15  1.8493E+12
Xe-135                 1.9928E-02  7.8034E-12  3.4810E+13  7.7714E+11
Cs-134                 6.0186E-03  4.6518E-09  2.0906E+16  2.3713E+11
Cs-136                 1.7986E-03  2.4541E-11  1.0867E+14  7.0887E+10
Cs-137                 4.8433E-03  5.5682E-08  2.4476E+17  1.9082E+11

CR Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    9.1131E+15  0.0000E+00
Elemental I (atoms)    5.3037E+13  0.0000E+00
Organic I (atoms)      1.6403E+12  0.0000E+00
Aerosols (kg)          6.0586E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.1076E-11
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.4015E-11
Total I (Ci)                                    1.7613E-01

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2437E+16
Elemental I (atoms)    0.0000E+00  7.2797E+13
Organic I (atoms)      0.0000E+00  2.2515E+12
Aerosols (kg)          0.0000E+00  8.2693E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    3.3232E+15  0.0000E+00
Elemental I (atoms)    1.9412E+13  0.0000E+00
Organic I (atoms)      6.0037E+11  0.0000E+00
Aerosols (kg)          2.2105E-08  0.0000E+00

EAB Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
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Delta dose (rem)         7.3479E-03  4.5348E-02  9.4897E-03
Accumulated dose (rem)   9.2416E-03  3.0639E-01  2.2887E-02

LPZ Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)         2.8606E-03  1.7655E-02  3.6945E-03
Accumulated dose (rem)   3.5979E-03  1.1928E-01  8.9101E-03

CR Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)         1.2455E-03  6.3032E+00  2.7917E-01
Accumulated dose (rem)   2.2371E-03  1.0752E+01  4.7621E-01

DW Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg          Atoms       Decay
Co-58                  2.1963E+01  6.9069E-07  7.1715E+18  1.3792E+15
Co-60                  2.6297E+01  2.3263E-05  2.3349E+20  1.6512E+15
Kr-85                  4.9869E+05  1.2711E+00  9.0055E+24  2.1469E+19
Kr-85m                 7.0415E+06  8.5564E-04  6.0621E+21  3.1473E+20
Kr-87                  9.5646E+06  3.3767E-04  2.3373E+21  4.7198E+20
Kr-88                  1.7529E+07  1.3979E-03  9.5665E+21  8.0098E+20
Rb-86                  7.5756E+02  9.3104E-06  6.5196E+19  2.1203E+17
Sr-89                  3.7226E+04  1.2813E-03  8.6701E+21  2.3378E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  3.0751E+17
Sr-91                  4.3069E+04  1.1881E-05  7.8626E+19  2.7517E+18
Sr-92                  3.7386E+04  2.9744E-06  1.9470E+19  2.4958E+18
Y-90                   5.2590E+01  9.6662E-08  6.4679E+17  3.2617E+15
Y-91                   4.7268E+02  1.9274E-05  1.2755E+20  2.9677E+16
Y-92                   7.5766E+02  7.8739E-08  5.1541E+17  4.2881E+16
Y-93                   4.9803E+02  1.4928E-07  9.6662E+17  3.1787E+16
Zr-95                  5.7684E+02  2.6851E-05  1.7021E+20  3.6225E+16
Zr-97                  5.3625E+02  2.8051E-07  1.7415E+18  3.4002E+16
Nb-95                  5.7824E+02  1.4788E-05  9.3740E+19  3.6309E+16
Mo-99                  7.3090E+03  1.5239E-05  9.2700E+19  4.6010E+17
Tc-99m                 6.5180E+03  1.2396E-06  7.5403E+18  4.0917E+17
Ru-103                 6.4043E+03  1.9844E-04  1.1602E+21  4.0221E+17
Ru-105                 3.9092E+03  5.8154E-07  3.3354E+18  2.5477E+17
Ru-106                 2.7875E+03  8.3320E-04  4.7337E+21  1.7504E+17
Rh-105                 4.2812E+03  5.0722E-06  2.9091E+19  2.6889E+17
Sb-127                 7.3024E+03  2.7345E-05  1.2966E+20  4.5936E+17
Sb-129                 1.9363E+04  3.4433E-06  1.6075E+19  1.2633E+18
Te-127                 7.2686E+03  2.7542E-06  1.3060E+19  4.5630E+17
Te-127m                1.2473E+03  1.3224E-04  6.2704E+20  7.8323E+16
Te-129                 2.0176E+04  9.6343E-07  4.4976E+18  1.2847E+18
Te-129m                4.1102E+03  1.3644E-04  6.3694E+20  2.5809E+17
Te-131m                1.5109E+04  1.8948E-05  8.7103E+19  9.5394E+17
Te-132                 1.0996E+05  3.6219E-04  1.6524E+21  6.9190E+18
I-131                  4.0160E+05  3.2394E-03  1.4892E+22  9.2575E+19
I-132                  5.7885E+05  5.6078E-05  2.5584E+20  1.3141E+20
I-133                  8.1089E+05  7.1582E-04  3.2412E+21  1.9039E+20
I-134                  4.3350E+05  1.6250E-05  7.3030E+19  1.6406E+20
I-135                  7.1342E+05  2.0315E-04  9.0620E+20  1.7498E+20
Xe-133                 5.3281E+07  2.8465E-01  1.2889E+24  2.2952E+21
Xe-135                 2.2407E+07  8.7742E-03  3.9140E+22  9.6498E+20
Cs-134                 8.2998E+04  6.4149E-02  2.8829E+23  2.3208E+19
Cs-136                 2.4777E+04  3.3806E-04  1.4969E+21  6.9376E+18
Cs-137                 6.6791E+04  7.6788E-01  3.3754E+24  1.8676E+19
Ba-139                 3.5806E+04  2.1890E-06  9.4838E+18  2.5389E+18
Ba-140                 5.7350E+04  7.8337E-04  3.3697E+21  3.6031E+18
La-140                 6.3959E+02  1.1507E-06  4.9498E+18  3.9410E+16
La-141                 4.5294E+02  8.0091E-08  3.4207E+17  2.9664E+16
La-142                 3.3732E+02  2.3564E-08  9.9933E+16  2.3607E+16
Ce-141                 1.3564E+03  4.7604E-05  2.0332E+20  8.5175E+16
Ce-143                 1.2833E+03  1.9324E-06  8.1380E+18  8.0984E+16
Ce-144                 1.0891E+03  3.4147E-04  1.4281E+21  6.8391E+16
Pr-143                 5.0935E+02  7.5641E-06  3.1854E+19  3.1982E+16
Nd-147                 2.1212E+02  2.6220E-06  1.0742E+19  1.3328E+16
Np-239                 1.5245E+04  6.5714E-05  1.6558E+20  9.6008E+17
Pu-238                 4.3973E+00  2.5685E-04  6.4992E+20  2.7612E+14
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Pu-239                3.8516E-01  6.1967E-03  1.5614E+22  2.4185E+13
Pu-240                7.2137E-01  3.1658E-03  7.9436E+21  4.5297E+13
Pu-241                1.5548E+02  1.5093E-03  3.7716E+21  9.7632E+15
Am-241                1.0417E-01  3.0350E-05  7.5838E+19  6.5407E+12
Cm-242                2.6436E+01  7.9764E-06  1.9849E+19  1.6601E+15
Cm-244                1.7474E+00  2.1599E-05  5.3307E+19  1.0972E+14

DW Transport Group Inventory:
Time (h) =   1.0000    Atmosphere     Sump
Noble gases (atoms)    1.0351E+25  0.0000E+00
Elemental I (atoms)    9.0808E+20  2.1014E+22
Organic I (atoms)      6.7270E+20  0.0000E+00
Aerosols (kg)          8.8772E-01  2.1825E+01
Dose Effective (Ci/cc) I-131 (Thyroid)         1.3210E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.6621E-04
Total I (Ci)                                   2.9383E+06

DW to  RB Transport Group Inventory:
Time (h) =   1.0000  Leakage Transport

Noble gases (atoms)      2.0591E+21
Elemental I (atoms)      1.0127E+18
Organic I (atoms)        1.8502E+17
Aerosols (kg)            1.1072E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   1.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.0872E+21
Elemental I (atoms)    0.0000E+00  5.3470E+17
Organic I (atoms)      0.0000E+00  9.7690E+16
Aerosols (kg)          0.0000E+00  5.8462E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   1.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.0872E+21
Elemental I (atoms)    0.0000E+00  5.3470E+17
Organic I (atoms)      0.0000E+00  9.7690E+16
Aerosols (kg)          0.0000E+00  5.8462E-04

RB Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg         Atoms      Decay
Co-58                 5.9291E-03  1.8646E-10  1.9360E+15  1.9398E+11
Co-60                 7.0991E-03  6.2802E-09  6.3034E+16  2.3225E+11
Kr-85                 9.1788E+01  2.3395E-04  1.6575E+21  3.0084E+15
Kr-85m                1.2960E+03  1.5749E-07  1.1158E+18  4.3847E+16
Kr-87                 1.7604E+03  6.2150E-08  4.3020E+17  6.4737E+16
Kr-88                 3.2263E+03  2.5730E-07  1.7608E+18  1.1121E+17
Rb-86                 8.0594E-01  9.9049E-09  6.9359E+16  7.3995E+13
Sr-89                 1.0050E+01  3.4591E-07  2.3406E+18  3.2880E+14
Sr-90                 1.3221E+00  9.6921E-06  6.4853E+19  4.3252E+13
Sr-91                 1.1627E+01  3.2074E-09  2.1226E+16  3.8488E+14
Sr-92                 1.0093E+01  8.0297E-10  5.2561E+15  3.4420E+14
Y-90                  1.7392E-02  3.1967E-11  2.1390E+14  5.2925E+11
Y-91                  1.2815E-01  5.2257E-09  3.4582E+16  4.1861E+12
Y-92                  6.5185E-01  6.7743E-11  4.4343E+14  1.6140E+13
Y-93                  1.3445E-01  4.0299E-11  2.6095E+14  4.4475E+12
Zr-95                 1.5572E-01  7.2487E-09  4.5950E+16  5.0949E+12
Zr-97                 1.4477E-01  7.5728E-11  4.7015E+14  4.7675E+12
Nb-95                 1.5610E-01  3.9921E-09  2.5306E+16  5.1069E+12
Mo-99                 1.9732E+00  4.1140E-09  2.5026E+16  6.4661E+13
Tc-99m                1.7596E+00  3.3464E-10  2.0356E+15  5.7545E+13
Ru-103                1.7289E+00  5.3570E-08  3.1321E+17  5.6569E+13
Ru-105                1.0553E+00  1.5700E-10  9.0042E+14  3.5408E+13
Ru-106                7.5253E-01  2.2493E-07  1.2779E+18  2.4620E+13
Rh-105                1.1558E+00  1.3693E-09  7.8535E+15  3.7816E+13
Sb-127                1.9714E+00  7.3820E-09  3.5004E+16  6.4572E+13
Sb-129                5.2274E+00  9.2957E-10  4.3395E+15  1.7551E+14
Te-127                1.9623E+00  7.4353E-10  3.5257E+15  6.4177E+13
Te-127m               3.3673E-01  3.5699E-08  1.6928E+17  1.1016E+13
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Te-129	5.4469E+00	2.6009E-10	1.2142E+15	1.7978E+14
Te-129m	1.1096E+00	3.6833E-08	1.7195E+17	3.6301E+13
Te-131m	4.0788E+00	5.1151E-09	2.3515E+16	1.3394E+14
Te-132	2.9684E+01	9.7777E-08	4.4608E+17	9.7251E+14
I-131	3.5419E+02	2.8569E-06	1.3133E+19	3.1134E+16
I-132	4.2620E+02	4.1290E-08	1.8837E+17	3.9983E+16
I-133	7.1540E+02	6.3153E-07	2.8595E+18	6.3584E+16
I-134	3.8245E+02	1.4336E-08	6.4430E+16	4.5658E+16
I-135	6.2940E+02	1.7922E-07	7.9948E+17	5.7447E+16
Xe-133	9.8026E+03	5.2369E-05	2.3712E+20	3.2152E+17
Xe-135	4.0790E+03	1.5973E-06	7.1251E+18	1.3437E+17
Cs-134	8.8298E+01	6.8246E-05	3.0670E+20	8.1022E+15
Cs-136	2.6359E+01	3.5965E-07	1.5925E+18	2.4206E+15
Cs-137	7.1057E+01	8.1692E-04	3.5909E+21	6.5201E+15
Ba-139	9.6662E+00	5.9095E-10	2.5603E+15	3.4342E+14
Ba-140	1.5482E+01	2.1148E-07	9.0969E+17	5.0669E+14
La-140	2.3207E-01	4.1753E-10	1.7960E+15	6.8543E+12
La-141	1.2228E-01	2.1622E-11	9.2346E+13	4.1162E+12
La-142	9.1063E-02	6.3614E-12	2.6978E+13	3.2067E+12
Ce-141	3.6614E-01	1.2850E-08	5.4882E+16	1.1979E+13
Ce-143	3.4644E-01	5.2169E-10	2.1970E+15	1.1372E+13
Ce-144	2.9402E-01	9.2185E-08	3.8552E+17	9.6192E+12
Pr-143	1.3761E-01	2.0435E-09	8.6058E+15	4.5005E+12
Nd-147	5.7263E-02	7.0784E-10	2.8998E+15	1.8742E+12
Np-239	4.1156E+00	1.7740E-08	4.4701E+16	1.3491E+14
Pu-238	1.1871E-03	6.9341E-08	1.7545E+17	3.8836E+10
Pu-239	1.0398E-04	1.6729E-06	4.2152E+18	3.4017E+09
Pu-240	1.9474E-04	8.5464E-07	2.1445E+18	6.3711E+09
Pu-241	4.1974E-02	4.0747E-07	1.0182E+18	1.3732E+12
Am-241	2.8122E-05	8.1936E-09	2.0474E+16	9.1998E+08
Cm-242	7.1367E-03	2.1533E-09	5.3585E+15	2.3349E+11
Cm-244	4.7173E-04	5.8308E-09	1.4391E+16	1.5433E+10

RB Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9051E+21	0.0000E+00	
Elemental I (atoms)	8.1986E+17	0.0000E+00	
Organic I (atoms)	1.6626E+17	0.0000E+00	
Aerosols (kg)	9.0293E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.4734E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.8467E-08
Total I (Ci)			2.5076E+03

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5349E+20
Elemental I (atoms)	1.5585E+17	2.5568E+16
Organic I (atoms)	1.6513E+16	1.1524E+15
Aerosols (kg)	1.7530E-04	2.8990E-05

Environment Integral Nuclide Release:

Time (h) = 1.0000	Ci	kg	Atoms	Bq
Co-58	1.4302E-05	4.4978E-13	4.6700E+12	5.2918E+05
Co-60	1.7123E-05	1.5148E-11	1.5204E+14	6.3356E+05
Kr-85	7.3937E+00	1.8845E-05	1.3352E+20	2.7357E+11
Kr-85m	1.0766E+02	1.3083E-08	9.2689E+16	3.9836E+12
Kr-87	1.5860E+02	5.5990E-09	3.8756E+16	5.8680E+12
Kr-88	2.7292E+02	2.1765E-08	1.4895E+17	1.0098E+13
Rb-86	2.6282E-02	3.2300E-10	2.2618E+15	9.7242E+08
Sr-89	2.4242E-02	8.3442E-10	5.6461E+15	8.9695E+08
Sr-90	3.1889E-03	2.3378E-08	1.5643E+17	1.1799E+08

Sr-91	2.8363E-02	7.8242E-12	5.1778E+13	1.0494E+09
Sr-92	2.5333E-02	2.0155E-12	1.3193E+13	9.3733E+08
Y-90	3.9479E-05	7.2562E-14	4.8553E+11	1.4607E+06
Y-91	3.0871E-04	1.2588E-11	8.3304E+13	1.1422E+07
Y-92	1.2550E-03	1.3042E-13	8.5371E+11	4.6433E+07
Y-93	3.2775E-04	9.8238E-14	6.3613E+11	1.2127E+07
Zr-95	3.7564E-04	1.7485E-11	1.1084E+14	1.3899E+07
Zr-97	3.5140E-04	1.8382E-13	1.1412E+12	1.3002E+07
Nb-95	3.7653E-04	9.6290E-12	6.1039E+13	1.3931E+07
Mo-99	4.7670E-03	9.9392E-12	6.0460E+13	1.7638E+08
Tc-99m	4.2451E-03	8.0732E-13	4.9109E+12	1.5707E+08
Ru-103	4.1707E-03	1.2923E-10	7.5556E+14	1.5431E+08
Ru-105	2.6078E-03	3.8795E-13	2.2251E+12	9.6490E+07
Ru-106	1.8152E-03	5.4255E-10	3.0824E+15	6.7161E+07
Rh-105	2.7883E-03	3.3035E-12	1.8947E+13	1.0317E+08
Sb-127	4.7605E-03	1.7826E-11	8.4529E+13	1.7614E+08
Sb-129	1.2926E-02	2.2986E-12	1.0731E+13	4.7827E+08
Te-127	4.7334E-03	1.7936E-12	8.5048E+12	1.7514E+08
Te-127m	8.1221E-04	8.6106E-11	4.0830E+14	3.0052E+07
Te-129	1.3284E-02	6.3429E-13	2.9611E+12	4.9149E+08
Te-129m	2.6764E-03	8.8842E-11	4.1474E+14	9.9026E+07
Te-131m	9.8734E-03	1.2382E-11	5.6920E+13	3.6532E+08
Te-132	7.1697E-02	2.3616E-10	1.0774E+15	2.6528E+09
I-131	1.0843E+01	8.7459E-08	4.0205E+17	4.0118E+11
I-132	1.4791E+01	1.4329E-09	6.5373E+15	5.4726E+11
I-133	2.2340E+01	1.9721E-08	8.9294E+16	8.2657E+11
I-134	1.9954E+01	7.4799E-10	3.3616E+15	7.3829E+11
I-135	2.0613E+01	5.8695E-09	2.6183E+16	7.6268E+11
Xe-133	7.9016E+02	4.2213E-06	1.9114E+19	2.9236E+13
Xe-135	3.3009E+02	1.2926E-07	5.7659E+17	1.2213E+13
Cs-134	2.8765E+00	2.2232E-06	9.9915E+18	1.0643E+11
Cs-136	8.5993E-01	1.1733E-08	5.1955E+16	3.1818E+10
Cs-137	2.3148E+00	2.6612E-05	1.1698E+20	8.5646E+10
Ba-139	2.5234E-02	1.5427E-12	6.6837E+12	9.3365E+08
Ba-140	3.7357E-02	5.1028E-10	2.1950E+15	1.3822E+09
La-140	5.1388E-04	9.2452E-13	3.9769E+12	1.9013E+07
La-141	3.0312E-04	5.3599E-14	2.2892E+11	1.1216E+07
La-142	2.3570E-04	1.6465E-14	6.9829E+10	8.7211E+06
Ce-141	8.8318E-04	3.0996E-11	1.3238E+14	3.2678E+07
Ce-143	8.3834E-04	1.2624E-12	5.3163E+12	3.1019E+07
Ce-144	7.0921E-04	2.2236E-10	9.2991E+14	2.6241E+07
Pr-143	3.3183E-04	4.9278E-12	2.0752E+13	1.2278E+07
Nd-147	1.3818E-04	1.7080E-12	6.9973E+12	5.1125E+06
Np-239	9.9458E-03	4.2871E-11	1.0802E+14	3.6799E+08
Pu-238	2.8633E-06	1.6725E-10	4.2320E+14	1.0594E+05
Pu-239	2.5080E-07	4.0349E-09	1.0167E+16	9.2795E+03
Pu-240	4.6973E-07	2.0614E-09	5.1725E+15	1.7380E+04
Pu-241	1.0124E-04	9.8282E-10	2.4559E+15	3.7460E+06
Am-241	6.7829E-08	1.9763E-11	4.9383E+13	2.5097E+03
Cm-242	1.7214E-05	5.1940E-12	1.2925E+13	6.3693E+05
Cm-244	1.1378E-06	1.4064E-11	3.4711E+13	4.2099E+04

Environment Transport Group Inventory:

Time (h) = 1.0000	Total Release	Release Rate/s	
Noble gases (atoms)	1.5349E+20	4.2636E+16	
Elemental I (atoms)	2.5563E+16	7.1007E+12	
Organic I (atoms)	1.1522E+15	3.2005E+11	
Aerosols (kg)	2.8990E-05	8.0529E-09	
Dose Effective (Ci) I-131 (Thyroid)			1.5266E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.9403E+01
Total I (Ci)			8.8540E+01

RB to Environment Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5349E+20
Elemental I (atoms)	1.5585E+17	2.5568E+16
Organic I (atoms)	1.6513E+16	1.1524E+15
Aerosols (kg)	1.7530E-04	2.8990E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2462E+16
Elemental I (atoms)	0.0000E+00	7.2798E+13
Organic I (atoms)	0.0000E+00	2.2516E+12
Aerosols (kg)	0.0000E+00	8.2694E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.5731E+13
Elemental I (atoms)	1.4275E+09	4.4149E+07
Organic I (atoms)	1.7780E+08	5.4989E+06
Aerosols (kg)	1.5994E-12	4.9466E-14

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	6.2516E+15	0.0000E+00
Elemental I (atoms)	3.6320E+13	0.0000E+00
Organic I (atoms)	1.1233E+12	0.0000E+00
Aerosols (kg)	4.1512E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	2.3690E-12	7.4502E-20	7.7355E+05	5.3284E+01
Co-60	2.8365E-12	2.5093E-18	2.5186E+07	6.3796E+01
Kr-85	3.0168E-04	7.6894E-10	5.4478E+15	4.1510E+10
Kr-85m	4.2597E-03	5.1761E-13	3.6672E+12	6.2610E+11
Kr-87	5.7861E-03	2.0427E-13	1.4140E+12	1.0097E+12
Kr-88	1.0604E-02	8.4567E-13	5.7872E+12	1.6200E+12
Rb-86	3.7338E-05	4.5888E-13	3.2133E+12	5.1911E+09
Sr-89	4.0153E-09	1.3821E-16	9.3520E+08	9.0316E+04
Sr-90	5.2824E-10	3.8726E-15	2.5912E+10	1.1881E+04
Sr-91	4.6456E-09	1.2816E-18	8.4810E+06	1.0543E+05
Sr-92	4.0327E-09	3.2083E-19	2.1001E+06	9.3616E+04
Y-90	7.3826E-12	1.3569E-20	9.0796E+04	1.5508E+02
Y-91	5.1279E-11	2.0910E-18	1.3838E+07	1.1515E+03
Y-92	3.2148E-10	3.3409E-20	2.1869E+05	5.8076E+03
Y-93	5.3720E-11	1.6102E-20	1.0427E+05	1.2185E+03
Zr-95	6.2221E-11	2.8963E-18	1.8360E+07	1.3995E+03
Zr-97	5.7843E-11	3.0258E-20	1.8785E+05	1.3075E+03
Nb-95	6.2372E-11	1.5951E-18	1.0111E+07	1.4028E+03
Mo-99	7.8838E-10	1.6438E-18	9.9991E+06	1.7755E+04
Tc-99m	7.0306E-10	1.3371E-19	8.1333E+05	1.5806E+04
Ru-103	6.9080E-10	2.1404E-17	1.2514E+08	1.5538E+04
Ru-105	4.2166E-10	6.2728E-20	3.5977E+05	9.6679E+03
Ru-106	3.0068E-10	8.9874E-17	5.1060E+08	6.7627E+03
Rh-105	4.6180E-10	5.4712E-19	3.1379E+06	1.0387E+04
Sb-127	7.8768E-10	2.9495E-18	1.3986E+07	1.7732E+04
Sb-129	2.0886E-09	3.7142E-19	1.7339E+06	4.7914E+04
Te-127	7.8403E-10	2.9708E-19	1.4087E+06	1.7628E+04
Te-127m	1.3454E-10	1.4264E-17	6.7636E+07	3.0260E+03
Te-129	2.1763E-09	1.0392E-19	4.8513E+05	4.9254E+04
Te-129m	4.4335E-10	1.4717E-17	6.8703E+07	9.9714E+03
Te-131m	1.6297E-09	2.0438E-18	9.3954E+06	3.6758E+04
Te-132	1.1861E-08	3.9067E-17	1.7823E+08	2.6705E+05
I-131	1.5301E-02	1.2342E-10	5.6735E+14	2.1291E+12
I-132	1.7001E-02	1.6470E-12	7.5142E+12	2.6871E+12
I-133	3.0909E-02	2.7285E-11	1.2355E+14	4.3556E+12
I-134	1.6524E-02	6.1941E-13	2.7837E+12	3.2578E+12
I-135	2.7193E-02	7.7433E-12	3.4542E+13	3.9507E+12
Xe-133	3.2281E-02	1.7246E-10	7.8088E+14	4.4423E+12
Xe-135	1.4077E-02	5.5122E-12	2.4589E+13	1.8915E+12
Cs-134	4.0907E-03	3.1617E-09	1.4209E+16	5.6837E+11
Cs-136	1.2212E-03	1.6662E-11	7.3779E+13	1.6983E+11

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Cs-137                 3.2919E-03  3.7846E-08  1.6636E+17  4.5738E+11
Ba-139                 3.8622E-09  2.3612E-19  1.0230E+06  9.2493E+04
Ba-140                 6.1860E-09  8.4498E-17  3.6347E+08  1.3917E+05
La-140                 1.0079E-10  1.8132E-19  7.7997E+05  2.0633E+03
La-141                 4.8857E-11  8.6390E-21  3.6898E+04  1.1230E+03
La-142                 3.6385E-11  2.5417E-21  1.0779E+04  8.6549E+02
Ce-141                 1.4629E-10  5.1341E-18  2.1928E+07  3.2903E+03
Ce-143                 1.3842E-10  2.0844E-19  8.7781E+05  3.1213E+03
Ce-144                 1.1748E-10  3.6833E-17  1.5404E+08  2.6423E+03
Pr-143                 5.4995E-11  8.1670E-19  3.4393E+06  1.2366E+03
Nd-147                 2.2880E-11  2.8282E-19  1.1586E+06  5.1476E+02
Np-239                 1.6444E-09  7.0883E-18  1.7861E+07  3.7041E+04
Pu-238                 4.7431E-13  2.7705E-17  7.0103E+07  1.0668E+01
Pu-239                 4.1546E-14  6.6841E-16  1.6842E+09  9.3440E-01
Pu-240                 7.7811E-14  3.4148E-16  8.5684E+08  1.7501E+00
Pu-241                 1.6771E-11  1.6281E-16  4.0682E+08  3.7720E+02
Am-241                 1.1236E-14  3.2738E-18  8.1807E+06  2.5271E-01
Cm-242                 2.8515E-12  8.6037E-19  2.1410E+06  6.4136E+01
Cm-244                 1.8848E-13  2.3297E-18  5.7500E+06  4.2392E+00

CR Transport Group Inventory:
Time (h) =   1.0000    Atmosphere     Sump
Noble gases (atoms)    6.2642E+15  0.0000E+00
Elemental I (atoms)    3.5683E+13  0.0000E+00
Organic I (atoms)      1.1037E+12  0.0000E+00
Aerosols (kg)          4.1178E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.4652E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.3425E-12
Total I (Ci)                                   1.0693E-01

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2462E+16
Elemental I (atoms)    0.0000E+00  7.2798E+13
Organic I (atoms)      0.0000E+00  2.2516E+12
Aerosols (kg)          0.0000E+00  8.2694E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.5731E+13
Elemental I (atoms)    1.4275E+09  4.4149E+07
Organic I (atoms)      1.7780E+08  5.4989E+06
Aerosols (kg)          1.5994E-12  4.9466E-14

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    6.2516E+15  0.0000E+00
Elemental I (atoms)    3.6320E+13  0.0000E+00
Organic I (atoms)      1.1233E+12  0.0000E+00
Aerosols (kg)          4.1512E-08  0.0000E+00

EAB Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.0381E-02  1.0227E-01  7.5822E-02
Accumulated dose (rem)  7.9623E-02  4.0866E-01  9.8709E-02

LPZ Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7400E-02  3.9816E-02  2.9519E-02
Accumulated dose (rem)  3.0998E-02  1.5910E-01  3.8429E-02

CR Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
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Delta dose (rem)	1.0983E-03	6.5340E+00	2.8951E-01
Accumulated dose (rem)	3.3354E-03	1.7286E+01	7.6573E-01

DW Compartment Nuclide Inventory:

Time (h) = 1.8800	Ci	kg	Atoms	Decay
Co-58	2.1955E+01	6.9045E-07	7.1689E+18	3.9531E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	4.7336E+15
Kr-85	1.2560E+06	3.2014E+00	2.2682E+25	1.2927E+20
Kr-85m	1.5477E+07	1.8807E-03	1.3325E+22	1.7247E+21
Kr-87	1.4911E+07	5.2643E-04	3.6439E+21	2.0614E+21
Kr-88	3.5616E+07	2.8404E-03	1.9437E+22	4.1616E+21
Rb-86	7.5653E+02	9.2977E-06	6.5107E+19	3.0077E+17
Sr-89	3.7207E+04	1.2807E-03	8.6657E+21	6.7002E+18
Sr-90	4.8973E+03	3.5902E-02	2.4023E+23	8.8155E+17
Sr-91	4.0390E+04	1.1142E-05	7.3736E+19	7.6414E+18
Sr-92	2.9851E+04	2.3749E-06	1.5546E+19	6.4199E+18
Y-90	5.5252E+01	1.0155E-07	6.7952E+17	9.2170E+15
Y-91	4.7296E+02	1.9286E-05	1.2763E+20	8.5040E+16
Y-92	9.7894E+02	1.0174E-07	6.6594E+17	1.0121E+17
Y-93	4.6885E+02	1.4053E-07	9.0998E+17	8.8436E+16
Zr-95	5.7661E+02	2.6840E-05	1.7014E+20	1.0383E+17
Zr-97	5.1724E+02	2.7057E-07	1.6798E+18	9.5739E+16
Nb-95	5.7824E+02	1.4787E-05	9.3739E+19	1.0409E+17
Mo-99	7.2417E+03	1.5099E-05	9.1847E+19	1.3129E+18
Tc-99m	6.5103E+03	1.2381E-06	7.5314E+18	1.1685E+18
Ru-103	6.4001E+03	1.9831E-04	1.1594E+21	1.1527E+18
Ru-105	3.4074E+03	5.0690E-07	2.9072E+18	6.8291E+17
Ru-106	2.7874E+03	8.3315E-04	4.7333E+21	5.0178E+17
Rh-105	4.2705E+03	5.0595E-06	2.9018E+19	7.6976E+17
Sb-127	7.2544E+03	2.7165E-05	1.2881E+20	1.3125E+18
Sb-129	1.6813E+04	2.9899E-06	1.3958E+19	3.3800E+18
Te-127	7.2653E+03	2.7530E-06	1.3054E+19	1.3051E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.2453E+17
Te-129	1.8869E+04	9.0099E-07	4.2061E+18	3.5192E+18
Te-129m	4.1101E+03	1.3643E-04	6.3692E+20	7.3985E+17
Te-131m	1.4805E+04	1.8566E-05	8.5350E+19	2.7071E+18
Te-132	1.0910E+05	3.5937E-04	1.6395E+21	1.9758E+19
I-131	4.1577E+05	3.3537E-03	1.5417E+22	1.4058E+20
I-132	5.9040E+05	5.7197E-05	2.6095E+20	2.0005E+20
I-133	8.1745E+05	7.2162E-04	3.2674E+21	2.8604E+20
I-134	2.2441E+05	8.4123E-06	3.7806E+19	2.0137E+20
I-135	6.7531E+05	1.9229E-04	8.5779E+20	2.5653E+20
Xe-133	1.3384E+08	7.1501E-01	3.2375E+24	1.3797E+22
Xe-135	5.5691E+07	2.1808E-02	9.7281E+22	5.7856E+21
Cs-134	8.2995E+04	6.4147E-02	2.8828E+23	3.2937E+19
Cs-136	2.4729E+04	3.3740E-04	1.4940E+21	9.8390E+18
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.6505E+19
Ba-139	2.3002E+04	1.4062E-06	6.0924E+18	5.9303E+18
Ba-140	5.7235E+04	7.8181E-04	3.3630E+21	1.0319E+19
La-140	6.8881E+02	1.2392E-06	5.3306E+18	1.1048E+17
La-141	3.8783E+02	6.8577E-08	2.9289E+17	7.8841E+16
La-142	2.2710E+02	1.5864E-08	6.7279E+16	5.6261E+16
Ce-141	1.3561E+03	4.7594E-05	2.0328E+20	2.4415E+17
Ce-143	1.2598E+03	1.8970E-06	7.9890E+18	2.3003E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	1.9605E+17
Pr-143	5.0943E+02	7.5652E-06	3.1859E+19	9.1674E+16
Nd-147	2.1163E+02	2.6159E-06	1.0717E+19	3.8162E+16
Np-239	1.5082E+04	6.5009E-05	1.6380E+20	2.7375E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	7.9155E+14
Pu-239	3.8521E-01	6.1974E-03	1.5616E+22	6.9335E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.2985E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	2.7988E+16
Am-241	1.0418E-01	3.0353E-05	7.5846E+19	1.8751E+13
Cm-242	2.6432E+01	7.9751E-06	1.9846E+19	4.7585E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.1454E+14

DW Transport Group Inventory:

Time (h) = 1.8800	Atmosphere	Sump
Noble gases (atoms)	2.6053E+25	0.0000E+00
Elemental I (atoms)	8.9615E+20	4.4848E+22
Organic I (atoms)	1.3915E+21	0.0000E+00

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Aerosols (kg)          8.8766E-01  4.5260E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          1.3540E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.6847E-04
Total I (Ci)                                    2.7233E+06

DW to  RB Transport Group Inventory:
Time (h) =   1.8800  Leakage Transport

Noble gases (atoms)      1.2073E+22
Elemental I (atoms)      1.5092E+18
Organic I (atoms)        7.5412E+17
Aerosols (kg)            1.5955E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   1.8800    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  6.3744E+21
Elemental I (atoms)    0.0000E+00  7.9687E+17
Organic I (atoms)      0.0000E+00  3.9817E+17
Aerosols (kg)          0.0000E+00  8.4241E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   1.8800    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  6.3744E+21
Elemental I (atoms)    0.0000E+00  7.9687E+17
Organic I (atoms)      0.0000E+00  3.9817E+17
Aerosols (kg)          0.0000E+00  8.4241E-04

RB Compartment Nuclide Inventory:

Time (h) =   1.8800       Ci           kg          Atoms       Decay
Co-58                  1.4878E-02  4.6791E-10  4.8583E+15  1.4976E+12
Co-60                  1.7821E-02  1.5765E-08  1.5823E+17  1.7934E+12
Kr-85                  4.9534E+02  1.2625E-03  8.9450E+21  3.7173E+16
Kr-85m                 6.1038E+03  7.4169E-07  5.2548E+18  4.8760E+17
Kr-87                  5.8806E+03  2.0761E-07  1.4370E+18  5.5596E+17
Kr-88                  1.4046E+04  1.1201E-06  7.6655E+18  1.1645E+18
Rb-86                  9.6028E-01  1.1802E-08  8.2641E+16  1.7897E+14
Sr-89                  2.5215E+01  8.6791E-07  5.8726E+18  2.5382E+15
Sr-90                  3.3188E+00  2.4330E-05  1.6280E+20  3.3399E+14
Sr-91                  2.7372E+01  7.5509E-09  4.9970E+16  2.8511E+15
Sr-92                  2.0230E+01  1.6094E-09  1.0535E+16  2.3027E+15
Y-90                   5.8732E-02  1.0795E-10  7.2233E+14  4.8909E+12
Y-91                   3.2402E-01  1.3213E-08  8.7437E+16  3.2450E+13
Y-92                   3.1149E+00  3.2372E-10  2.1190E+15  2.1211E+14
Y-93                   3.1773E-01  9.5234E-11  6.1668E+14  3.3027E+13
Zr-95                  3.9076E-01  1.8189E-08  1.1530E+17  3.9332E+13
Zr-97                  3.5053E-01  1.8336E-10  1.1384E+15  3.5962E+13
Nb-95                  3.9186E-01  1.0021E-08  6.3526E+16  3.9434E+13
Mo-99                  4.9076E+00  1.0232E-08  6.2244E+16  4.9632E+14
Tc-99m                 4.4119E+00  8.3905E-10  5.1039E+15  4.4213E+14
Ru-103                 4.3373E+00  1.3439E-07  7.8574E+17  4.3663E+14
Ru-105                 2.3091E+00  3.4352E-10  1.9702E+15  2.5032E+14
Ru-106                 1.8890E+00  5.6461E-07  3.2077E+18  1.9010E+14
Rh-105                 2.8941E+00  3.4288E-09  1.9665E+16  2.9146E+14
Sb-127                 4.9162E+00  1.8409E-08  8.7293E+16  4.9648E+14
Sb-129                 1.1394E+01  2.0262E-09  9.4591E+15  1.2378E+15
Te-127                 4.9236E+00  1.8656E-09  8.8466E+15  4.9405E+14
Te-127m                8.4531E-01  8.9616E-08  4.2494E+17  8.5066E+13
Te-129                 1.2787E+01  6.1059E-10  2.8504E+15  1.3069E+15
Te-129m                2.7854E+00  9.2460E-08  4.3163E+17  2.8030E+14
Te-131m                1.0033E+01  1.2582E-08  5.7841E+16  1.0207E+15
Te-132                 7.3938E+01  2.4354E-07  1.1111E+18  7.4717E+15
I-131                  4.5775E+02  3.6923E-06  1.6974E+19  7.9628E+16
I-132                  5.0062E+02  4.8499E-08  2.2127E+17  9.5611E+16
I-133                  9.0046E+02  7.9489E-07  3.5992E+18  1.6020E+17
I-134                  2.4720E+02  9.2665E-09  4.1645E+16  8.2908E+16
I-135                  7.4388E+02  2.1182E-07  9.4489E+17  1.3973E+17
Xe-133                 5.2725E+04  2.8168E-04  1.2754E+21  3.9629E+18
Xe-135                 2.1399E+04  8.3794E-06  3.7379E+19  1.6292E+18
Cs-134                 1.0535E+02  8.1423E-05  3.6592E+20  1.9611E+16
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Cs-136	3.1388E+01	4.2827E-07	1.8964E+18	5.8530E+15
Cs-137	8.4779E+01	9.7468E-04	4.2844E+21	1.5782E+16
Ba-139	1.5588E+01	9.5298E-10	4.1288E+15	2.0119E+15
Ba-140	3.8788E+01	5.2982E-07	2.2790E+18	3.9075E+15
La-140	8.6149E-01	1.5499E-09	6.6670E+15	6.7823E+13
La-141	2.6283E-01	4.6474E-11	1.9849E+14	2.8773E+13
La-142	1.5390E-01	1.0751E-11	4.5594E+13	1.9322E+13
Ce-141	9.1880E-01	3.2246E-08	1.3772E+17	9.2480E+13
Ce-143	8.5375E-01	1.2856E-09	5.4141E+15	8.6768E+13
Ce-144	7.3802E-01	2.3139E-07	9.6769E+17	7.4275E+13
Pr-143	3.4590E-01	5.1367E-09	2.1632E+16	3.4775E+13
Nd-147	1.4342E-01	1.7728E-09	7.2626E+15	1.4450E+13
Np-239	1.0221E+01	4.4056E-08	1.1101E+17	1.0345E+15
Pu-238	2.9800E-03	1.7407E-07	4.4044E+17	2.9989E+11
Pu-239	2.6105E-04	4.1999E-06	1.0583E+19	2.6269E+10
Pu-240	4.8886E-04	2.1454E-06	5.3833E+18	4.9197E+10
Pu-241	1.0537E-01	1.0229E-06	2.5559E+18	1.0604E+13
Am-241	7.0606E-05	2.0572E-08	5.1405E+16	7.1047E+09
Cm-242	1.7913E-02	5.4046E-09	1.3449E+16	1.8028E+12
Cm-244	1.1842E-03	1.4637E-08	3.6125E+16	1.1917E+11

RB Transport Group Inventory:

Time (h) = 1.8800	Atmosphere	Sump	
Noble gases (atoms)	1.0272E+22	0.0000E+00	
Elemental I (atoms)	1.0278E+18	0.0000E+00	
Organic I (atoms)	6.1972E+17	0.0000E+00	
Aerosols (kg)	1.0958E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.8846E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.3322E-08
Total I (Ci)			2.8499E+03

DW to RB Transport Group Inventory:

Time (h) = 1.8800	Leakage Transport
Noble gases (atoms)	1.2073E+22
Elemental I (atoms)	1.5092E+18
Organic I (atoms)	7.5412E+17
Aerosols (kg)	1.5955E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7932E+21
Elemental I (atoms)	4.2126E+17	3.3777E+16
Organic I (atoms)	1.2264E+17	4.4348E+15
Aerosols (kg)	4.6173E-04	3.7849E-05

Environment Integral Nuclide Release:

Time (h) = 1.8800	Ci	kg	Atoms	Bq
Co-58	1.0802E-04	3.3972E-12	3.5273E+13	3.9969E+06
Co-60	1.2936E-04	1.1444E-10	1.1486E+15	4.7864E+06
Kr-85	8.6435E+01	2.2031E-04	1.5609E+21	3.1981E+12
Kr-85m	1.1258E+03	1.3680E-07	9.6921E+17	4.1655E+13
Kr-87	1.2620E+03	4.4554E-08	3.0840E+17	4.6694E+13
Kr-88	2.6780E+03	2.1357E-07	1.4615E+18	9.9086E+13
Rb-86	3.4106E-02	4.1916E-10	2.9352E+15	1.2619E+09
Sr-89	1.8308E-01	6.3017E-09	4.2640E+16	6.7739E+09
Sr-90	2.4092E-02	1.7662E-07	1.1818E+18	8.9139E+08
Sr-91	2.0499E-01	5.6549E-11	3.7423E+14	7.5847E+09
Sr-92	1.6425E-01	1.3067E-11	8.5535E+13	6.0771E+09
Y-90	3.8098E-04	7.0025E-13	4.6855E+12	1.4096E+07
Y-91	2.3453E-03	9.5634E-11	6.3288E+14	8.6776E+07
Y-92	1.8639E-02	1.9370E-12	1.2679E+13	6.8963E+08
Y-93	2.3751E-03	7.1188E-13	4.6097E+12	8.7877E+07
Zr-95	2.8371E-03	1.3206E-10	8.3716E+14	1.0497E+08
Zr-97	2.5893E-03	1.3545E-12	8.4092E+12	9.5805E+07
Nb-95	2.8446E-03	7.2746E-11	4.6114E+14	1.0525E+08
Mo-99	3.5784E-02	7.4610E-11	4.5385E+14	1.3240E+09
Tc-99m	3.2047E-02	6.0946E-12	3.7073E+13	1.1857E+09
Ru-103	3.1495E-02	9.7585E-10	5.7056E+15	1.1653E+09

Ru-105	1.7932E-02	2.6676E-12	1.5300E+13	6.6348E+08
Ru-106	1.3713E-02	4.0987E-09	2.3286E+16	5.0737E+08
Rh-105	2.1036E-02	2.4923E-11	1.4294E+14	7.7833E+08
Sb-127	3.5801E-02	1.3406E-10	6.3569E+14	1.3246E+09
Sb-129	8.8654E-02	1.5765E-11	7.3597E+13	3.2802E+09
Te-127	3.5750E-02	1.3546E-11	6.4234E+13	1.3227E+09
Te-127m	6.1361E-03	6.5053E-10	3.0847E+15	2.2704E+08
Te-129	9.6049E-02	4.5864E-12	2.1411E+13	3.5538E+09
Te-129m	2.0220E-02	6.7119E-10	3.1333E+15	7.4813E+08
Te-131m	7.3549E-02	9.2235E-11	4.2401E+14	2.7213E+09
Te-132	5.3874E-01	1.7745E-09	8.0959E+15	1.9933E+10
I-131	1.4440E+01	1.1648E-07	5.3546E+17	5.3430E+11
I-132	1.8841E+01	1.8253E-09	8.3274E+15	6.9711E+11
I-133	2.9497E+01	2.6039E-08	1.1790E+17	1.0914E+12
I-134	2.2611E+01	8.4758E-10	3.8091E+15	8.3659E+11
I-135	2.6687E+01	7.5992E-09	3.3899E+16	9.8743E+11
Xe-133	9.2116E+03	4.9212E-05	2.2283E+20	3.4083E+14
Xe-135	3.7685E+03	1.4757E-06	6.5828E+18	1.3943E+14
Cs-134	3.7344E+00	2.8863E-06	1.2971E+19	1.3817E+11
Cs-136	1.1158E+00	1.5224E-08	6.7411E+16	4.1283E+10
Cs-137	3.0051E+00	3.4549E-05	1.5187E+20	1.1119E+11
Ba-139	1.4202E-01	8.6828E-12	3.7618E+13	5.2549E+09
Ba-140	2.8183E-01	3.8497E-09	1.6560E+16	1.0428E+10
La-140	5.4154E-03	9.7429E-12	4.1910E+13	2.0037E+08
La-141	2.0594E-03	3.6415E-13	1.5553E+12	7.6197E+07
La-142	1.3670E-03	9.5490E-14	4.0497E+11	5.0577E+07
Ce-141	6.6707E-03	2.3411E-10	9.9990E+14	2.4682E+08
Ce-143	6.2530E-03	9.4159E-12	3.9653E+13	2.3136E+08
Ce-144	5.3576E-03	1.6798E-09	7.0249E+15	1.9823E+08
Pr-143	2.5095E-03	3.7267E-11	1.5694E+14	9.2853E+07
Nd-147	1.0422E-03	1.2883E-11	5.2779E+13	3.8563E+07
Np-239	7.4579E-02	3.2147E-10	8.1002E+14	2.7594E+09
Pu-238	2.1632E-05	1.2636E-09	3.1972E+15	8.0038E+05
Pu-239	1.8949E-06	3.0486E-08	7.6816E+16	7.0111E+04
Pu-240	3.5487E-06	1.5574E-08	3.9078E+16	1.3130E+05
Pu-241	7.6488E-04	7.4251E-09	1.8554E+16	2.8300E+07
Am-241	5.1250E-07	1.4932E-10	3.7313E+14	1.8962E+04
Cm-242	1.3004E-04	3.9236E-11	9.7638E+13	4.8114E+06
Cm-244	8.5960E-06	1.0625E-10	2.6224E+14	3.1805E+05

Environment Transport Group Inventory:

Time (h) = 1.8800	Total Release	Release Rate/s	
Noble gases (atoms)	1.7930E+21	2.6492E+17	
Elemental I (atoms)	3.3757E+16	4.9877E+12	
Organic I (atoms)	4.4289E+15	6.5439E+11	
Aerosols (kg)	3.7849E-05	5.5923E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.0258E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.5610E+01
Total I (Ci)			1.1208E+02

RB to Environment Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7932E+21
Elemental I (atoms)	4.2126E+17	3.3777E+16
Organic I (atoms)	1.2264E+17	4.4348E+15
Aerosols (kg)	4.6173E-04	3.7849E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2749E+16
Elemental I (atoms)	0.0000E+00	7.2799E+13
Organic I (atoms)	0.0000E+00	2.2521E+12
Aerosols (kg)	0.0000E+00	8.2695E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.0067E+14
Elemental I (atoms)	4.5592E+09	1.4101E+08
Organic I (atoms)	1.4301E+09	4.4230E+07
Aerosols (kg)	4.9791E-12	1.5399E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	9.5384E+15	0.0000E+00
Elemental I (atoms)	5.3808E+13	0.0000E+00
Organic I (atoms)	1.6643E+12	0.0000E+00
Aerosols (kg)	6.1820E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.8800	Ci	kg	Atoms	Decay
Co-58	1.4488E-11	4.5564E-19	4.7309E+06	1.0588E+03
Co-60	1.7353E-11	1.5352E-17	1.5408E+08	1.2680E+03
Kr-85	1.8827E-04	4.7987E-10	3.3998E+15	6.8085E+10
Kr-85m	2.3199E-03	2.8190E-13	1.9973E+12	9.7872E+11
Kr-87	2.2351E-03	7.8907E-14	5.4620E+11	1.4220E+12
Kr-88	5.3385E-03	4.2575E-13	2.9135E+12	2.4674E+12
Rb-86	1.8899E-05	2.3226E-13	1.6264E+12	8.2459E+09
Sr-89	2.4554E-08	8.4515E-16	5.7187E+09	1.7944E+06
Sr-90	3.2318E-09	2.3692E-14	1.5853E+11	2.3614E+05
Sr-91	2.6654E-08	7.3530E-18	4.8660E+07	2.0009E+06
Sr-92	1.9699E-08	1.5673E-18	1.0259E+07	1.5852E+06
Y-90	6.4353E-11	1.1828E-19	7.9146E+05	3.9646E+03
Y-91	3.1673E-10	1.2915E-17	8.5468E+07	2.3027E+04
Y-92	3.8683E-09	4.0201E-19	2.6315E+06	2.1085E+05
Y-93	3.0940E-10	9.2737E-20	6.0051E+05	2.3189E+04
Zr-95	3.8052E-10	1.7713E-17	1.1228E+08	2.7808E+04
Zr-97	3.4134E-10	1.7856E-19	1.1085E+06	2.5321E+04
Nb-95	3.8159E-10	9.7586E-18	6.1860E+07	2.7881E+04
Mo-99	4.7790E-09	9.9642E-18	6.0612E+07	3.5054E+05
Tc-99m	4.2963E-09	8.1705E-19	4.9701E+06	3.1245E+05
Ru-103	4.2236E-09	1.3087E-16	7.6514E+08	3.0869E+05
Ru-105	2.2486E-09	3.3451E-19	1.9186E+06	1.7417E+05
Ru-106	1.8394E-09	5.4981E-16	3.1236E+09	1.3441E+05
Rh-105	2.8182E-09	3.3389E-18	1.9150E+07	2.0601E+05
Sb-127	4.7873E-09	1.7927E-17	8.5005E+07	3.5076E+05
Sb-129	1.1096E-08	1.9731E-18	9.2111E+06	8.6083E+05
Te-127	4.7946E-09	1.8167E-18	8.6147E+06	3.4921E+05
Te-127m	8.2315E-10	8.7267E-17	4.1380E+08	6.0144E+04
Te-129	1.2452E-08	5.9458E-19	2.7757E+06	9.1558E+05
Te-129m	2.7124E-09	9.0036E-17	4.2032E+08	1.9818E+05
Te-131m	9.7700E-09	1.2252E-17	5.6324E+07	7.1998E+05
Te-132	7.1999E-08	2.3716E-16	1.0820E+09	5.2780E+06
I-131	7.7306E-03	6.2356E-11	2.8665E+14	3.3799E+12
I-132	6.6097E-03	6.4034E-13	2.9214E+12	3.9276E+12
I-133	1.5213E-02	1.3430E-11	6.0809E+13	6.8532E+12
I-134	4.1765E-03	1.5656E-13	7.0360E+11	4.2699E+12
I-135	1.2568E-02	3.5787E-12	1.5964E+13	6.0881E+12
Xe-133	2.0117E-02	1.0747E-10	4.8663E+14	7.2839E+12
Xe-135	8.9085E-03	3.4884E-12	1.5561E+13	3.1385E+12
Cs-134	2.0733E-03	1.6024E-09	7.2016E+15	9.0324E+11
Cs-136	6.1774E-04	8.4286E-12	3.7322E+13	2.6971E+11
Cs-137	1.6685E-03	1.9182E-08	8.4320E+16	7.2687E+11
Ba-139	1.5179E-08	9.2800E-19	4.0205E+06	1.3473E+06
Ba-140	3.7771E-08	5.1593E-16	2.2193E+09	2.7621E+06
La-140	9.7156E-10	1.7479E-18	7.5188E+06	5.7346E+04
La-141	2.5594E-10	4.5255E-20	1.9329E+05	1.9977E+04
La-142	1.4987E-10	1.0469E-20	4.4399E+04	1.3019E+04
Ce-141	8.9464E-10	3.1398E-17	1.3410E+08	6.5379E+04
Ce-143	8.3137E-10	1.2519E-18	5.2721E+06	6.1218E+04
Ce-144	7.1868E-10	2.2533E-16	9.4232E+08	5.2514E+04
Pr-143	3.3706E-10	5.0054E-18	2.1079E+07	2.4603E+04
Nd-147	1.3966E-10	1.7263E-18	7.0722E+06	1.0214E+04
Np-239	9.9527E-09	4.2901E-17	1.0810E+08	7.3051E+05

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Pu-238                 2.9019E-12  1.6950E-16  4.2890E+08  2.1203E+02
Pu-239                 2.5421E-13  4.0898E-15  1.0305E+10  1.8573E+01
Pu-240                 4.7605E-13  2.0892E-15  5.2422E+09  3.4784E+01
Pu-241                 1.0261E-10  9.9605E-16  2.4889E+09  7.4971E+03
Am-241                 6.8757E-14  2.0033E-17  5.0059E+07  5.0235E+00
Cm-242                 1.7443E-11  5.2630E-18  1.3097E+07  1.2746E+03
Cm-244                 1.1531E-12  1.4253E-17  3.5178E+07  8.4256E+01

CR Transport Group Inventory:
Time (h) =   1.8800    Atmosphere     Sump
Noble gases (atoms)    3.9075E+15  0.0000E+00
Elemental I (atoms)    1.7802E+13  0.0000E+00
Organic I (atoms)      5.5105E+11  0.0000E+00
Aerosols (kg)          2.0870E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         3.7309E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   4.5986E-12
Total I (Ci)                                   4.6298E-02

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.8800     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2749E+16
Elemental I (atoms)    0.0000E+00  7.2799E+13
Organic I (atoms)      0.0000E+00  2.2521E+12
Aerosols (kg)          0.0000E+00  8.2695E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.8800     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.0067E+14
Elemental I (atoms)    4.5592E+09  1.4101E+08
Organic I (atoms)      1.4301E+09  4.4230E+07
Aerosols (kg)          4.9791E-12  1.5399E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.8800     Filtered   Transported
Noble gases (atoms)    9.5384E+15  0.0000E+00
Elemental I (atoms)    5.3808E+13  0.0000E+00
Organic I (atoms)      1.6643E+12  0.0000E+00
Aerosols (kg)          6.1820E-08  0.0000E+00

EAB Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.7205E-02  1.5862E-02  1.8088E-02
Accumulated dose (rem)  9.6828E-02  4.2452E-01  1.1680E-01

LPZ Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.6983E-03  6.1753E-03  7.0419E-03
Accumulated dose (rem)  3.7697E-02  1.6527E-01  4.5471E-02

CR Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.9084E-05  5.8915E-01  2.6125E-02
Accumulated dose (rem)  3.4245E-03  1.7875E+01  7.9185E-01

DW Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg          Atoms      Decay
Co-58                  2.1954E+01  6.9041E-07  7.1686E+18  4.3041E+15
Co-60                  2.6296E+01  2.3263E-05  2.3349E+20  5.1539E+15
Kr-85                  1.3592E+06  3.4645E+00  2.4546E+25  1.5077E+20
Kr-85m                 1.6441E+07  1.9978E-03  1.4154E+22  1.9872E+21
Kr-87                  1.5115E+07  5.3361E-04  3.6937E+21  2.3084E+21
Kr-88                  3.7430E+07  2.9850E-03  2.0428E+22  4.7622E+21
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Rb-86	7.5639E+02	9.2960E-06	6.5095E+19	3.1286E+17
Sr-89	3.7204E+04	1.2806E-03	8.6651E+21	7.2949E+18
Sr-90	4.8972E+03	3.5902E-02	2.4023E+23	9.5983E+17
Sr-91	4.0038E+04	1.1045E-05	7.3093E+19	8.2842E+18
Sr-92	2.8949E+04	2.3031E-06	1.5076E+19	6.8898E+18
Y-90	5.5979E+01	1.0289E-07	6.8847E+17	1.0034E+16
Y-91	4.7305E+02	1.9289E-05	1.2765E+20	9.2589E+16
Y-92	1.0393E+03	1.0801E-07	7.0704E+17	1.0944E+17
Y-93	4.6500E+02	1.3938E-07	9.0251E+17	9.5900E+16
Zr-95	5.7658E+02	2.6839E-05	1.7013E+20	1.1304E+17
Zr-97	5.1470E+02	2.6924E-07	1.6716E+18	1.0399E+17
Nb-95	5.7823E+02	1.4787E-05	9.3739E+19	1.1333E+17
Mo-99	7.2326E+03	1.5080E-05	9.1732E+19	1.4286E+18
Tc-99m	6.5087E+03	1.2378E-06	7.5296E+18	1.2721E+18
Ru-103	6.3996E+03	1.9829E-04	1.1593E+21	1.2550E+18
Ru-105	3.3441E+03	4.9749E-07	2.8533E+18	7.3686E+17
Ru-106	2.7873E+03	8.3314E-04	4.7333E+21	5.4633E+17
Rh-105	4.2684E+03	5.0571E-06	2.9004E+19	8.3795E+17
Sb-127	7.2478E+03	2.7140E-05	1.2869E+20	1.4284E+18
Sb-129	1.6493E+04	2.9329E-06	1.3692E+19	3.6462E+18
Te-127	7.2647E+03	2.7527E-06	1.3053E+19	1.4208E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.4447E+17
Te-129	1.8663E+04	8.9118E-07	4.1603E+18	3.8127E+18
Te-129m	4.1101E+03	1.3643E-04	6.3691E+20	8.0555E+17
Te-131m	1.4764E+04	1.8515E-05	8.5114E+19	2.9434E+18
Te-132	1.0899E+05	3.5899E-04	1.6378E+21	2.1501E+19
I-131	4.1769E+05	3.3692E-03	1.5488E+22	1.4725E+20
I-132	5.9120E+05	5.7275E-05	2.6130E+20	2.0958E+20
I-133	8.1825E+05	7.2232E-04	3.2706E+21	2.9914E+20
I-134	2.0512E+05	7.6890E-06	3.4555E+19	2.0480E+20
I-135	6.7019E+05	1.9084E-04	8.5129E+20	2.6730E+20
Xe-133	1.4478E+08	7.7349E-01	3.5023E+24	1.6087E+22
Xe-135	6.0157E+07	2.3557E-02	1.0508E+23	6.7404E+21
Cs-134	8.2994E+04	6.4146E-02	2.8828E+23	3.4263E+19
Cs-136	2.4722E+04	3.3731E-04	1.4936E+21	1.0234E+19
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.7573E+19
Ba-139	2.1655E+04	1.3239E-06	5.7356E+18	6.2871E+18
Ba-140	5.7220E+04	7.8160E-04	3.3621E+21	1.1233E+19
La-140	7.0228E+02	1.2635E-06	5.4349E+18	1.2026E+17
La-141	3.7971E+02	6.7141E-08	2.8676E+17	8.4975E+16
La-142	2.1517E+02	1.5031E-08	6.3745E+16	5.9795E+16
Ce-141	1.3561E+03	4.7593E-05	2.0327E+20	2.6583E+17
Ce-143	1.2566E+03	1.8923E-06	7.9689E+18	2.5014E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	2.1346E+17
Pr-143	5.0945E+02	7.5655E-06	3.1861E+19	9.9814E+16
Nd-147	2.1156E+02	2.6151E-06	1.0713E+19	4.1544E+16
Np-239	1.5059E+04	6.4914E-05	1.6356E+20	2.9783E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	8.6183E+14
Pu-239	3.8521E-01	6.1975E-03	1.5616E+22	7.5492E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.4138E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	3.0473E+16
Am-241	1.0418E-01	3.0353E-05	7.5847E+19	2.0416E+13
Cm-242	2.6431E+01	7.9749E-06	1.9846E+19	5.1810E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.4247E+14

DW Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8191E+25	0.0000E+00	
Elemental I (atoms)	8.9461E+20	4.8074E+22	
Organic I (atoms)	1.4880E+21	0.0000E+00	
Aerosols (kg)	8.8765E-01	4.8455E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3585E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6880E-04
Total I (Ci)			2.7024E+06

DW to RB Transport Group Inventory:

Time (h) = 2.0000	Leakage Transport
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5764E+18
Organic I (atoms)	8.6218E+17
Aerosols (kg)	1.6620E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3236E+17
Organic I (atoms)	0.0000E+00	4.5523E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3236E+17
Organic I (atoms)	0.0000E+00	4.5523E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.5907E-02	5.0025E-10	5.1941E+15	1.7496E+12
Co-60	1.9053E-02	1.6856E-08	1.6918E+17	2.0952E+12
Kr-85	5.7203E+02	1.4580E-03	1.0330E+22	4.6145E+16
Kr-85m	6.9191E+03	8.4076E-07	5.9567E+18	5.9712E+17
Kr-87	6.3610E+03	2.2457E-07	1.5545E+18	6.5901E+17
Kr-88	1.5752E+04	1.2562E-06	8.5968E+18	1.4152E+18
Rb-86	9.7796E-01	1.2019E-08	8.4164E+16	1.9457E+14
Sr-89	2.6957E+01	9.2788E-07	6.2784E+18	2.9652E+15
Sr-90	3.5484E+00	2.6013E-05	1.7406E+20	3.9020E+14
Sr-91	2.9010E+01	8.0029E-09	5.2961E+16	3.3126E+15
Sr-92	2.0975E+01	1.6688E-09	1.0923E+16	2.6401E+15
Y-90	6.4720E-02	1.1896E-10	7.9598E+14	5.8594E+12
Y-91	3.4671E-01	1.4138E-08	9.3560E+16	3.7934E+13
Y-92	3.4598E+00	3.5956E-10	2.3536E+15	2.6130E+14
Y-93	3.3692E-01	1.0099E-10	6.5393E+14	3.8386E+13
Zr-95	4.1777E-01	1.9446E-08	1.2327E+17	4.5950E+13
Zr-97	3.7294E-01	1.9508E-10	1.2112E+15	4.1885E+13
Nb-95	4.1897E-01	1.0714E-08	6.7920E+16	4.6070E+13
Mo-99	5.2405E+00	1.0926E-08	6.6465E+16	5.7938E+14
Tc-99m	4.7160E+00	8.9688E-10	5.4557E+15	5.1648E+14
Ru-103	4.6369E+00	1.4367E-07	8.4002E+17	5.1009E+14
Ru-105	2.4230E+00	3.6046E-10	2.0674E+15	2.8906E+14
Ru-106	2.0196E+00	6.0366E-07	3.4296E+18	2.2209E+14
Rh-105	3.0928E+00	3.6642E-09	2.1015E+16	3.4043E+14
Sb-127	5.2515E+00	1.9665E-08	9.3248E+16	5.7971E+14
Sb-129	1.1950E+01	2.1251E-09	9.9205E+15	1.4289E+15
Te-127	5.2637E+00	1.9945E-09	9.4577E+15	5.7717E+14
Te-127m	9.0378E-01	9.5815E-08	4.5434E+17	9.9383E+13
Te-129	1.3523E+01	6.4572E-10	3.0144E+15	1.5176E+15
Te-129m	2.9780E+00	9.8855E-08	4.6149E+17	3.2748E+14
Te-131m	1.0697E+01	1.3415E-08	6.1670E+16	1.1904E+15
Te-132	7.8968E+01	2.6011E-07	1.1867E+18	8.7232E+15
I-131	4.7020E+02	3.7927E-06	1.7435E+19	8.7118E+16
I-132	5.0947E+02	4.9357E-08	2.2518E+17	1.0381E+17
I-133	9.2161E+02	8.1357E-07	3.6838E+18	1.7490E+17
I-134	2.3103E+02	8.6603E-09	3.8921E+16	8.6766E+16
I-135	7.5485E+02	2.1494E-07	9.5883E+17	1.5183E+17
Xe-133	6.0860E+04	3.2514E-04	1.4722E+21	4.9178E+18
Xe-135	2.4617E+04	9.6396E-06	4.3001E+19	2.0167E+18
Cs-134	1.0731E+02	8.2937E-05	3.7273E+20	2.1322E+16
Cs-136	3.1964E+01	4.3613E-07	1.9312E+18	6.3627E+15
Cs-137	8.6357E+01	9.9282E-04	4.3641E+21	1.7159E+16
Ba-139	1.5690E+01	9.5923E-10	4.1558E+15	2.2681E+15
Ba-140	4.1459E+01	5.6632E-07	2.4360E+18	4.5644E+15
La-140	9.5656E-01	1.7210E-09	7.4027E+15	8.1926E+13
La-141	2.7512E-01	4.8648E-11	2.0778E+14	3.3177E+13
La-142	1.5590E-01	1.0891E-11	4.6187E+13	2.1859E+13
Ce-141	9.8231E-01	3.4475E-08	1.4724E+17	1.0804E+14
Ce-143	9.1051E-01	1.3711E-09	5.7740E+15	1.0121E+14
Ce-144	7.8907E-01	2.4740E-07	1.0346E+18	8.6774E+13
Pr-143	3.6988E-01	5.4929E-09	2.3132E+16	4.0632E+13
Nd-147	1.5329E-01	1.8948E-09	7.7625E+15	1.6879E+13

Np-239	1.0912E+01	4.7034E-08	1.1851E+17	1.2075E+15
Pu-238	3.1861E-03	1.8611E-07	4.7091E+17	3.5036E+11
Pu-239	2.7911E-04	4.4905E-06	1.1315E+19	3.0690E+10
Pu-240	5.2268E-04	2.2938E-06	5.7557E+18	5.7476E+10
Pu-241	1.1266E-01	1.0936E-06	2.7327E+18	1.2388E+13
Am-241	7.5492E-05	2.1995E-08	5.4962E+16	8.3005E+09
Cm-242	1.9151E-02	5.7784E-09	1.4379E+16	2.1062E+12
Cm-244	1.2661E-03	1.5649E-08	3.8624E+16	1.3922E+11

RB Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1861E+22	0.0000E+00	
Elemental I (atoms)	1.0512E+18	0.0000E+00	
Organic I (atoms)	6.9992E+17	0.0000E+00	
Aerosols (kg)	1.1180E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.9333E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.3890E-08
Total I (Ci)			2.8872E+03

DW to RB Transport Group Inventory:

Time (h) = 2.0000	Leakage Transport
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5764E+18
Organic I (atoms)	8.6218E+17
Aerosols (kg)	1.6620E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.2367E+21
Elemental I (atoms)	4.6173E+17	3.5028E+16
Organic I (atoms)	1.4832E+17	5.2288E+15
Aerosols (kg)	5.0479E-04	3.9180E-05

Environment Integral Nuclide Release:

Time (h) = 2.0000	Ci	kg	Atoms	Bq
Co-58	1.2654E-04	3.9797E-12	4.1321E+13	4.6822E+06
Co-60	1.5155E-04	1.3407E-10	1.3456E+15	5.6073E+06
Kr-85	1.0782E+02	2.7482E-04	1.9470E+21	3.9894E+12
Kr-85m	1.3851E+03	1.6831E-07	1.1925E+18	5.1249E+13
Kr-87	1.5019E+03	5.3023E-08	3.6703E+17	5.5571E+13
Kr-88	3.2692E+03	2.6072E-07	1.7842E+18	1.2096E+14
Rb-86	3.5272E-02	4.3349E-10	3.0355E+15	1.3051E+09
Sr-89	2.1447E-01	7.3822E-09	4.9951E+16	7.9353E+09
Sr-90	2.8223E-02	2.0690E-07	1.3845E+18	1.0443E+09
Sr-91	2.3881E-01	6.5879E-11	4.3597E+14	8.8360E+09
Sr-92	1.8877E-01	1.5018E-11	9.8307E+13	6.9845E+09
Y-90	4.5712E-04	8.4019E-13	5.6219E+12	1.6913E+07
Y-91	2.7491E-03	1.1210E-10	7.4185E+14	1.0172E+08
Y-92	2.2768E-02	2.3662E-12	1.5489E+13	8.4243E+08
Y-93	2.7678E-03	8.2960E-13	5.3720E+12	1.0241E+08
Zr-95	3.3235E-03	1.5471E-10	9.8070E+14	1.2297E+08
Zr-97	3.0239E-03	1.5818E-12	9.8204E+12	1.1188E+08
Nb-95	3.3324E-03	8.5221E-11	5.4023E+14	1.2330E+08
Mo-99	4.1887E-02	8.7335E-11	5.3125E+14	1.5498E+09
Tc-99m	3.7538E-02	7.1389E-12	4.3426E+13	1.3889E+09
Ru-103	3.6894E-02	1.1431E-09	6.6837E+15	1.3651E+09
Ru-105	2.0760E-02	3.0884E-12	1.7713E+13	7.6814E+08
Ru-106	1.6064E-02	4.8016E-09	2.7279E+16	5.9437E+08
Rh-105	2.4637E-02	2.9189E-11	1.6741E+14	9.1158E+08
Sb-127	4.1916E-02	1.5696E-10	7.4428E+14	1.5509E+09
Sb-129	1.0260E-01	1.8246E-11	8.5178E+13	3.7964E+09
Te-127	4.1879E-02	1.5869E-11	7.5246E+13	1.5495E+09
Te-127m	7.1885E-03	7.6209E-10	3.6137E+15	2.6597E+08
Te-129	1.1182E-01	5.3393E-12	2.4926E+13	4.1373E+09
Te-129m	2.3687E-02	7.8629E-10	3.6707E+15	8.7643E+08
Te-131m	8.6009E-02	1.0786E-10	4.9584E+14	3.1823E+09
Te-132	6.3070E-01	2.0775E-09	9.4778E+15	2.3336E+10
I-131	1.4999E+01	1.2098E-07	5.5616E+17	5.5495E+11

I-132	1.9442E+01	1.8835E-09	8.5930E+15	7.1935E+11
I-133	3.0592E+01	2.7005E-08	1.2228E+17	1.1319E+12
I-134	2.2889E+01	8.5800E-10	3.8559E+15	8.4687E+11
I-135	2.7585E+01	7.8548E-09	3.5039E+16	1.0206E+12
Xe-133	1.1487E+04	6.1368E-05	2.7787E+20	4.2502E+14
Xe-135	4.6875E+03	1.8355E-06	8.1881E+18	1.7344E+14
Cs-134	3.8623E+00	2.9852E-06	1.3416E+19	1.4290E+11
Cs-136	1.1539E+00	1.5744E-08	6.9713E+16	4.2693E+10
Cs-137	3.1081E+00	3.5733E-05	1.5707E+20	1.1500E+11
Ba-139	1.6045E-01	9.8090E-12	4.2497E+13	5.9365E+09
Ba-140	3.3011E-01	4.5092E-09	1.9396E+16	1.2214E+10
La-140	6.5437E-03	1.1773E-11	5.0641E+13	2.4212E+08
La-141	2.3806E-03	4.2095E-13	1.7979E+12	8.8084E+07
La-142	1.5498E-03	1.0827E-13	4.5915E+11	5.7344E+07
Ce-141	7.8145E-03	2.7426E-10	1.1714E+15	2.8914E+08
Ce-143	7.3135E-03	1.1013E-11	4.6379E+13	2.7060E+08
Ce-144	6.2764E-03	1.9678E-09	8.2296E+15	2.3223E+08
Pr-143	2.9402E-03	4.3663E-11	1.8388E+14	1.0879E+08
Nd-147	1.2207E-03	1.5090E-11	6.1817E+13	4.5167E+07
Np-239	8.7287E-02	3.7625E-10	9.4805E+14	3.2296E+09
Pu-238	2.5342E-05	1.4803E-09	3.7455E+15	9.3764E+05
Pu-239	2.2199E-06	3.5714E-08	8.9990E+16	8.2136E+04
Pu-240	4.1573E-06	1.8244E-08	4.5780E+16	1.5382E+05
Pu-241	8.9605E-04	8.6984E-09	2.1736E+16	3.3154E+07
Am-241	6.0040E-07	1.7493E-10	4.3712E+14	2.2215E+04
Cm-242	1.5234E-04	4.5964E-11	1.1438E+14	5.6365E+06
Cm-244	1.0070E-05	1.2447E-10	3.0721E+14	3.7260E+05

Environment Transport Group Inventory:

Time (h) = 2.0000	Total Release	Release Rate/s	
Noble gases (atoms)	2.2364E+21	3.1062E+17	
Elemental I (atoms)	3.5006E+16	4.8620E+12	
Organic I (atoms)	5.2217E+15	7.2524E+11	
Aerosols (kg)	3.9180E-05	5.4417E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.1028E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.6562E+01
Total I (Ci)			1.1551E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.2367E+21
Elemental I (atoms)	4.6173E+17	3.5028E+16
Organic I (atoms)	1.4832E+17	5.2288E+15
Aerosols (kg)	5.0479E-04	3.9180E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2826E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2523E+12
Aerosols (kg)	0.0000E+00	8.2695E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	8.7510E+14
Elemental I (atoms)	5.0367E+09	1.5577E+08
Organic I (atoms)	1.7330E+09	5.3599E+07
Aerosols (kg)	5.4872E-12	1.6971E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	9.8953E+15	0.0000E+00

Elemental I (atoms)	5.5383E+13	0.0000E+00
Organic I (atoms)	1.7131E+12	0.0000E+00
Aerosols (kg)	6.3667E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.6508E-11	5.1916E-19	5.3904E+06	1.3182E+03
Co-60	1.9773E-11	1.7493E-17	1.7557E+08	1.5787E+03
Kr-85	1.8322E-04	4.6701E-10	3.3087E+15	7.1025E+10
Kr-85m	2.2162E-03	2.6930E-13	1.9080E+12	1.0146E+12
Kr-87	2.0375E-03	7.1930E-14	4.9790E+11	1.4558E+12
Kr-88	5.0455E-03	4.0237E-13	2.7536E+12	2.5496E+12
Rb-86	1.7223E-05	2.1167E-13	1.4822E+12	8.5249E+09
Sr-89	2.7976E-08	9.6295E-16	6.5158E+09	2.2340E+06
Sr-90	3.6825E-09	2.6996E-14	1.8064E+11	2.9400E+05
Sr-91	3.0107E-08	8.3054E-18	5.4963E+07	2.4760E+06
Sr-92	2.1768E-08	1.7318E-18	1.1336E+07	1.9325E+06
Y-90	7.6109E-11	1.3989E-19	9.3604E+05	5.1004E+03
Y-91	3.6131E-10	1.4733E-17	9.7498E+07	2.8695E+04
Y-92	4.6059E-09	4.7866E-19	3.1332E+06	2.7743E+05
Y-93	3.4966E-10	1.0480E-19	6.7865E+05	2.8705E+04
Zr-95	4.3356E-10	2.0182E-17	1.2793E+08	3.4620E+04
Zr-97	3.8703E-10	2.0246E-19	1.2569E+06	3.1417E+04
Nb-95	4.3480E-10	1.1119E-17	7.0487E+07	3.4712E+04
Mo-99	5.4386E-09	1.1339E-17	6.8978E+07	4.3604E+05
Tc-99m	4.8943E-09	9.3078E-19	5.6619E+06	3.8897E+05
Ru-103	4.8122E-09	1.4910E-16	8.7177E+08	3.8430E+05
Ru-105	2.5146E-09	3.7409E-19	2.1455E+06	2.1404E+05
Ru-106	2.0959E-09	6.2648E-16	3.5592E+09	1.6734E+05
Rh-105	3.2097E-09	3.8027E-18	2.1810E+07	2.5642E+05
Sb-127	5.4500E-09	2.0408E-17	9.6772E+07	4.3643E+05
Sb-129	1.2402E-08	2.2054E-18	1.0296E+07	1.0575E+06
Te-127	5.4627E-09	2.0699E-18	9.8152E+06	4.3477E+05
Te-127m	9.3794E-10	9.9437E-17	4.7151E+08	7.4881E+04
Te-129	1.4034E-08	6.7012E-19	3.1284E+06	1.1324E+06
Te-129m	3.0906E-09	1.0259E-16	4.7893E+08	2.4674E+05
Te-131m	1.1102E-08	1.3922E-17	6.4001E+07	8.9464E+05
Te-132	8.1953E-08	2.6994E-16	1.2315E+09	6.5663E+06
I-131	7.0434E-03	5.6813E-11	2.6117E+14	3.4940E+12
I-132	5.8108E-03	5.6295E-13	2.5683E+12	4.0234E+12
I-133	1.3812E-02	1.2192E-11	5.5207E+13	7.0774E+12
I-134	3.4623E-03	1.2979E-13	5.8328E+11	4.3287E+12
I-135	1.1313E-02	3.2212E-12	1.4369E+13	6.2725E+12
Xe-133	1.9569E-02	1.0454E-10	4.7337E+14	7.5978E+12
Xe-135	8.6331E-03	3.3806E-12	1.5080E+13	3.2765E+12
Cs-134	1.8898E-03	1.4606E-09	6.5642E+15	9.3386E+11
Cs-136	5.6292E-04	7.6807E-12	3.4010E+13	2.7883E+11
Cs-137	1.5208E-03	1.7485E-08	7.6858E+16	7.5151E+11
Ba-139	1.6283E-08	9.9549E-19	4.3129E+06	1.6109E+06
Ba-140	4.3027E-08	5.8772E-16	2.5281E+09	3.4382E+06
La-140	1.1583E-09	2.0839E-18	8.9638E+06	7.4433E+04
La-141	2.8552E-10	5.0487E-20	2.1563E+05	2.4510E+04
La-142	1.6180E-10	1.1303E-20	4.7933E+04	1.5630E+04
Ce-141	1.0193E-09	3.5775E-17	1.5279E+08	8.1395E+04
Ce-143	9.4492E-10	1.4229E-18	5.9922E+06	7.6083E+04
Ce-144	8.1889E-10	2.5675E-16	1.0737E+09	6.5380E+04
Pr-143	3.8414E-10	5.7047E-18	2.4024E+07	3.0636E+04
Nd-147	1.5908E-10	1.9664E-18	8.0559E+06	1.2714E+04
Np-239	1.1324E-08	4.8812E-17	1.2299E+08	9.0855E+05
Pu-238	3.3065E-12	1.9314E-16	4.8871E+08	2.6398E+02
Pu-239	2.8966E-13	4.6602E-15	1.1742E+10	2.3124E+01
Pu-240	5.4244E-13	2.3805E-15	5.9732E+09	4.3306E+01
Pu-241	1.1691E-10	1.1350E-15	2.8360E+09	9.3341E+03
Am-241	7.8348E-14	2.2828E-17	5.7042E+07	6.2544E+00
Cm-242	1.9875E-11	5.9968E-18	1.4923E+07	1.5869E+03
Cm-244	1.3139E-12	1.6241E-17	4.0084E+07	1.0490E+02

CR Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump
Noble gases (atoms)	3.8023E+15	0.0000E+00
Elemental I (atoms)	1.6194E+13	0.0000E+00

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Organic I (atoms)      5.0141E+11  0.0000E+00
Aerosols (kg)          1.9022E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         3.3944E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   4.1765E-12
Total I (Ci)                                   4.1441E-02

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2826E+16
Elemental I (atoms)    0.0000E+00  7.2800E+13
Organic I (atoms)      0.0000E+00  2.2523E+12
Aerosols (kg)          0.0000E+00  8.2695E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.7510E+14
Elemental I (atoms)    5.0367E+09  1.5577E+08
Organic I (atoms)      1.7330E+09  5.3599E+07
Aerosols (kg)          5.4872E-12  1.6971E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    9.8953E+15  0.0000E+00
Elemental I (atoms)    5.5383E+13  0.0000E+00
Organic I (atoms)      1.7131E+12  0.0000E+00
Aerosols (kg)          6.3667E-08  0.0000E+00

EAB Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5852E-02  1.3347E-02  1.6598E-02
Accumulated dose (rem)  1.1268E-01  4.3787E-01  1.3340E-01

LPZ Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1713E-03  5.1960E-03  6.4620E-03
Accumulated dose (rem)  4.3868E-02  1.7047E-01  5.1933E-02

CR Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.7429E-05  4.5026E-01  1.9971E-02
Accumulated dose (rem)  3.4920E-03  1.8325E+01  8.1182E-01

DW Compartment Nuclide Inventory:

Time (h) =   2.1000       Ci           kg         Atoms      Decay
Co-58                  1.0928E+00  3.4368E-08  3.5684E+17  4.3186E+15
Co-60                  1.3091E+00  1.1581E-06  1.1623E+19  5.1714E+15
Kr-85                  1.3591E+06  3.4642E+00  2.4543E+25  1.6887E+20
Kr-85m                 1.6187E+07  1.9669E-03  1.3936E+22  2.2045E+21
Kr-87                  1.4312E+07  5.0526E-04  3.4974E+21  2.5043E+21
Kr-88                  3.6524E+07  2.9128E-03  1.9933E+22  5.2547E+21
Rb-86                  3.7648E+01  4.6269E-07  3.2400E+18  3.1336E+17
Sr-89                  1.8520E+03  6.3746E-05  4.3133E+20  7.3195E+18
Sr-90                  2.4379E+02  1.7872E-03  1.1959E+22  9.6308E+17
Sr-91                  1.9787E+03  5.4584E-07  3.6122E+18  8.3106E+18
Sr-92                  1.4047E+03  1.1176E-07  7.3154E+17  6.9087E+18
Y-90                   3.0477E+00  5.6018E-09  3.7483E+16  1.0071E+16
Y-91                   2.3589E+01  9.6188E-07  6.3654E+18  9.2903E+16
Y-92                   7.8596E+01  8.1681E-09  5.3467E+16  1.1012E+17
Y-93                   2.2990E+01  6.8908E-09  4.4621E+16  9.6207E+16
Zr-95                  2.8701E+01  1.3360E-06  8.4691E+18  1.1342E+17
Zr-97                  2.5518E+01  1.3348E-08  8.2871E+16  1.0433E+17
Nb-95                  2.8785E+01  7.3613E-07  4.6664E+18  1.1371E+17
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Mo-99	3.5967E+02	7.4991E-07	4.5617E+18	1.4334E+18
Tc-99m	3.2395E+02	6.1608E-08	3.7476E+17	1.2764E+18
Ru-103	3.1855E+02	9.8703E-06	5.7709E+19	1.2592E+18
Ru-105	1.6390E+02	2.4382E-08	1.3984E+17	7.3906E+17
Ru-106	1.3876E+02	4.1474E-05	2.3563E+20	5.4818E+17
Rh-105	2.1239E+02	2.5164E-07	1.4432E+18	8.4078E+17
Sb-127	3.6054E+02	1.3501E-06	6.4017E+18	1.4332E+18
Sb-129	8.0796E+02	1.4368E-07	6.7074E+17	3.6570E+18
Te-127	3.6162E+02	1.3702E-07	6.4974E+17	1.4256E+18
Te-127m	6.2094E+01	6.5830E-06	3.1215E+19	2.4529E+17
Te-129	9.2061E+02	4.3959E-08	2.0522E+17	3.8247E+18
Te-129m	2.0460E+02	6.7917E-06	3.1706E+19	8.0827E+17
Te-131m	7.3326E+02	9.1956E-07	4.2273E+18	2.9532E+18
Te-132	5.4207E+03	1.7855E-05	8.1459E+19	2.1573E+19
I-131	5.0440E+04	4.0686E-04	1.8703E+21	1.4793E+20
I-132	6.9462E+04	6.7294E-06	3.0701E+19	2.1052E+20
I-133	9.8517E+04	8.6967E-05	3.9378E+20	3.0045E+20
I-134	2.2895E+04	8.5824E-07	3.8570E+18	2.0512E+20
I-135	8.0115E+04	2.2813E-05	1.0176E+20	2.6838E+20
Xe-133	1.4469E+08	7.7298E-01	3.5000E+24	1.8015E+22
Xe-135	5.9695E+07	2.3376E-02	1.0428E+23	7.5386E+21
Cs-134	4.1315E+03	3.1933E-03	1.4351E+22	3.4318E+19
Cs-136	1.2304E+03	1.6788E-05	7.4338E+19	1.0251E+19
Cs-137	3.3249E+03	3.8226E-02	1.6803E+23	2.7617E+19
Ba-139	1.0251E+03	6.2672E-08	2.7152E+17	6.3011E+18
Ba-140	2.8478E+03	3.8900E-05	1.6733E+20	1.1271E+19
La-140	3.9802E+01	7.1609E-08	3.0803E+17	1.2072E+17
La-141	1.8572E+01	3.2839E-09	1.4026E+16	8.5225E+16
La-142	1.0240E+01	7.1536E-10	3.0338E+15	5.9934E+16
Ce-141	6.7503E+01	2.3691E-06	1.0118E+19	2.6673E+17
Ce-143	6.2425E+01	9.4002E-08	3.9587E+17	2.5097E+17
Ce-144	5.4212E+01	1.6997E-05	7.1082E+19	2.1418E+17
Pr-143	2.5369E+01	3.7674E-07	1.5866E+18	1.0015E+17
Nd-147	1.0529E+01	1.3015E-07	5.3318E+17	4.1685E+16
Np-239	7.4875E+02	3.2275E-06	8.1324E+18	2.9883E+18
Pu-238	2.1890E-01	1.2787E-05	3.2354E+19	8.6475E+14
Pu-239	1.9177E-02	3.0852E-04	7.7739E+20	7.5747E+13
Pu-240	3.5911E-02	1.5759E-04	3.9544E+20	1.4186E+14
Pu-241	7.7400E+00	7.5136E-05	1.8775E+20	3.0576E+16
Am-241	5.1862E-03	1.5111E-06	3.7759E+18	2.0485E+13
Cm-242	1.3158E+00	3.9699E-07	9.8792E+17	5.1986E+15
Cm-244	8.6986E-02	1.0752E-06	2.6537E+18	3.4363E+14

DW Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	2.8185E+25	0.0000E+00	
Elemental I (atoms)	4.4456E+19	4.8566E+22	
Organic I (atoms)	1.4852E+21	0.0000E+00	
Aerosols (kg)	4.4188E-02	4.8943E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.6385E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.0325E-05
Total I (Ci)			3.2143E+05

DW to RB Transport Group Inventory:

Time (h) = 2.1000 Leakage Transport

Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5517E+17
Aerosols (kg)	1.6722E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.1000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3549E+17
Organic I (atoms)	0.0000E+00	4.8368E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.1000 Pipe Walls Transported

Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3549E+17
Organic I (atoms)	0.0000E+00	4.8368E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.5808E-02	4.9713E-10	5.1617E+15	1.9601E+12
Co-60	1.8935E-02	1.6751E-08	1.6813E+17	2.3474E+12
Kr-85	6.3677E+02	1.6230E-03	1.1499E+22	5.4627E+16
Kr-85m	7.5840E+03	9.2156E-07	6.5291E+18	6.9892E+17
Kr-87	6.7053E+03	2.3672E-07	1.6386E+18	7.5081E+17
Kr-88	1.7112E+04	1.3647E-06	9.3390E+18	1.6459E+18
Rb-86	9.6029E-01	1.1802E-08	8.2643E+16	2.0736E+14
Sr-89	2.6788E+01	9.2208E-07	6.2392E+18	3.3220E+15
Sr-90	3.5264E+00	2.5852E-05	1.7298E+20	4.3717E+14
Sr-91	2.8621E+01	7.8955E-09	5.2250E+16	3.6953E+15
Sr-92	2.0319E+01	1.6165E-09	1.0582E+16	2.9142E+15
Y-90	6.7426E-02	1.2393E-10	8.2925E+14	6.7071E+12
Y-91	3.4504E-01	1.4070E-08	9.3108E+16	4.2522E+13
Y-92	3.7039E+00	3.8493E-10	2.5196E+15	3.0571E+14
Y-93	3.3255E-01	9.9675E-11	6.4543E+14	4.2831E+13
Zr-95	4.1516E-01	1.9325E-08	1.2250E+17	5.1480E+13
Zr-97	3.6911E-01	1.9308E-10	1.1987E+15	4.6811E+13
Nb-95	4.1637E-01	1.0648E-08	6.7499E+16	5.1616E+13
Mo-99	5.2026E+00	1.0847E-08	6.5985E+16	6.4872E+14
Tc-99m	4.6859E+00	8.9115E-10	5.4209E+15	5.7855E+14
Ru-103	4.6079E+00	1.4277E-07	8.3476E+17	5.7147E+14
Ru-105	2.3707E+00	3.5268E-10	2.0228E+15	3.2089E+14
Ru-106	2.0071E+00	5.9992E-07	3.4083E+18	2.4883E+14
Rh-105	3.0723E+00	3.6399E-09	2.0876E+16	3.8133E+14
Sb-127	5.2151E+00	1.9528E-08	9.2601E+16	6.4920E+14
Sb-129	1.1687E+01	2.0783E-09	9.7022E+15	1.5858E+15
Te-127	5.2307E+00	1.9820E-09	9.3984E+15	6.4659E+14
Te-127m	8.9819E-01	9.5222E-08	4.5153E+17	1.1135E+14
Te-129	1.3317E+01	6.3587E-10	2.9684E+15	1.6913E+15
Te-129m	2.9596E+00	9.8241E-08	4.5862E+17	3.6690E+14
Te-131m	1.0607E+01	1.3301E-08	6.1147E+16	1.3318E+15
Te-132	7.8409E+01	2.5827E-07	1.1783E+18	9.7681E+15
I-131	4.6397E+02	3.7425E-06	1.7204E+19	9.3299E+16
I-132	4.9335E+02	4.7796E-08	2.1805E+17	1.1045E+17
I-133	9.0669E+02	8.0039E-07	3.6241E+18	1.8700E+17
I-134	2.1071E+02	7.8986E-09	3.5497E+16	8.9687E+16
I-135	7.3733E+02	2.0995E-07	9.3657E+17	1.6170E+17
Xe-133	6.7722E+04	3.6180E-04	1.6382E+21	5.8201E+18
Xe-135	2.7301E+04	1.0691E-05	4.7690E+19	2.3817E+18
Cs-134	1.0538E+02	8.1451E-05	3.6605E+20	2.2726E+16
Cs-136	3.1384E+01	4.2822E-07	1.8962E+18	6.7808E+15
Cs-137	8.4810E+01	9.7503E-04	4.2859E+21	1.8289E+16
Ba-139	1.4828E+01	9.0654E-10	3.9276E+15	2.4706E+15
Ba-140	4.1193E+01	5.6268E-07	2.4204E+18	5.1131E+15
La-140	1.0080E+00	1.8135E-09	7.8007E+15	9.4418E+13
La-141	2.6864E-01	4.7501E-11	2.0288E+14	3.6787E+13
La-142	1.4813E-01	1.0348E-11	4.3883E+13	2.3877E+13
Ce-141	9.7617E-01	3.4260E-08	1.4632E+17	1.2104E+14
Ce-143	9.0297E-01	1.3597E-09	5.7262E+15	1.1325E+14
Ce-144	7.8417E-01	2.4586E-07	1.0282E+18	9.7219E+13
Pr-143	3.6769E-01	5.4603E-09	2.2995E+16	4.5528E+13
Nd-147	1.5230E-01	1.8826E-09	7.7124E+15	1.8908E+13
Np-239	1.0831E+01	4.6686E-08	1.1763E+17	1.3518E+15
Pu-238	3.1664E-03	1.8496E-07	4.6800E+17	3.9254E+11
Pu-239	2.7739E-04	4.4627E-06	1.1245E+19	3.4385E+10
Pu-240	5.1944E-04	2.2796E-06	5.7200E+18	6.4395E+10
Pu-241	1.1196E-01	1.0868E-06	2.7158E+18	1.3880E+13
Am-241	7.5026E-05	2.1860E-08	5.4623E+16	9.2998E+09
Cm-242	1.9032E-02	5.7425E-09	1.4290E+16	2.3597E+12
Cm-244	1.2582E-03	1.5553E-08	3.8385E+16	1.5598E+11

RB Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump
Noble gases (atoms)	1.3202E+22	0.0000E+00

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Elemental I (atoms)    1.0322E+18  0.0000E+00
Organic I (atoms)      7.6710E+17  0.0000E+00
Aerosols (kg)          1.0984E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.9055E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    2.3515E-08
Total I (Ci)                                    2.8121E+03

DW to  RB Transport Group Inventory:
Time (h) =   2.1000  Leakage Transport

Noble gases (atoms)      1.5869E+22
Elemental I (atoms)      1.5867E+18
Organic I (atoms)        9.5517E+17
Aerosols (kg)            1.6722E-03

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.1000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.6556E+21
Elemental I (atoms)    4.9573E+17  3.6080E+16
Organic I (atoms)      1.7212E+17  5.9650E+15
Aerosols (kg)          5.4091E-04  4.0298E-05

Environment Integral Nuclide Release:

Time (h) =   2.1000       Ci           kg          Atoms         Bq
Co-58                  1.4254E-04  4.4826E-12  4.6543E+13  5.2739E+06
Co-60                  1.7070E-04  1.5101E-10  1.5157E+15  6.3160E+06
Kr-85                  1.2802E+02  3.2631E-04  2.3119E+21  4.7369E+12
Kr-85m                 1.6257E+03  1.9755E-07  1.3996E+18  6.0152E+13
Kr-87                  1.7147E+03  6.0534E-08  4.1902E+17  6.3443E+13
Kr-88                  3.8121E+03  3.0402E-07  2.0805E+18  1.4105E+14
Rb-86                  3.6246E-02  4.4547E-10  3.1194E+15  1.3411E+09
Sr-89                  2.4157E-01  8.3150E-09  5.6263E+16  8.9381E+09
Sr-90                  3.1791E-02  2.3306E-07  1.5595E+18  1.1763E+09
Sr-91                  2.6777E-01  7.3866E-11  4.8883E+14  9.9073E+09
Sr-92                  2.0933E-01  1.6654E-11  1.0901E+14  7.7451E+09
Y-90                   5.2551E-04  9.6590E-13  6.4631E+12  1.9444E+07
Y-91                   3.0982E-03  1.2634E-10  8.3606E+14  1.1464E+08
Y-92                   2.6535E-02  2.7577E-12  1.8051E+13  9.8181E+08
Y-93                   3.1042E-03  9.3044E-13  6.0250E+12  1.1486E+08
Zr-95                  3.7435E-03  1.7426E-10  1.1046E+15  1.3851E+08
Zr-97                  3.3973E-03  1.7771E-12  1.1033E+13  1.2570E+08
Nb-95                  3.7537E-03  9.5994E-11  6.0851E+14  1.3889E+08
Mo-99                  4.7150E-02  9.8309E-11  5.9801E+14  1.7446E+09
Tc-99m                 4.2279E-02  8.0405E-12  4.8910E+13  1.5643E+09
Ru-103                 4.1555E-02  1.2876E-09  7.5282E+15  1.5376E+09
Ru-105                 2.3159E-02  3.4452E-12  1.9760E+13  8.5688E+08
Ru-106                 1.8095E-02  5.4085E-09  3.0727E+16  6.6950E+08
Rh-105                 2.7745E-02  3.2872E-11  1.8853E+14  1.0266E+09
Sb-127                 4.7192E-02  1.7672E-10  8.3796E+14  1.7461E+09
Sb-129                 1.1443E-01  2.0349E-11  9.4994E+13  4.2338E+09
Te-127                 4.7171E-02  1.7874E-11  8.4754E+13  1.7453E+09
Te-127m                8.0972E-03  8.5843E-10  4.0705E+15  2.9960E+08
Te-129                 1.2529E-01  5.9826E-12  2.7929E+13  4.6357E+09
Te-129m                2.6681E-02  8.8568E-10  4.1346E+15  9.8721E+08
Te-131m                9.6740E-02  1.2132E-10  5.5771E+14  3.5794E+09
Te-132                 7.1003E-01  2.3387E-09  1.0670E+16  2.6271E+10
I-131                  1.5468E+01  1.2477E-07  5.7358E+17  5.7233E+11
I-132                  1.9941E+01  1.9318E-09  8.8134E+15  7.3780E+11
I-133                  3.1510E+01  2.7816E-08  1.2595E+17  1.1659E+12
I-134                  2.3102E+01  8.6599E-10  3.8919E+15  8.5477E+11
I-135                  2.8331E+01  8.0674E-09  3.5987E+16  1.0483E+12
Xe-133                 1.3635E+04  7.2846E-05  3.2984E+20  5.0451E+14
Xe-135                 5.5520E+03  2.1741E-06  9.6983E+18  2.0543E+14
Cs-134                 3.9693E+00  3.0678E-06  1.3787E+19  1.4686E+11
Cs-136                 1.1857E+00  1.6178E-08  7.1638E+16  4.3871E+10
Cs-137                 3.1942E+00  3.6722E-05  1.6142E+20  1.1818E+11
Ba-139                 1.7545E-01  1.0726E-11  4.6471E+13  6.4915E+09
Ba-140                 3.7178E-01  5.0784E-09  2.1845E+16  1.3756E+10
La-140                 7.5668E-03  1.3614E-11  5.8559E+13  2.7997E+08
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La-141	2.6524E-03	4.6901E-13	2.0031E+12	9.8139E+07
La-142	1.6997E-03	1.1873E-13	5.0355E+11	6.2888E+07
Ce-141	8.8020E-03	3.0891E-10	1.3194E+15	3.2568E+08
Ce-143	8.2270E-03	1.2389E-11	5.2172E+13	3.0440E+08
Ce-144	7.0697E-03	2.2166E-09	9.2698E+15	2.6158E+08
Pr-143	3.3122E-03	4.9187E-11	2.0714E+14	1.2255E+08
Nd-147	1.3748E-03	1.6994E-11	6.9620E+13	5.0868E+07
Np-239	9.8244E-02	4.2348E-10	1.0671E+15	3.6350E+09
Pu-238	2.8545E-05	1.6674E-09	4.2190E+15	1.0562E+06
Pu-239	2.5005E-06	4.0229E-08	1.0137E+17	9.2519E+04
Pu-240	4.6828E-06	2.0551E-08	5.1566E+16	1.7326E+05
Pu-241	1.0093E-03	9.7980E-09	2.4483E+16	3.7345E+07
Am-241	6.7630E-07	1.9705E-10	4.9238E+14	2.5023E+04
Cm-242	1.7159E-04	5.1773E-11	1.2884E+14	6.3489E+06
Cm-244	1.1343E-05	1.4021E-10	3.4604E+14	4.1970E+05

Environment Transport Group Inventory:

Time (h) = 2.1000	Total Release	Release Rate/s	
Noble gases (atoms)	2.6553E+21	3.5123E+17	
Elemental I (atoms)	3.6054E+16	4.7690E+12	
Organic I (atoms)	5.9567E+15	7.8793E+11	
Aerosols (kg)	4.0295E-05	5.3300E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.1675E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.7361E+01
Total I (Ci)			1.1835E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.6556E+21
Elemental I (atoms)	4.9573E+17	3.6080E+16
Organic I (atoms)	1.7212E+17	5.9650E+15
Aerosols (kg)	5.4091E-04	4.0298E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2899E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2524E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0399E+15
Elemental I (atoms)	5.4369E+09	1.6815E+08
Organic I (atoms)	2.0139E+09	6.2286E+07
Aerosols (kg)	5.9125E-12	1.8286E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	1.0187E+16	0.0000E+00
Elemental I (atoms)	5.6587E+13	0.0000E+00
Organic I (atoms)	1.7504E+12	0.0000E+00
Aerosols (kg)	6.5081E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.8152E-11	5.7087E-19	5.9273E+06	1.5600E+03
Co-60	2.1744E-11	1.9236E-17	1.9307E+08	1.8683E+03
Kr-85	1.8066E-04	4.6047E-10	3.2624E+15	7.3431E+10
Kr-85m	2.1517E-03	2.6146E-13	1.8524E+12	1.0435E+12
Kr-87	1.9024E-03	6.7161E-14	4.6489E+11	1.4818E+12

Kr-88	4.8549E-03	3.8718E-13	2.6496E+12	2.6150E+12
Rb-86	1.5941E-05	1.9591E-13	1.3719E+12	8.7372E+09
Sr-89	3.0762E-08	1.0588E-15	7.1646E+09	2.6438E+06
Sr-90	4.0494E-09	2.9687E-14	1.9864E+11	3.4794E+05
Sr-91	3.2866E-08	9.0666E-18	6.0000E+07	2.9154E+06
Sr-92	2.3333E-08	1.8563E-18	1.2151E+07	2.2473E+06
Y-90	8.6349E-11	1.5871E-19	1.0620E+06	6.1927E+03
Y-91	3.9770E-10	1.6217E-17	1.0732E+08	3.3983E+04
Y-92	5.2468E-09	5.4528E-19	3.5693E+06	3.4178E+05
Y-93	3.8187E-10	1.1446E-19	7.4117E+05	3.3809E+04
Zr-95	4.7674E-10	2.2192E-17	1.4067E+08	4.0970E+04
Zr-97	4.2386E-10	2.2172E-19	1.3765E+06	3.7075E+04
Nb-95	4.7813E-10	1.2227E-17	7.7511E+07	4.1081E+04
Mo-99	5.9743E-09	1.2456E-17	7.5772E+07	5.1566E+05
Tc-99m	5.3809E-09	1.0233E-18	6.2249E+06	4.6025E+05
Ru-103	5.2913E-09	1.6395E-16	9.5857E+08	4.5478E+05
Ru-105	2.7224E-09	4.0499E-19	2.3228E+06	2.5059E+05
Ru-106	2.3048E-09	6.8890E-16	3.9138E+09	1.9804E+05
Rh-105	3.5280E-09	4.1798E-18	2.3973E+07	3.0338E+05
Sb-127	5.9886E-09	2.2425E-17	1.0634E+08	5.1623E+05
Sb-129	1.3421E-08	2.3866E-18	1.1141E+07	1.2378E+06
Te-127	6.0066E-09	2.2760E-18	1.0792E+07	5.1449E+05
Te-127m	1.0314E-09	1.0935E-16	5.1850E+08	8.8619E+04
Te-129	1.5292E-08	7.3018E-19	3.4087E+06	1.3319E+06
Te-129m	3.3985E-09	1.1281E-16	5.2665E+08	2.9201E+05
Te-131m	1.2180E-08	1.5274E-17	7.0216E+07	1.0571E+06
Te-132	9.0039E-08	2.9658E-16	1.3531E+09	7.7661E+06
I-131	6.5177E-03	5.2573E-11	2.4168E+14	3.5808E+12
I-132	5.2194E-03	5.0565E-13	2.3069E+12	4.0940E+12
I-133	1.2743E-02	1.1249E-11	5.0934E+13	7.2474E+12
I-134	2.9614E-03	1.1101E-13	4.9889E+11	4.3698E+12
I-135	1.0363E-02	2.9508E-12	1.3163E+13	6.4113E+12
Xe-133	1.9287E-02	1.0304E-10	4.6655E+14	7.8547E+12
Xe-135	8.4713E-03	3.3172E-12	1.4798E+13	3.3889E+12
Cs-134	1.7494E-03	1.3521E-09	6.0764E+15	9.5716E+11
Cs-136	5.2098E-04	7.1084E-12	3.1476E+13	2.8577E+11
Cs-137	1.4078E-03	1.6185E-08	7.1146E+16	7.7026E+11
Ba-139	1.7028E-08	1.0410E-18	4.5101E+06	1.8435E+06
Ba-140	4.7303E-08	6.4614E-16	2.7794E+09	4.0684E+06
La-140	1.3226E-09	2.3795E-18	1.0236E+07	9.0980E+04
La-141	3.0848E-10	5.4547E-20	2.3297E+05	2.8656E+04
La-142	1.7010E-10	1.1882E-20	5.0392E+04	1.7947E+04
Ce-141	1.1209E-09	3.9338E-17	1.6801E+08	9.6326E+04
Ce-143	1.0369E-09	1.5614E-18	6.5755E+06	8.9909E+04
Ce-144	9.0048E-10	2.8233E-16	1.1807E+09	7.7375E+04
Pr-143	4.2250E-10	6.2743E-18	2.6423E+07	3.6261E+04
Nd-147	1.7489E-10	2.1618E-18	8.8563E+06	1.5044E+04
Np-239	1.2437E-08	5.3610E-17	1.3508E+08	1.0743E+06
Pu-238	3.6360E-12	2.1239E-16	5.3741E+08	3.1241E+02
Pu-239	3.1853E-13	5.1247E-15	1.2913E+10	2.7367E+01
Pu-240	5.9649E-13	2.6177E-15	6.5684E+09	5.1252E+01
Pu-241	1.2856E-10	1.2480E-15	3.1186E+09	1.1047E+04
Am-241	8.6157E-14	2.5103E-17	6.2727E+07	7.4020E+00
Cm-242	2.1855E-11	6.5942E-18	1.6410E+07	1.8780E+03
Cm-244	1.4449E-12	1.7859E-17	4.4079E+07	1.2415E+02

CR Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump		
Noble gases (atoms)	3.7487E+15	0.0000E+00		
Elemental I (atoms)	1.4966E+13	0.0000E+00		
Organic I (atoms)	4.6352E+11	0.0000E+00		
Aerosols (kg)	1.7609E-08	0.0000E+00		
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.1374E-12	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.8547E-12	
Total I (Ci)			3.7804E-02	

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2899E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13

Organic I (atoms)	0.0000E+00	2.2524E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0399E+15
Elemental I (atoms)	5.4369E+09	1.6815E+08
Organic I (atoms)	2.0139E+09	6.2286E+07
Aerosols (kg)	5.9125E-12	1.8286E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	1.0187E+16	0.0000E+00
Elemental I (atoms)	5.6587E+13	0.0000E+00
Organic I (atoms)	1.7504E+12	0.0000E+00
Aerosols (kg)	6.5081E-08	0.0000E+00

EAB Doses:

Time (h) = 2.2000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.7101E-02	1.3009E-02	1.7829E-02
Accumulated dose (rem)	1.2978E-01	4.5088E-01	1.5122E-01

LPZ Doses:

Time (h) = 2.2000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.6578E-03	5.0648E-03	6.9409E-03
Accumulated dose (rem)	5.0526E-02	1.7553E-01	5.8874E-02

CR Doses:

Time (h) = 2.2000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.1881E-05	4.1617E-01	1.8463E-02
Accumulated dose (rem)	3.5538E-03	1.8741E+01	8.3029E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.2000	Ci	kg	Atoms	Decay
Co-58	5.4400E-02	1.7108E-09	1.7763E+16	4.3193E+15
Co-60	6.5166E-02	5.7649E-08	5.7862E+17	5.1722E+15
Kr-85	1.3590E+06	3.4638E+00	2.4541E+25	1.8697E+20
Kr-85m	1.5937E+07	1.9366E-03	1.3720E+22	2.4184E+21
Kr-87	1.3551E+07	4.7841E-04	3.3115E+21	2.6898E+21
Kr-88	3.5640E+07	2.8422E-03	1.9450E+22	5.7352E+21
Rb-86	1.8739E+00	2.3030E-08	1.6127E+17	3.1339E+17
Sr-89	9.2188E+01	3.1732E-06	2.1471E+19	7.3207E+18
Sr-90	1.2136E+01	8.8970E-05	5.9532E+20	9.6324E+17
Sr-91	9.7784E+01	2.6975E-08	1.7851E+17	8.3119E+18
Sr-92	6.8162E+01	5.4229E-09	3.5497E+16	6.9097E+18
Y-90	1.6470E-01	3.0272E-10	2.0256E+15	1.0073E+16
Y-91	1.1763E+00	4.7964E-08	3.1741E+17	9.2919E+16
Y-92	5.1886E+00	5.3922E-10	3.5297E+15	1.1017E+17
Y-93	1.1366E+00	3.4069E-10	2.2061E+15	9.6222E+16
Zr-95	1.4287E+00	6.6505E-08	4.2158E+17	1.1344E+17
Zr-97	1.2651E+00	6.6177E-10	4.1085E+15	1.0434E+17
Nb-95	1.4330E+00	3.6645E-08	2.3230E+17	1.1373E+17
Mo-99	1.7886E+01	3.7292E-08	2.2685E+17	1.4336E+18
Tc-99m	1.6123E+01	3.0663E-09	1.8652E+16	1.2766E+18
Ru-103	1.5857E+01	4.9132E-07	2.8726E+18	1.2594E+18
Ru-105	8.0325E+00	1.1950E-09	6.8535E+15	7.3917E+17
Ru-106	6.9073E+00	2.0646E-06	1.1730E+19	5.4827E+17
Rh-105	1.0568E+01	1.2521E-08	7.1813E+16	8.4092E+17
Sb-127	1.7934E+01	6.7157E-08	3.1845E+17	1.4334E+18
Sb-129	3.9581E+01	7.0386E-09	3.2859E+16	3.6576E+18
Te-127	1.8000E+01	6.8206E-09	3.2342E+16	1.4259E+18
Te-127m	3.0911E+00	3.2771E-07	1.5539E+18	2.4533E+17
Te-129	4.5402E+01	2.1680E-09	1.0121E+16	3.8253E+18
Te-129m	1.0185E+01	3.3809E-07	1.5783E+18	8.0841E+17

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Te-131m                3.6418E+01  4.5671E-08  2.0995E+17  2.9536E+18
Te-132                 2.6961E+02  8.8806E-07  4.0515E+18  2.1576E+19
I-131                  3.2151E+04  2.5933E-04  1.1922E+21  1.4835E+20
I-132                  4.2984E+04  4.1643E-06  1.8998E+19  2.1110E+20
I-133                  6.2609E+04  5.5269E-05  2.5025E+20  3.0129E+20
I-134                  1.3489E+04  5.0564E-07  2.2724E+18  2.0531E+20
I-135                  5.0551E+04  1.4395E-05  6.4212E+19  2.6905E+20
Xe-133                 1.4459E+08  7.7248E-01  3.4977E+24  1.9941E+22
Xe-135                 5.9236E+07  2.3196E-02  1.0347E+23  8.3306E+21
Cs-134                 2.0567E+02  1.5896E-04  7.1440E+20  3.4321E+19
Cs-136                 6.1238E+01  8.3555E-07  3.6998E+18  1.0251E+19
Cs-137                 1.6552E+02  1.9029E-03  8.3647E+21  2.7619E+19
Ba-139                 4.8529E+01  2.9668E-09  1.2854E+16  6.3017E+18
Ba-140                 1.4174E+02  1.9360E-06  8.3279E+18  1.1273E+19
La-140                 2.2220E+00  3.9976E-09  1.7196E+16  1.2075E+17
La-141                 9.0836E-01  1.6062E-10  6.8600E+14  8.5237E+16
La-142                 4.8736E-01  3.4046E-11  1.4439E+14  5.9941E+16
Ce-141                 3.3601E+00  1.1793E-07  5.0367E+17  2.6677E+17
Ce-143                 3.1011E+00  4.6697E-09  1.9665E+16  2.5101E+17
Ce-144                 2.6987E+00  8.4612E-07  3.5385E+18  2.1421E+17
Pr-143                 1.2633E+00  1.8760E-08  7.9005E+16  1.0017E+17
Nd-147                 5.2400E-01  6.4773E-09  2.6535E+16  4.1692E+16
Np-239                 3.7228E+01  1.6047E-07  4.0434E+17  2.9888E+18
Pu-238                 1.0897E-02  6.3653E-07  1.6106E+18  8.6489E+14
Pu-239                 9.5465E-04  1.5359E-05  3.8700E+19  7.5760E+13
Pu-240                 1.7877E-03  7.8452E-06  1.9685E+19  1.4189E+14
Pu-241                 3.8531E-01  3.7404E-06  9.3465E+18  3.0582E+16
Am-241                 2.5818E-04  7.5224E-08  1.8797E+17  2.0489E+13
Cm-242                 6.5499E-02  1.9762E-08  4.9179E+16  5.1994E+15
Cm-244                 4.3302E-03  5.3524E-08  1.3210E+17  3.4369E+14

DW Transport Group Inventory:
Time (h) =   2.2000    Atmosphere     Sump
Noble gases (atoms)    2.8178E+25  0.0000E+00
Elemental I (atoms)    2.2092E+18  4.8590E+22
Organic I (atoms)      1.4824E+21  0.0000E+00
Aerosols (kg)          2.1997E-03  4.8968E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          1.0431E-05
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2918E-05
Total I (Ci)                                    2.0178E+05

DW to  RB Transport Group Inventory:
Time (h) =   2.2000  Leakage Transport

Noble gases (atoms)      1.7630E+22
Elemental I (atoms)      1.5872E+18
Organic I (atoms)        1.0480E+18
Aerosols (kg)            1.6727E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   2.2000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  8.5264E+21
Elemental I (atoms)    0.0000E+00  8.3565E+17
Organic I (atoms)      0.0000E+00  5.1207E+17
Aerosols (kg)          0.0000E+00  8.8083E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   2.2000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  8.5264E+21
Elemental I (atoms)    0.0000E+00  8.3565E+17
Organic I (atoms)      0.0000E+00  5.1207E+17
Aerosols (kg)          0.0000E+00  8.8083E-04

RB Compartment Nuclide Inventory:

Time (h) =   2.2000       Ci           kg         Atoms      Decay
Co-58                  1.5309E-02  4.8144E-10  4.9988E+15  2.1640E+12
Co-60                  1.8338E-02  1.6223E-08  1.6283E+17  2.5917E+12
Kr-85                  6.9938E+02  1.7826E-03  1.2630E+22  6.3943E+16
Kr-85m                 8.2018E+03  9.9663E-07  7.0610E+18  8.0902E+17
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Kr-87	6.9740E+03	2.4621E-07	1.7042E+18	8.4628E+17
Kr-88	1.8342E+04	1.4627E-06	1.0010E+19	1.8932E+18
Rb-86	9.2932E-01	1.1421E-08	7.9977E+16	2.1974E+14
Sr-89	2.5942E+01	8.9296E-07	6.0421E+18	3.6676E+15
Sr-90	3.4152E+00	2.5037E-05	1.6753E+20	4.8266E+14
Sr-91	2.7517E+01	7.5910E-09	5.0235E+16	4.0631E+15
Sr-92	1.9181E+01	1.5260E-09	9.9892E+15	3.1730E+15
Y-90	6.8897E-02	1.2663E-10	8.4734E+14	7.5760E+12
Y-91	3.3471E-01	1.3648E-08	9.0321E+16	4.6973E+13
Y-92	3.8946E+00	4.0475E-10	2.6494E+15	3.5298E+14
Y-93	3.1986E-01	9.5872E-11	6.2081E+14	4.7106E+13
Zr-95	4.0205E-01	1.8715E-08	1.1864E+17	5.6836E+13
Zr-97	3.5601E-01	1.8623E-10	1.1562E+15	5.1563E+13
Nb-95	4.0325E-01	1.0312E-08	6.5371E+16	5.6987E+13
Mo-99	5.0333E+00	1.0494E-08	6.3837E+16	7.1580E+14
Tc-99m	4.5372E+00	8.6288E-10	5.2489E+15	6.3865E+14
Ru-103	4.4622E+00	1.3826E-07	8.0838E+17	6.3091E+14
Ru-105	2.2604E+00	3.3627E-10	1.9286E+15	3.5123E+14
Ru-106	1.9438E+00	5.8100E-07	3.3008E+18	2.7472E+14
Rh-105	2.9740E+00	3.5235E-09	2.0209E+16	4.2092E+14
Sb-127	5.0469E+00	1.8899E-08	8.9614E+16	7.1645E+14
Sb-129	1.1138E+01	1.9807E-09	9.2467E+15	1.7354E+15
Te-127	5.0654E+00	1.9194E-09	9.1013E+15	7.1382E+14
Te-127m	8.6987E-01	9.2220E-08	4.3729E+17	1.2293E+14
Te-129	1.2777E+01	6.1008E-10	2.8481E+15	1.8581E+15
Te-129m	2.8662E+00	9.5143E-08	4.4416E+17	4.0507E+14
Te-131m	1.0248E+01	1.2852E-08	5.9082E+16	1.4685E+15
Te-132	7.5870E+01	2.4991E-07	1.1401E+18	1.0779E+16
I-131	4.5086E+02	3.6367E-06	1.6718E+19	9.9305E+16
I-132	4.6832E+02	4.5370E-08	2.0699E+17	1.1675E+17
I-133	8.7843E+02	7.7544E-07	3.5112E+18	1.9872E+17
I-134	1.8925E+02	7.0943E-09	3.1883E+16	9.2310E+16
I-135	7.0926E+02	2.0196E-07	9.0092E+17	1.7120E+17
Xe-133	7.4349E+04	3.9720E-04	1.7985E+21	6.8107E+18
Xe-135	2.9849E+04	1.1689E-05	5.2141E+19	2.7807E+18
Cs-134	1.0200E+02	7.8835E-05	3.5430E+20	2.4085E+16
Cs-136	3.0370E+01	4.1438E-07	1.8349E+18	7.1854E+15
Cs-137	8.2086E+01	9.4372E-04	4.1483E+21	1.9382E+16
Ba-139	1.3656E+01	8.3490E-10	3.6172E+15	2.6572E+15
Ba-140	3.9886E+01	5.4482E-07	2.3436E+18	5.6445E+15
La-140	1.0426E+00	1.8758E-09	8.0687E+15	1.0740E+14
La-141	2.5562E-01	4.5199E-11	1.9305E+14	4.0222E+13
La-142	1.3715E-01	9.5807E-12	4.0631E+13	2.5746E+13
Ce-141	9.4533E-01	3.3177E-08	1.4170E+17	1.3364E+14
Ce-143	8.7266E-01	1.3141E-09	5.5340E+15	1.2489E+14
Ce-144	7.5944E-01	2.3811E-07	9.9577E+17	1.0734E+14
Pr-143	3.5620E-01	5.2897E-09	2.2277E+16	5.0270E+13
Nd-147	1.4746E-01	1.8228E-09	7.4673E+15	2.0872E+13
Np-239	1.0476E+01	4.5158E-08	1.1379E+17	1.4914E+15
Pu-238	3.0666E-03	1.7912E-07	4.5324E+17	4.3338E+11
Pu-239	2.6865E-04	4.3221E-06	1.0890E+19	3.7964E+10
Pu-240	5.0307E-04	2.2077E-06	5.5397E+18	7.1096E+10
Pu-241	1.0843E-01	1.0526E-06	2.6302E+18	1.5324E+13
Am-241	7.2662E-05	2.1171E-08	5.2902E+16	1.0268E+10
Cm-242	1.8432E-02	5.5613E-09	1.3839E+16	2.6052E+12
Cm-244	1.2186E-03	1.5062E-08	3.7175E+16	1.7222E+11

RB Transport Group Inventory:

Time (h) = 2.2000	Atmosphere	Sump	
Noble gases (atoms)	1.4499E+22	0.0000E+00	
Elemental I (atoms)	9.9755E+17	0.0000E+00	
Organic I (atoms)	8.3182E+17	0.0000E+00	
Aerosols (kg)	1.0631E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.8494E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2791E-08
Total I (Ci)			2.6961E+03

DW to RB Transport Group Inventory:

Time (h) = 2.2000	Leakage Transport
Noble gases (atoms)	1.7630E+22
Elemental I (atoms)	1.5872E+18

Organic I (atoms) 1.0480E+18
Aerosols (kg) 1.6727E-03

RB to Environment Transport Group Inventory:

Time (h) = 2.2000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.1186E+21
Elemental I (atoms)	5.2866E+17	3.7098E+16
Organic I (atoms)	1.9806E+17	6.7674E+15
Aerosols (kg)	5.7595E-04	4.1381E-05

Environment Integral Nuclide Release:

Time (h) = 2.2000	Ci	kg	Atoms	Bq
Co-58	1.5814E-04	4.9732E-12	5.1637E+13	5.8511E+06
Co-60	1.8939E-04	1.6755E-10	1.6816E+15	7.0075E+06
Kr-85	1.5036E+02	3.8323E-04	2.7152E+21	5.5632E+12
Kr-85m	1.8876E+03	2.2937E-07	1.6251E+18	6.9842E+13
Kr-87	1.9373E+03	6.8395E-08	4.7343E+17	7.1682E+13
Kr-88	4.3978E+03	3.5072E-07	2.4001E+18	1.6272E+14
Rb-86	3.7194E-02	4.5711E-10	3.2009E+15	1.3762E+09
Sr-89	2.6801E-01	9.2250E-09	6.2420E+16	9.9162E+09
Sr-90	3.5271E-02	2.5857E-07	1.7302E+18	1.3050E+09
Sr-91	2.9581E-01	8.1602E-11	5.4002E+14	1.0945E+10
Sr-92	2.2887E-01	1.8209E-11	1.1919E+14	8.4684E+09
Y-90	5.9573E-04	1.0950E-12	7.3267E+12	2.2042E+07
Y-91	3.4393E-03	1.4024E-10	9.2810E+14	1.2726E+08
Y-92	3.0505E-02	3.1703E-12	2.0752E+13	1.1287E+09
Y-93	3.4302E-03	1.0281E-12	6.6576E+12	1.2692E+08
Zr-95	4.1533E-03	1.9333E-10	1.2255E+15	1.5367E+08
Zr-97	3.7601E-03	1.9669E-12	1.2211E+13	1.3912E+08
Nb-95	4.1646E-03	1.0650E-10	6.7513E+14	1.5409E+08
Mo-99	5.2280E-02	1.0900E-10	6.6306E+14	1.9343E+09
Tc-99m	4.6902E-02	8.9198E-12	5.4259E+13	1.7354E+09
Ru-103	4.6103E-02	1.4285E-09	8.3520E+15	1.7058E+09
Ru-105	2.5462E-02	3.7879E-12	2.1725E+13	9.4211E+08
Ru-106	2.0076E-02	6.0006E-09	3.4091E+16	7.4279E+08
Rh-105	3.0776E-02	3.6462E-11	2.0913E+14	1.1387E+09
Sb-127	5.2335E-02	1.9597E-10	9.2928E+14	1.9364E+09
Sb-129	1.2578E-01	2.2367E-11	1.0442E+14	4.6538E+09
Te-127	5.2333E-02	1.9830E-11	9.4029E+13	1.9363E+09
Te-127m	8.9836E-03	9.5240E-10	4.5161E+15	3.3239E+08
Te-129	1.3831E-01	6.6043E-12	3.0831E+13	5.1175E+09
Te-129m	2.9602E-02	9.8264E-10	4.5873E+15	1.0953E+09
Te-131m	1.0718E-01	1.3442E-10	6.1791E+14	3.9658E+09
Te-132	7.8734E-01	2.5934E-09	1.1832E+16	2.9132E+10
I-131	1.5927E+01	1.2847E-07	5.9058E+17	5.8930E+11
I-132	2.0416E+01	1.9779E-09	9.0238E+15	7.5541E+11
I-133	3.2403E+01	2.8604E-08	1.2952E+17	1.1989E+12
I-134	2.3294E+01	8.7321E-10	3.9243E+15	8.6189E+11
I-135	2.9053E+01	8.2728E-09	3.6904E+16	1.0750E+12
Xe-133	1.6009E+04	8.5528E-05	3.8726E+20	5.9234E+14
Xe-135	6.5037E+03	2.5467E-06	1.1361E+19	2.4064E+14
Cs-134	4.0732E+00	3.1482E-06	1.4148E+19	1.5071E+11
Cs-136	1.2167E+00	1.6601E-08	7.3508E+16	4.5017E+10
Cs-137	3.2778E+00	3.7684E-05	1.6565E+20	1.2128E+11
Ba-139	1.8936E-01	1.1577E-11	5.0157E+13	7.0065E+09
Ba-140	4.1243E-01	5.6336E-09	2.4233E+16	1.5260E+10
La-140	8.6295E-03	1.5525E-11	6.6783E+13	3.1929E+08
La-141	2.9129E-03	5.1507E-13	2.1999E+12	1.0778E+08
La-142	1.8395E-03	1.2850E-13	5.4495E+11	6.8060E+07
Ce-141	9.7654E-03	3.4272E-10	1.4638E+15	3.6132E+08
Ce-143	9.1163E-03	1.3728E-11	5.7811E+13	3.3730E+08
Ce-144	7.8436E-03	2.4592E-09	1.0285E+16	2.9021E+08
Pr-143	3.6752E-03	5.4578E-11	2.2984E+14	1.3598E+08
Nd-147	1.5251E-03	1.8852E-11	7.7229E+13	5.6428E+07
Np-239	1.0892E-01	4.6950E-10	1.1830E+15	4.0300E+09
Pu-238	3.1670E-05	1.8499E-09	4.6809E+15	1.1718E+06
Pu-239	2.7743E-06	4.4634E-08	1.1246E+17	1.0265E+05
Pu-240	5.1955E-06	2.2800E-08	5.7212E+16	1.9223E+05
Pu-241	1.1198E-03	1.0871E-08	2.7164E+16	4.1433E+07

Am-241	7.5035E-07	2.1862E-10	5.4629E+14	2.7763E+04
Cm-242	1.9038E-04	5.7441E-11	1.4294E+14	7.0439E+06
Cm-244	1.2585E-05	1.5556E-10	3.8393E+14	4.6564E+05

Environment Transport Group Inventory:

Time (h) = 2.2000	Total Release	Release Rate/s	
Noble gases (atoms)	3.1183E+21	3.9372E+17	
Elemental I (atoms)	3.7071E+16	4.6806E+12	
Organic I (atoms)	6.7578E+15	8.5325E+11	
Aerosols (kg)	4.1379E-05	5.2246E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.2307E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.8139E+01
Total I (Ci)			1.2109E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.2000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.1186E+21
Elemental I (atoms)	5.2866E+17	3.7098E+16
Organic I (atoms)	1.9806E+17	6.7674E+15
Aerosols (kg)	5.7595E-04	4.1381E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.2000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2980E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2525E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.2000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2220E+15
Elemental I (atoms)	5.8255E+09	1.8017E+08
Organic I (atoms)	2.3200E+09	7.1754E+07
Aerosols (kg)	6.3259E-12	1.9565E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.2000	Pathway Filtered	Transported
Noble gases (atoms)	1.0475E+16	0.0000E+00
Elemental I (atoms)	5.7699E+13	0.0000E+00
Organic I (atoms)	1.7848E+12	0.0000E+00
Aerosols (kg)	6.6390E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.2000	Ci	kg	Atoms	Decay
Co-58	1.9604E-11	6.1651E-19	6.4012E+06	1.8211E+03
Co-60	2.3483E-11	2.0774E-17	2.0851E+08	2.1811E+03
Kr-85	1.7945E-04	4.5739E-10	3.2406E+15	7.5821E+10
Kr-85m	2.1044E-03	2.5572E-13	1.8117E+12	1.0717E+12
Kr-87	1.7894E-03	6.3173E-14	4.3728E+11	1.5063E+12
Kr-88	4.7061E-03	3.7531E-13	2.5684E+12	2.6785E+12
Rb-86	1.4754E-05	1.8132E-13	1.2697E+12	8.9337E+09
Sr-89	3.3221E-08	1.1435E-15	7.7373E+09	3.0863E+06
Sr-90	4.3734E-09	3.2061E-14	2.1453E+11	4.0619E+05
Sr-91	3.5237E-08	9.7207E-18	6.4329E+07	3.3865E+06
Sr-92	2.4563E-08	1.9542E-18	1.2792E+07	2.5787E+06
Y-90	9.6512E-11	1.7739E-19	1.1870E+06	7.4158E+03
Y-91	4.3000E-10	1.7534E-17	1.1603E+08	3.9701E+04
Y-92	5.8930E-09	6.1243E-19	4.0089E+06	4.1450E+05
Y-93	4.0960E-10	1.2277E-19	7.9498E+05	3.9284E+04
Zr-95	5.1485E-10	2.3966E-17	1.5192E+08	4.7828E+04
Zr-97	4.5589E-10	2.3848E-19	1.4806E+06	4.3159E+04

Nb-95	5.1638E-10	1.3206E-17	8.3711E+07	4.7959E+04
Mo-99	6.4454E-09	1.3439E-17	8.1747E+07	6.0156E+05
Tc-99m	5.8102E-09	1.1050E-18	6.7215E+06	5.3721E+05
Ru-103	5.7142E-09	1.7705E-16	1.0352E+09	5.3090E+05
Ru-105	2.8946E-09	4.3061E-19	2.4697E+06	2.8945E+05
Ru-106	2.4891E-09	7.4400E-16	4.2269E+09	2.3119E+05
Rh-105	3.8084E-09	4.5121E-18	2.5878E+07	3.5408E+05
Sb-127	6.4628E-09	2.4201E-17	1.1476E+08	6.0235E+05
Sb-129	1.4263E-08	2.5364E-18	1.1841E+07	1.4293E+06
Te-127	6.4866E-09	2.4579E-18	1.1655E+07	6.0057E+05
Te-127m	1.1139E-09	1.1809E-16	5.5998E+08	1.0346E+05
Te-129	1.6361E-08	7.8125E-19	3.6471E+06	1.5455E+06
Te-129m	3.6703E-09	1.2184E-16	5.6877E+08	3.4089E+05
Te-131m	1.3124E-08	1.6458E-17	7.5658E+07	1.2321E+06
Te-132	9.7156E-08	3.2002E-16	1.4600E+09	9.0608E+06
I-131	6.0312E-03	4.8649E-11	2.2364E+14	3.6612E+12
I-132	4.6881E-03	4.5418E-13	2.0721E+12	4.1574E+12
I-133	1.1757E-02	1.0378E-11	4.6993E+13	7.4043E+12
I-134	2.5329E-03	9.4949E-14	4.2671E+11	4.4049E+12
I-135	9.4926E-03	2.7030E-12	1.2058E+13	6.5384E+12
Xe-133	1.9149E-02	1.0230E-10	4.6320E+14	8.1097E+12
Xe-135	8.3646E-03	3.2755E-12	1.4611E+13	3.4999E+12
Cs-134	1.6194E-03	1.2516E-09	5.6249E+15	9.7873E+11
Cs-136	4.8216E-04	6.5787E-12	2.9131E+13	2.9219E+11
Cs-137	1.3032E-03	1.4983E-08	6.5859E+16	7.8762E+11
Ba-139	1.7488E-08	1.0691E-18	4.6320E+06	2.0824E+06
Ba-140	5.1076E-08	6.9767E-16	3.0011E+09	4.7488E+06
La-140	1.4884E-09	2.6777E-18	1.1518E+07	1.0965E+05
La-141	3.2733E-10	5.7880E-20	2.4721E+05	3.3054E+04
La-142	1.7563E-10	1.2269E-20	5.2031E+04	2.0340E+04
Ce-141	1.2105E-09	4.2482E-17	1.8144E+08	1.1245E+05
Ce-143	1.1175E-09	1.6828E-18	7.0866E+06	1.0481E+05
Ce-144	9.7251E-10	3.0491E-16	1.2751E+09	9.0329E+04
Pr-143	4.5640E-10	6.7777E-18	2.8543E+07	4.2338E+04
Nd-147	1.8883E-10	2.3341E-18	9.5623E+06	1.7559E+04
Np-239	1.3415E-08	5.7828E-17	1.4571E+08	1.2531E+06
Pu-238	3.9269E-12	2.2938E-16	5.8040E+08	3.6472E+02
Pu-239	3.4402E-13	5.5347E-15	1.3946E+10	3.1949E+01
Pu-240	6.4420E-13	2.8271E-15	7.0939E+09	5.9832E+01
Pu-241	1.3885E-10	1.3479E-15	3.3681E+09	1.2896E+04
Am-241	9.3051E-14	2.7111E-17	6.7746E+07	8.6414E+00
Cm-242	2.3603E-11	7.1216E-18	1.7722E+07	2.1924E+03
Cm-244	1.5604E-12	1.9288E-17	4.7604E+07	1.4493E+02

CR Transport Group Inventory:

Time (h) = 2.2000	Atmosphere	Sump	
Noble gases (atoms)	3.7232E+15	0.0000E+00	
Elemental I (atoms)	1.3832E+13	0.0000E+00	
Organic I (atoms)	4.2852E+11	0.0000E+00	
Aerosols (kg)	1.6300E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8998E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5579E-12
Total I (Ci)			3.4502E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.2000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2980E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2525E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.2000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2220E+15
Elemental I (atoms)	5.8255E+09	1.8017E+08
Organic I (atoms)	2.3200E+09	7.1754E+07
Aerosols (kg)	6.3259E-12	1.9565E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.2000	Pathway Filtered	Transported
Noble gases (atoms)	1.0475E+16	0.0000E+00
Elemental I (atoms)	5.7699E+13	0.0000E+00
Organic I (atoms)	1.7848E+12	0.0000E+00
Aerosols (kg)	6.6390E-08	0.0000E+00

EAB Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.8232E-02	1.2619E-02	1.8936E-02
Accumulated dose (rem)	1.4801E-01	4.6350E-01	1.7016E-01

LPZ Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	7.0978E-03	4.9127E-03	7.3721E-03
Accumulated dose (rem)	5.7623E-02	1.8044E-01	6.6246E-02

CR Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.6959E-05	3.8466E-01	1.7069E-02
Accumulated dose (rem)	3.6108E-03	1.9126E+01	8.4735E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	2.7080E-03	8.5163E-11	8.8424E+14	4.3194E+15
Co-60	3.2440E-03	2.8698E-09	2.8804E+16	5.1723E+15
Kr-85	1.3588E+06	3.4635E+00	2.4538E+25	2.0507E+20
Kr-85m	1.5691E+07	1.9066E-03	1.3508E+22	2.6290E+21
Kr-87	1.2831E+07	4.5298E-04	3.1355E+21	2.8655E+21
Kr-88	3.4777E+07	2.7734E-03	1.8980E+22	6.2042E+21
Rb-86	9.3269E-02	1.1463E-09	8.0267E+15	3.1339E+17
Sr-89	4.5889E+00	1.5795E-07	1.0688E+18	7.3208E+18
Sr-90	6.0415E-01	4.4290E-06	2.9636E+19	9.6325E+17
Sr-91	4.8324E+00	1.3331E-09	8.8219E+15	8.3120E+18
Sr-92	3.3075E+00	2.6314E-10	1.7225E+15	6.9097E+18
Y-90	8.8443E-03	1.6256E-11	1.0877E+14	1.0073E+16
Y-91	5.8653E-02	2.3917E-09	1.5827E+16	9.2919E+16
Y-92	3.1888E-01	3.3140E-11	2.1693E+14	1.1018E+17
Y-93	5.6196E-02	1.6844E-11	1.0907E+14	9.6223E+16
Zr-95	7.1120E-02	3.3105E-09	2.0986E+16	1.1344E+17
Zr-97	6.2720E-02	3.2809E-11	2.0369E+14	1.0434E+17
Nb-95	7.1334E-02	1.8242E-09	1.1564E+16	1.1373E+17
Mo-99	8.8945E-01	1.8545E-09	1.1281E+16	1.4336E+18
Tc-99m	8.0246E-01	1.5261E-10	9.2832E+14	1.2766E+18
Ru-103	7.8931E-01	2.4457E-08	1.4299E+17	1.2594E+18
Ru-105	3.9367E-01	5.8565E-11	3.3589E+14	7.3918E+17
Ru-106	3.4385E-01	1.0278E-07	5.8391E+17	5.4827E+17
Rh-105	5.2585E-01	6.2301E-10	3.5732E+15	8.4093E+17
Sb-127	8.9212E-01	3.3406E-09	1.5841E+16	1.4335E+18
Sb-129	1.9390E+00	3.4481E-10	1.6097E+15	3.6576E+18
Te-127	8.9599E-01	3.3951E-10	1.6099E+15	1.4259E+18
Te-127m	1.5388E-01	1.6314E-08	7.7357E+16	2.4534E+17
Te-129	2.2387E+00	1.0690E-10	4.9904E+14	3.8253E+18
Te-129m	5.0702E-01	1.6831E-08	7.8570E+16	8.0842E+17
Te-131m	1.8088E+00	2.2683E-09	1.0428E+16	2.9537E+18
Te-132	1.3409E+01	4.4169E-08	2.0151E+17	2.1577E+19
I-131	3.1227E+04	2.5188E-04	1.1579E+21	1.4877E+20
I-132	4.0525E+04	3.9260E-06	1.7911E+19	2.1165E+20
I-133	6.0630E+04	5.3522E-05	2.4234E+20	3.0209E+20
I-134	1.2110E+04	4.5394E-07	2.0401E+18	2.0548E+20
I-135	4.8604E+04	1.3840E-05	6.1738E+19	2.6970E+20
Xe-133	1.4450E+08	7.7198E-01	3.4955E+24	2.1867E+22
Xe-135	5.8780E+07	2.3017E-02	1.0268E+23	9.1166E+21
Cs-134	1.0239E+01	7.9133E-06	3.5564E+19	3.4321E+19
Cs-136	3.0478E+00	4.1585E-08	1.8414E+17	1.0251E+19
Cs-137	8.2397E+00	9.4729E-05	4.1640E+20	2.7619E+19

Ba-139	2.2973E+00	1.4045E-10	6.0849E+14	6.3018E+18
Ba-140	7.0541E+00	9.6356E-08	4.1448E+17	1.1273E+19
La-140	1.2256E-01	2.2051E-10	9.4852E+14	1.2075E+17
La-141	4.4428E-02	7.8560E-12	3.3553E+13	8.5237E+16
La-142	2.3195E-02	1.6203E-12	6.8716E+12	5.9941E+16
Ce-141	1.6726E-01	5.8702E-09	2.5072E+16	2.6677E+17
Ce-143	1.5405E-01	2.3197E-10	9.7691E+14	2.5101E+17
Ce-144	1.3434E-01	4.2121E-08	1.7615E+17	2.1422E+17
Pr-143	6.2908E-02	9.3420E-10	3.9342E+15	1.0017E+17
Nd-147	2.6078E-02	3.2236E-10	1.3206E+15	4.1692E+16
Np-239	1.8510E+00	7.9787E-09	2.0104E+16	2.9888E+18
Pu-238	5.4248E-04	3.1687E-08	8.0179E+16	8.6490E+14
Pu-239	4.7524E-05	7.6458E-07	1.9265E+18	7.5761E+13
Pu-240	8.8992E-05	3.9054E-07	9.7996E+17	1.4189E+14
Pu-241	1.9181E-02	1.8620E-07	4.6528E+17	3.0582E+16
Am-241	1.2853E-05	3.7449E-09	9.3577E+15	2.0489E+13
Cm-242	3.2605E-03	9.8378E-10	2.4481E+15	5.1995E+15
Cm-244	2.1556E-04	2.6645E-09	6.5762E+15	3.4369E+14

DW Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	2.8172E+25	0.0000E+00	
Elemental I (atoms)	1.0978E+17	4.8591E+22	
Organic I (atoms)	1.4797E+21	0.0000E+00	
Aerosols (kg)	1.0950E-04	4.8969E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0119E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2512E-05
Total I (Ci)			1.9310E+05

DW to RB Transport Group Inventory:

Time (h) = 2.3000 Leakage Transport

Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	1.1406E+18
Aerosols (kg)	1.6727E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.3000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3566E+17
Organic I (atoms)	0.0000E+00	5.4042E+17
Aerosols (kg)	0.0000E+00	8.8083E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.3000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3566E+17
Organic I (atoms)	0.0000E+00	5.4042E+17
Aerosols (kg)	0.0000E+00	8.8083E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	1.4806E-02	4.6563E-10	4.8346E+15	2.3613E+12
Co-60	1.7737E-02	1.5691E-08	1.5749E+17	2.8279E+12
Kr-85	7.5993E+02	1.9369E-03	1.3723E+22	7.4065E+16
Kr-85m	8.7749E+03	1.0663E-06	7.5544E+18	9.2681E+17
Kr-87	7.1757E+03	2.5333E-07	1.7535E+18	9.4451E+17
Kr-88	1.9449E+04	1.5510E-06	1.0614E+19	2.1555E+18
Rb-86	8.9867E-01	1.1045E-08	7.7340E+16	2.3171E+14
Sr-89	2.5090E+01	8.6362E-07	5.8436E+18	4.0018E+15
Sr-90	3.3032E+00	2.4216E-05	1.6203E+20	5.2666E+14
Sr-91	2.6421E+01	7.2886E-09	4.8234E+16	4.4164E+15
Sr-92	1.8084E+01	1.4387E-09	9.4176E+15	3.4170E+15
Y-90	7.0141E-02	1.2892E-10	8.6264E+14	8.4631E+12
Y-91	3.2427E-01	1.3223E-08	8.7503E+16	5.1285E+13
Y-92	4.0523E+00	4.2114E-10	2.7567E+15	4.0266E+14
Y-93	3.0725E-01	9.2093E-11	5.9634E+14	5.1213E+13
Zr-95	3.8885E-01	1.8100E-08	1.1474E+17	6.2015E+13

Zr-97	3.4292E-01	1.7938E-10	1.1137E+15	5.6140E+13
Nb-95	3.9002E-01	9.9741E-09	6.3227E+16	6.2182E+13
Mo-99	4.8631E+00	1.0140E-08	6.1679E+16	7.8061E+14
Tc-99m	4.3875E+00	8.3440E-10	5.0756E+15	6.9677E+14
Ru-103	4.3156E+00	1.3372E-07	7.8181E+17	6.8839E+14
Ru-105	2.1524E+00	3.2020E-10	1.8365E+15	3.8013E+14
Ru-106	1.8800E+00	5.6194E-07	3.1925E+18	2.9976E+14
Rh-105	2.8751E+00	3.4063E-09	1.9537E+16	4.5920E+14
Sb-127	4.8777E+00	1.8265E-08	8.6610E+16	7.8145E+14
Sb-129	1.0602E+01	1.8853E-09	8.8011E+15	1.8777E+15
Te-127	4.8989E+00	1.8563E-09	8.8021E+15	7.7884E+14
Te-127m	8.4134E-01	8.9195E-08	4.2295E+17	1.3414E+14
Te-129	1.2240E+01	5.8447E-10	2.7285E+15	2.0179E+15
Te-129m	2.7722E+00	9.2021E-08	4.2959E+17	4.4200E+14
Te-131m	9.8894E+00	1.2402E-08	5.7013E+16	1.6004E+15
Te-132	7.3317E+01	2.4150E-07	1.1018E+18	1.1756E+16
I-131	4.3782E+02	3.5315E-06	1.6235E+19	1.0514E+17
I-132	4.4420E+02	4.3034E-08	1.9633E+17	1.2273E+17
I-133	8.5049E+02	7.5078E-07	3.3995E+18	2.1007E+17
I-134	1.6987E+02	6.3677E-09	2.8617E+16	9.4665E+16
I-135	6.8180E+02	1.9414E-07	8.6604E+17	1.8033E+17
Xe-133	8.0749E+04	4.3139E-04	1.9533E+21	7.8866E+18
Xe-135	3.2267E+04	1.2635E-05	5.6363E+19	3.2121E+18
Cs-134	9.8651E+01	7.6247E-05	3.4267E+20	2.5399E+16
Cs-136	2.9367E+01	4.0069E-07	1.7743E+18	7.5766E+15
Cs-137	7.9392E+01	9.1274E-04	4.0122E+21	2.0440E+16
Ba-139	1.2561E+01	7.6791E-10	3.3269E+15	2.8288E+15
Ba-140	3.8569E+01	5.2683E-07	2.2662E+18	6.1583E+15
La-140	1.0730E+00	1.9305E-09	8.3042E+15	1.2082E+14
La-141	2.4291E-01	4.2953E-11	1.8345E+14	4.3487E+13
La-142	1.2682E-01	8.8591E-12	3.7571E+13	2.7473E+13
Ce-141	9.1427E-01	3.2087E-08	1.3704E+17	1.4581E+14
Ce-143	8.4227E-01	1.2683E-09	5.3413E+15	1.3612E+14
Ce-144	7.3452E-01	2.3030E-07	9.6310E+17	1.1712E+14
Pr-143	3.4463E-01	5.1178E-09	2.1553E+16	5.4859E+13
Nd-147	1.4258E-01	1.7625E-09	7.2205E+15	2.2772E+13
Np-239	1.0120E+01	4.3624E-08	1.0992E+17	1.6263E+15
Pu-238	2.9660E-03	1.7325E-07	4.3838E+17	4.7289E+11
Pu-239	2.5984E-04	4.1804E-06	1.0533E+19	4.1425E+10
Pu-240	4.8657E-04	2.1353E-06	5.3580E+18	7.7577E+10
Pu-241	1.0487E-01	1.0181E-06	2.5439E+18	1.6721E+13
Am-241	7.0281E-05	2.0477E-08	5.1169E+16	1.1204E+10
Cm-242	1.7827E-02	5.3788E-09	1.3385E+16	2.8426E+12
Cm-244	1.1786E-03	1.4568E-08	3.5956E+16	1.8792E+11

RB Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	1.5753E+22	0.0000E+00	
Elemental I (atoms)	9.6324E+17	0.0000E+00	
Organic I (atoms)	8.9414E+17	0.0000E+00	
Aerosols (kg)	1.0282E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7939E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2076E-08
Total I (Ci)			2.5842E+03

DW to RB Transport Group Inventory:

Time (h) = 2.3000 Leakage Transport

Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	1.1406E+18
Aerosols (kg)	1.6727E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.6243E+21
Elemental I (atoms)	5.6046E+17	3.8082E+16
Organic I (atoms)	2.2607E+17	7.6334E+15
Aerosols (kg)	6.0985E-04	4.2430E-05

Environment Integral Nuclide Release:

Time (h) = 2.3000	Ci	kg	Atoms	Bq
Co-58	1.7323E-04	5.4479E-12	5.6565E+13	6.4096E+06
Co-60	2.0747E-04	1.8354E-10	1.8422E+15	7.6765E+06
Kr-85	1.7474E+02	4.4540E-04	3.1556E+21	6.4656E+12
Kr-85m	2.1692E+03	2.6359E-07	1.8675E+18	8.0262E+13
Kr-87	2.1676E+03	7.6526E-08	5.2971E+17	8.0203E+13
Kr-88	5.0220E+03	4.0050E-07	2.7408E+18	1.8581E+14
Rb-86	3.8110E-02	4.6837E-10	3.2797E+15	1.4101E+09
Sr-89	2.9358E-01	1.0105E-08	6.8378E+16	1.0863E+10
Sr-90	3.8639E-02	2.8326E-07	1.8954E+18	1.4296E+09
Sr-91	3.2274E-01	8.9033E-11	5.8919E+14	1.1941E+10
Sr-92	2.4731E-01	1.9676E-11	1.2879E+14	9.1505E+09
Y-90	6.6724E-04	1.2264E-12	8.2061E+12	2.4688E+07
Y-91	3.7699E-03	1.5372E-10	1.0173E+15	1.3949E+08
Y-92	3.4636E-02	3.5996E-12	2.3562E+13	1.2815E+09
Y-93	3.7434E-03	1.1220E-12	7.2656E+12	1.3851E+08
Zr-95	4.5497E-03	2.1178E-10	1.3425E+15	1.6834E+08
Zr-97	4.1097E-03	2.1498E-12	1.3347E+13	1.5206E+08
Nb-95	4.5622E-03	1.1667E-10	7.3959E+14	1.6880E+08
Mo-99	5.7237E-02	1.1934E-10	7.2594E+14	2.1178E+09
Tc-99m	5.1375E-02	9.7704E-12	5.9433E+13	1.9009E+09
Ru-103	5.0502E-02	1.5648E-09	9.1490E+15	1.8686E+09
Ru-105	2.7657E-02	4.1143E-12	2.3597E+13	1.0233E+09
Ru-106	2.1992E-02	6.5735E-09	3.7346E+16	8.1371E+08
Rh-105	3.3707E-02	3.9935E-11	2.2904E+14	1.2472E+09
Sb-127	5.7308E-02	2.1459E-10	1.0176E+15	2.1204E+09
Sb-129	1.3659E-01	2.4289E-11	1.1339E+14	5.0537E+09
Te-127	5.7327E-02	2.1722E-11	1.0300E+14	2.1211E+09
Te-127m	9.8413E-03	1.0433E-09	4.9473E+15	3.6413E+08
Te-129	1.5079E-01	7.2002E-12	3.3613E+13	5.5792E+09
Te-129m	3.2428E-02	1.0764E-09	5.0252E+15	1.1998E+09
Te-131m	1.1727E-01	1.4706E-10	6.7604E+14	4.3388E+09
Te-132	8.6209E-01	2.8396E-09	1.2955E+16	3.1897E+10
I-131	1.6372E+01	1.3206E-07	6.0710E+17	6.0578E+11
I-132	2.0868E+01	2.0217E-09	9.2233E+15	7.7212E+11
I-133	3.3268E+01	2.9368E-08	1.3298E+17	1.2309E+12
I-134	2.3467E+01	8.7969E-10	3.9534E+15	8.6828E+11
I-135	2.9746E+01	8.4703E-09	3.7784E+16	1.1006E+12
Xe-133	1.8601E+04	9.9373E-05	4.4995E+20	6.8823E+14
Xe-135	7.5380E+03	2.9517E-06	1.3167E+19	2.7890E+14
Cs-134	4.1738E+00	3.2259E-06	1.4498E+19	1.5443E+11
Cs-136	1.2466E+00	1.7009E-08	7.5317E+16	4.6124E+10
Cs-137	3.3588E+00	3.8615E-05	1.6974E+20	1.2427E+11
Ba-139	2.0217E-01	1.2360E-11	5.3548E+13	7.4802E+09
Ba-140	4.5175E-01	6.1707E-09	2.6543E+16	1.6715E+10
La-140	9.7234E-03	1.7494E-11	7.5249E+13	3.5977E+08
La-141	3.1605E-03	5.5886E-13	2.3869E+12	1.1694E+08
La-142	1.9687E-03	1.3753E-13	5.8325E+11	7.2843E+07
Ce-141	1.0697E-02	3.7544E-10	1.6035E+15	3.9581E+08
Ce-143	9.9750E-03	1.5021E-11	6.3256E+13	3.6907E+08
Ce-144	8.5924E-03	2.6940E-09	1.1266E+16	3.1792E+08
Pr-143	4.0265E-03	5.9795E-11	2.5182E+14	1.4898E+08
Nd-147	1.6704E-03	2.0648E-11	8.4590E+13	6.1806E+07
Np-239	1.1924E-01	5.1397E-10	1.2951E+15	4.4118E+09
Pu-238	3.4694E-05	2.0265E-09	5.1278E+15	1.2837E+06
Pu-239	3.0392E-06	4.8895E-08	1.2320E+17	1.1245E+05
Pu-240	5.6915E-06	2.4977E-08	6.2674E+16	2.1059E+05
Pu-241	1.2267E-03	1.1908E-08	2.9757E+16	4.5389E+07
Am-241	8.2199E-07	2.3950E-10	5.9846E+14	3.0414E+04
Cm-242	2.0855E-04	6.2924E-11	1.5659E+14	7.7163E+06
Cm-244	1.3786E-05	1.7041E-10	4.2058E+14	5.1010E+05

Environment Transport Group Inventory:

Time (h) = 2.3000	Total Release	Release Rate/s
Noble gases (atoms)	3.6238E+21	4.3766E+17
Elemental I (atoms)	3.8052E+16	4.5957E+12
Organic I (atoms)	7.6224E+15	9.2058E+11
Aerosols (kg)	4.2427E-05	5.1240E-09

Dose Effective (Ci) I-131 (Thyroid) 2.2919E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid) 2.8892E+01
Total I (Ci) 1.2372E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.6243E+21
Elemental I (atoms)	5.6046E+17	3.8082E+16
Organic I (atoms)	2.2607E+17	7.6334E+15
Aerosols (kg)	6.0985E-04	4.2430E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3069E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2527E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4209E+15
Elemental I (atoms)	6.2007E+09	1.9178E+08
Organic I (atoms)	2.6505E+09	8.1973E+07
Aerosols (kg)	6.7258E-12	2.0802E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	1.0762E+16	0.0000E+00
Elemental I (atoms)	5.8727E+13	0.0000E+00
Organic I (atoms)	1.8167E+12	0.0000E+00
Aerosols (kg)	6.7601E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	2.0856E-11	6.5589E-19	6.8101E+06	2.0989E+03
Co-60	2.4984E-11	2.2103E-17	2.2184E+08	2.5139E+03
Kr-85	1.7946E-04	4.5740E-10	3.2406E+15	7.8212E+10
Kr-85m	2.0722E-03	2.5180E-13	1.7840E+12	1.0996E+12
Kr-87	1.6945E-03	5.9823E-14	4.1409E+11	1.5295E+12
Kr-88	4.5928E-03	3.6627E-13	2.5065E+12	2.7404E+12
Rb-86	1.3655E-05	1.6782E-13	1.1752E+12	9.1157E+09
Sr-89	3.5342E-08	1.2165E-15	8.2315E+09	3.5571E+06
Sr-90	4.6530E-09	3.4111E-14	2.2824E+11	4.6817E+05
Sr-91	3.7217E-08	1.0267E-17	6.7944E+07	3.8840E+06
Sr-92	2.5473E-08	2.0266E-18	1.3266E+07	2.9224E+06
Y-90	1.0647E-10	1.9569E-19	1.3094E+06	8.7676E+03
Y-91	4.5805E-10	1.8678E-17	1.2360E+08	4.5792E+04
Y-92	6.5306E-09	6.7869E-19	4.4426E+06	4.9555E+05
Y-93	4.3280E-10	1.2972E-19	8.4002E+05	4.5069E+04
Zr-95	5.4774E-10	2.5497E-17	1.6163E+08	5.5124E+04
Zr-97	4.8305E-10	2.5268E-19	1.5688E+06	4.9607E+04
Nb-95	5.4939E-10	1.4050E-17	8.9063E+07	5.5276E+04
Mo-99	6.8502E-09	1.4283E-17	8.6882E+07	6.9285E+05
Tc-99m	6.1803E-09	1.1754E-18	7.1496E+06	6.1908E+05
Ru-103	6.0790E-09	1.8836E-16	1.1013E+09	6.1188E+05
Ru-105	3.0319E-09	4.5105E-19	2.5869E+06	3.3015E+05
Ru-106	2.6482E-09	7.9156E-16	4.4971E+09	2.6647E+05
Rh-105	4.0499E-09	4.7982E-18	2.7519E+07	4.0800E+05
Sb-127	6.8708E-09	2.5728E-17	1.2200E+08	6.9390E+05
Sb-129	1.4934E-08	2.6556E-18	1.2397E+07	1.6298E+06
Te-127	6.9006E-09	2.6148E-18	1.2399E+07	6.9216E+05
Te-127m	1.1851E-09	1.2564E-16	5.9577E+08	1.1924E+05
Te-129	1.7242E-08	8.2330E-19	3.8434E+06	1.7705E+06

Te-129m	3.9049E-09	1.2962E-16	6.0512E+08	3.9291E+05
Te-131m	1.3930E-08	1.7470E-17	8.0309E+07	1.4178E+06
Te-132	1.0328E-07	3.4018E-16	1.5520E+09	1.0437E+07
I-131	5.5810E-03	4.5018E-11	2.0695E+14	3.7355E+12
I-132	4.2109E-03	4.0795E-13	1.8612E+12	4.2143E+12
I-133	1.0847E-02	9.5752E-12	4.3356E+13	7.5490E+12
I-134	2.1665E-03	8.1212E-14	3.6498E+11	4.4349E+12
I-135	8.6955E-03	2.4760E-12	1.1045E+13	6.6548E+12
Xe-133	1.9139E-02	1.0225E-10	4.6297E+14	8.3647E+12
Xe-135	8.3066E-03	3.2527E-12	1.4510E+13	3.6102E+12
Cs-134	1.4990E-03	1.1586E-09	5.2069E+15	9.9869E+11
Cs-136	4.4623E-04	6.0885E-12	2.6960E+13	2.9814E+11
Cs-137	1.2064E-03	1.3869E-08	6.0965E+16	8.0369E+11
Ba-139	1.7693E-08	1.0817E-18	4.6864E+06	2.3241E+06
Ba-140	5.4328E-08	7.4210E-16	3.1922E+09	5.4725E+06
La-140	1.6531E-09	2.9742E-18	1.2794E+07	1.3044E+05
La-141	3.4217E-10	6.0504E-20	2.5841E+05	3.7653E+04
La-142	1.7864E-10	1.2479E-20	5.2923E+04	2.2773E+04
Ce-141	1.2878E-09	4.5195E-17	1.9303E+08	1.2960E+05
Ce-143	1.1864E-09	1.7866E-18	7.5238E+06	1.2063E+05
Ce-144	1.0347E-09	3.2440E-16	1.3566E+09	1.0411E+05
Pr-143	4.8569E-10	7.2126E-18	3.0374E+07	4.8805E+04
Nd-147	2.0085E-10	2.4827E-18	1.0171E+07	2.0235E+04
Np-239	1.4256E-08	6.1449E-17	1.5483E+08	1.4431E+06
Pu-238	4.1779E-12	2.4404E-16	6.1750E+08	4.2037E+02
Pu-239	3.6601E-13	5.8886E-15	1.4838E+10	3.6825E+01
Pu-240	6.8539E-13	3.0078E-15	7.5474E+09	6.8962E+01
Pu-241	1.4772E-10	1.4340E-15	3.5834E+09	1.4864E+04
Am-241	9.9002E-14	2.8845E-17	7.2079E+07	9.9601E+00
Cm-242	2.5112E-11	7.5767E-18	1.8855E+07	2.5269E+03
Cm-244	1.6602E-12	2.0521E-17	5.0648E+07	1.6705E+02

CR Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	3.7228E+15	0.0000E+00	
Elemental I (atoms)	1.2783E+13	0.0000E+00	
Organic I (atoms)	3.9619E+11	0.0000E+00	
Aerosols (kg)	1.5089E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.6803E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.2841E-12
Total I (Ci)			3.1501E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3069E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2527E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4209E+15
Elemental I (atoms)	6.2007E+09	1.9178E+08
Organic I (atoms)	2.6505E+09	8.1973E+07
Aerosols (kg)	6.7258E-12	2.0802E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	1.0762E+16	0.0000E+00
Elemental I (atoms)	5.8727E+13	0.0000E+00
Organic I (atoms)	1.8167E+12	0.0000E+00
Aerosols (kg)	6.7601E-08	0.0000E+00

EAB Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE

Delta dose (rem)	1.9252E-02	1.2239E-02	1.9934E-02
Accumulated dose (rem)	1.6727E-01	4.7573E-01	1.9009E-01

LPZ Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	7.4950E-03	4.7646E-03	7.7606E-03
Accumulated dose (rem)	6.5118E-02	1.8521E-01	7.4006E-02

CR Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2589E-05	3.5555E-01	1.5781E-02
Accumulated dose (rem)	3.6634E-03	1.9481E+01	8.6314E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	1.3480E-04	4.2393E-12	4.4017E+13	4.3194E+15
Co-60	1.6149E-04	1.4286E-10	1.4339E+15	5.1723E+15
Kr-85	1.3587E+06	3.4631E+00	2.4536E+25	2.2317E+20
Kr-85m	1.5448E+07	1.8772E-03	1.3299E+22	2.8364E+21
Kr-87	1.2149E+07	4.2891E-04	2.9689E+21	3.0318E+21
Kr-88	3.3935E+07	2.7063E-03	1.8520E+22	6.6617E+21
Rb-86	4.6423E-03	5.7053E-11	3.9952E+14	3.1339E+17
Sr-89	2.2843E-01	7.8627E-09	5.3203E+16	7.3208E+18
Sr-90	3.0075E-02	2.2048E-07	1.4753E+18	9.6325E+17
Sr-91	2.3881E-01	6.5880E-11	4.3597E+14	8.3120E+18
Sr-92	1.6049E-01	1.2769E-11	8.3580E+13	6.9097E+18
Y-90	4.7238E-04	8.6824E-13	5.8096E+12	1.0073E+16
Y-91	2.9246E-03	1.1926E-10	7.8921E+14	9.2919E+16
Y-92	1.8750E-02	1.9485E-12	1.2755E+13	1.1018E+17
Y-93	2.7784E-03	8.3276E-13	5.3925E+12	9.6223E+16
Zr-95	3.5403E-03	1.6479E-10	1.0446E+15	1.1344E+17
Zr-97	3.1095E-03	1.6266E-12	1.0098E+13	1.0434E+17
Nb-95	3.5511E-03	9.0813E-11	5.7567E+14	1.1373E+17
Mo-99	4.4231E-02	9.2222E-11	5.6099E+14	1.4336E+18
Tc-99m	3.9938E-02	7.5954E-12	4.6203E+13	1.2766E+18
Ru-103	3.9290E-02	1.2174E-09	7.1177E+15	1.2594E+18
Ru-105	1.9294E-02	2.8703E-12	1.6462E+13	7.3918E+17
Ru-106	1.7117E-02	5.1164E-09	2.9067E+16	5.4827E+17
Rh-105	2.6164E-02	3.0999E-11	1.7779E+14	8.4093E+17
Sb-127	4.4378E-02	1.6618E-10	7.8798E+14	1.4335E+18
Sb-129	9.4990E-02	1.6892E-11	7.8857E+13	3.6576E+18
Te-127	4.4600E-02	1.6900E-11	8.0135E+13	1.4259E+18
Te-127m	7.6603E-03	8.1211E-10	3.8509E+15	2.4534E+17
Te-129	1.1037E-01	5.2700E-12	2.4602E+13	3.8253E+18
Te-129m	2.5240E-02	8.3783E-10	3.9113E+15	8.0842E+17
Te-131m	8.9834E-02	1.1266E-10	5.1790E+14	2.9537E+18
Te-132	6.6695E-01	2.1968E-09	1.0022E+16	2.1577E+19
I-131	3.1167E+04	2.5140E-04	1.1557E+21	1.4919E+20
I-132	3.9261E+04	3.8036E-06	1.7353E+19	2.1218E+20
I-133	6.0334E+04	5.3261E-05	2.4116E+20	3.0290E+20
I-134	1.1172E+04	4.1878E-07	1.8821E+18	2.0563E+20
I-135	4.8023E+04	1.3674E-05	6.1000E+19	2.7035E+20
Xe-133	1.4441E+08	7.7148E-01	3.4932E+24	2.3791E+22
Xe-135	5.8328E+07	2.2840E-02	1.0189E+23	9.8965E+21
Cs-134	5.0968E-01	3.9393E-07	1.7704E+18	3.4321E+19
Cs-136	1.5169E-01	2.0697E-09	9.1647E+15	1.0251E+19
Cs-137	4.1018E-01	4.7157E-06	2.0729E+19	2.7619E+19
Ba-139	1.0875E-01	6.6488E-12	2.8806E+13	6.3018E+18
Ba-140	3.5108E-01	4.7956E-09	2.0629E+16	1.1273E+19
La-140	6.6952E-03	1.2046E-11	5.1814E+13	1.2075E+17
La-141	2.1730E-03	3.8424E-13	1.6411E+12	8.5237E+16
La-142	1.1039E-03	7.7115E-14	3.2704E+11	5.9941E+16
Ce-141	8.3259E-03	2.9220E-10	1.2480E+15	2.6677E+17
Ce-143	7.6527E-03	1.1524E-11	4.8530E+13	2.5101E+17
Ce-144	6.6877E-03	2.0968E-09	8.7688E+15	2.1422E+17
Pr-143	3.1326E-03	4.6520E-11	1.9591E+14	1.0017E+17
Nd-147	1.2979E-03	1.6043E-11	6.5724E+13	4.1692E+16
Np-239	9.2031E-02	3.9670E-10	9.9957E+14	2.9888E+18
Pu-238	2.7005E-05	1.5774E-09	3.9914E+15	8.6490E+14

Pu-239	2.3658E-06	3.8062E-08	9.5907E+16	7.5761E+13
Pu-240	4.4301E-06	1.9442E-08	4.8784E+16	1.4189E+14
Pu-241	9.5485E-04	9.2692E-09	2.3162E+16	3.0582E+16
Am-241	6.3985E-07	1.8643E-10	4.6585E+14	2.0489E+13
Cm-242	1.6231E-04	4.8973E-11	1.2187E+14	5.1995E+15
Cm-244	1.0731E-05	1.3264E-10	3.2737E+14	3.4369E+14

DW Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.8166E+25	0.0000E+00	
Elemental I (atoms)	5.4557E+15	4.8591E+22	
Organic I (atoms)	1.4770E+21	0.0000E+00	
Aerosols (kg)	5.4511E-06	4.8969E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0087E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2453E-05
Total I (Ci)			1.8996E+05

DW to RB Transport Group Inventory:

Time (h) = 2.4000 Leakage Transport

Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6727E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.4000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.6037E+21
Elemental I (atoms)	0.0000E+00	8.3566E+17
Organic I (atoms)	0.0000E+00	5.6871E+17
Aerosols (kg)	0.0000E+00	8.8083E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.4000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.6037E+21
Elemental I (atoms)	0.0000E+00	8.3566E+17
Organic I (atoms)	0.0000E+00	5.6871E+17
Aerosols (kg)	0.0000E+00	8.8083E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	1.4319E-02	4.5031E-10	4.6756E+15	2.5520E+12
Co-60	1.7154E-02	1.5175E-08	1.5231E+17	3.0564E+12
Kr-85	8.1847E+02	2.0862E-03	1.4780E+22	8.4967E+16
Kr-85m	9.3059E+03	1.1308E-06	8.0115E+18	1.0517E+18
Kr-87	7.3185E+03	2.5837E-07	1.7884E+18	1.0447E+18
Kr-88	2.0442E+04	1.6302E-06	1.1156E+19	2.4311E+18
Rb-86	8.6900E-01	1.0680E-08	7.4786E+16	2.4329E+14
Sr-89	2.4264E+01	8.3519E-07	5.6513E+18	4.3250E+15
Sr-90	3.1947E+00	2.3420E-05	1.5671E+20	5.6921E+14
Sr-91	2.5367E+01	6.9979E-09	4.6310E+16	4.7555E+15
Sr-92	1.7048E+01	1.3563E-09	8.8781E+15	3.6470E+15
Y-90	7.1222E-02	1.3091E-10	8.7594E+14	9.3662E+12
Y-91	3.1412E-01	1.2809E-08	8.4766E+16	5.5462E+13
Y-92	4.1813E+00	4.3454E-10	2.8444E+15	4.5436E+14
Y-93	2.9512E-01	8.8458E-11	5.7280E+14	5.5157E+13
Zr-95	3.7605E-01	1.7505E-08	1.1096E+17	6.7025E+13
Zr-97	3.3030E-01	1.7278E-10	1.0727E+15	6.0549E+13
Nb-95	3.7720E-01	9.6463E-09	6.1149E+16	6.7206E+13
Mo-99	4.6983E+00	9.7961E-09	5.9589E+16	8.4322E+14
Tc-99m	4.2424E+00	8.0680E-10	4.9077E+15	7.5296E+14
Ru-103	4.1735E+00	1.2931E-07	7.5606E+17	7.4399E+14
Ru-105	2.0494E+00	3.0488E-10	1.7486E+15	4.0764E+14
Ru-106	1.8182E+00	5.4347E-07	3.0876E+18	3.2398E+14
Rh-105	2.7792E+00	3.2927E-09	1.8885E+16	4.9620E+14
Sb-127	4.7139E+00	1.7652E-08	8.3701E+16	8.4426E+14
Sb-129	1.0090E+01	1.7943E-09	8.3764E+15	2.0132E+15
Te-127	4.7375E+00	1.7951E-09	8.5121E+15	8.4171E+14
Te-127m	8.1369E-01	8.6264E-08	4.0905E+17	1.4498E+14

Te-129	1.1723E+01	5.5979E-10	2.6133E+15	2.1709E+15
Te-129m	2.6810E+00	8.8996E-08	4.1546E+17	4.7771E+14
Te-131m	9.5424E+00	1.1967E-08	5.5012E+16	1.7276E+15
Te-132	7.0844E+01	2.3335E-07	1.0646E+18	1.2700E+16
I-131	4.2520E+02	3.4297E-06	1.5767E+19	1.1080E+17
I-132	4.2140E+02	4.0825E-08	1.8625E+17	1.2840E+17
I-133	8.2351E+02	7.2697E-07	3.2916E+18	2.2106E+17
I-134	1.5248E+02	5.7160E-09	2.5688E+16	9.6778E+16
I-135	6.5547E+02	1.8665E-07	8.3259E+17	1.8911E+17
Xe-133	8.6929E+04	4.6441E-04	2.1028E+21	9.0448E+18
Xe-135	3.4559E+04	1.3533E-05	6.0367E+19	3.6741E+18
Cs-134	9.5409E+01	7.3741E-05	3.3140E+20	2.6670E+16
Cs-136	2.8395E+01	3.8743E-07	1.7156E+18	7.9549E+15
Cs-137	7.6783E+01	8.8274E-04	3.8803E+21	2.1462E+16
Ba-139	1.1552E+01	7.0625E-10	3.0598E+15	2.9866E+15
Ba-140	3.7293E+01	5.0940E-07	2.1912E+18	6.6551E+15
La-140	1.1002E+00	1.9794E-09	8.5143E+15	1.3463E+14
La-141	2.3082E-01	4.0815E-11	1.7432E+14	4.6588E+13
La-142	1.1726E-01	8.1913E-12	3.4739E+13	2.9071E+13
Ce-141	8.8417E-01	3.1031E-08	1.3253E+17	1.5759E+14
Ce-143	8.1288E-01	1.2241E-09	5.1549E+15	1.4696E+14
Ce-144	7.1038E-01	2.2273E-07	9.3145E+17	1.2658E+14
Pr-143	3.3340E-01	4.9512E-09	2.0851E+16	5.9298E+13
Nd-147	1.3786E-01	1.7041E-09	6.9814E+15	2.4608E+13
Np-239	9.7757E+00	4.2138E-08	1.0618E+17	1.7566E+15
Pu-238	2.8685E-03	1.6756E-07	4.2397E+17	5.1110E+11
Pu-239	2.5130E-04	4.0431E-06	1.0187E+19	4.4772E+10
Pu-240	4.7058E-04	2.0651E-06	5.1819E+18	8.3845E+10
Pu-241	1.0143E-01	9.8460E-07	2.4603E+18	1.8072E+13
Am-241	6.7973E-05	1.9805E-08	4.9488E+16	1.2109E+10
Cm-242	1.7241E-02	5.2020E-09	1.2945E+16	3.0723E+12
Cm-244	1.1399E-03	1.4089E-08	3.4774E+16	2.0310E+11

RB Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	1.6964E+22	0.0000E+00	
Elemental I (atoms)	9.3010E+17	0.0000E+00	
Organic I (atoms)	9.5418E+17	0.0000E+00	
Aerosols (kg)	9.9443E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7401E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.1387E-08
Total I (Ci)			2.4781E+03

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport
Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6727E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.1711E+21
Elemental I (atoms)	5.9117E+17	3.9032E+16
Organic I (atoms)	2.5605E+17	8.5609E+15
Aerosols (kg)	6.4263E-04	4.3444E-05

Environment Integral Nuclide Release:

Time (h) = 2.4000	Ci	kg	Atoms	Bq
Co-58	1.8783E-04	5.9070E-12	6.1332E+13	6.9497E+06
Co-60	2.2496E-04	1.9901E-10	1.9975E+15	8.3236E+06
Kr-85	2.0112E+02	5.1263E-04	3.6319E+21	7.4416E+12
Kr-85m	2.4692E+03	3.0004E-07	2.1257E+18	9.1359E+13
Kr-87	2.4035E+03	8.4853E-08	5.8735E+17	8.8930E+13
Kr-88	5.6808E+03	4.5304E-07	3.1003E+18	2.1019E+14
Rb-86	3.8996E-02	4.7926E-10	3.3560E+15	1.4428E+09
Sr-89	3.1832E-01	1.0957E-08	7.4139E+16	1.1778E+10
Sr-90	4.1895E-02	3.0714E-07	2.0551E+18	1.5501E+09

Sr-91	3.4860E-01	9.6167E-11	6.3641E+14	1.2898E+10
Sr-92	2.6469E-01	2.1058E-11	1.3784E+14	9.7935E+09
Y-90	7.3985E-04	1.3599E-12	9.0991E+12	2.7374E+07
Y-91	4.0902E-03	1.6678E-10	1.1037E+15	1.5134E+08
Y-92	3.8899E-02	4.0426E-12	2.6462E+13	1.4393E+09
Y-93	4.0443E-03	1.2122E-12	7.8495E+12	1.4964E+08
Zr-95	4.9331E-03	2.2963E-10	1.4556E+15	1.8252E+08
Zr-97	4.4464E-03	2.3259E-12	1.4440E+13	1.6452E+08
Nb-95	4.9467E-03	1.2650E-10	8.0193E+14	1.8303E+08
Mo-99	6.2027E-02	1.2933E-10	7.8669E+14	2.2950E+09
Tc-99m	5.5700E-02	1.0593E-11	6.4436E+13	2.0609E+09
Ru-103	5.4757E-02	1.6966E-09	9.9198E+15	2.0260E+09
Ru-105	2.9746E-02	4.4252E-12	2.5380E+13	1.1006E+09
Ru-106	2.3846E-02	7.1275E-09	4.0493E+16	8.8229E+08
Rh-105	3.6541E-02	4.3292E-11	2.4829E+14	1.3520E+09
Sb-127	6.2114E-02	2.3259E-10	1.1029E+15	2.2982E+09
Sb-129	1.4687E-01	2.6118E-11	1.2193E+14	5.4343E+09
Te-127	6.2156E-02	2.3552E-11	1.1168E+14	2.2998E+09
Te-127m	1.0671E-02	1.1313E-09	5.3643E+15	3.9482E+08
Te-129	1.6274E-01	7.7709E-12	3.6277E+13	6.0214E+09
Te-129m	3.5162E-02	1.1672E-09	5.4488E+15	1.3010E+09
Te-131m	1.2699E-01	1.5926E-10	7.3212E+14	4.6988E+09
Te-132	9.3431E-01	3.0775E-09	1.4040E+16	3.4569E+10
I-131	1.6805E+01	1.3555E-07	6.2313E+17	6.2178E+11
I-132	2.1296E+01	2.0632E-09	9.4127E+15	7.8797E+11
I-133	3.4106E+01	3.0107E-08	1.3632E+17	1.2619E+12
I-134	2.3622E+01	8.8550E-10	3.9796E+15	8.7402E+11
I-135	3.0413E+01	8.6601E-09	3.8631E+16	1.1253E+12
Xe-133	2.1402E+04	1.1434E-04	5.1772E+20	7.9188E+14
Xe-135	8.6506E+03	3.3874E-06	1.5111E+19	3.2007E+14
Cs-134	4.2711E+00	3.3011E-06	1.4836E+19	1.5803E+11
Cs-136	1.2756E+00	1.7404E-08	7.7066E+16	4.7196E+10
Cs-137	3.4371E+00	3.9515E-05	1.7370E+20	1.2717E+11
Ba-139	2.1395E-01	1.3080E-11	5.6668E+13	7.9160E+09
Ba-140	4.8977E-01	6.6900E-09	2.8777E+16	1.8121E+10
La-140	1.0845E-02	1.9511E-11	8.3929E+13	4.0126E+08
La-141	3.3959E-03	6.0047E-13	2.5646E+12	1.2565E+08
La-142	2.0883E-03	1.4588E-13	6.1867E+11	7.7266E+07
Ce-141	1.1599E-02	4.0707E-10	1.7386E+15	4.2916E+08
Ce-143	1.0804E-02	1.6269E-11	6.8512E+13	3.9974E+08
Ce-144	9.3167E-03	2.9210E-09	1.2216E+16	3.4472E+08
Pr-143	4.3664E-03	6.4843E-11	2.7307E+14	1.6156E+08
Nd-147	1.8110E-03	2.2386E-11	9.1708E+13	6.7006E+07
Np-239	1.2920E-01	5.5693E-10	1.4033E+15	4.7805E+09
Pu-238	3.7618E-05	2.1974E-09	5.5600E+15	1.3919E+06
Pu-239	3.2954E-06	5.3017E-08	1.3359E+17	1.2193E+05
Pu-240	6.1712E-06	2.7083E-08	6.7957E+16	2.2834E+05
Pu-241	1.3301E-03	1.2912E-08	3.2265E+16	4.9215E+07
Am-241	8.9129E-07	2.5969E-10	6.4891E+14	3.2978E+04
Cm-242	2.2613E-04	6.8228E-11	1.6978E+14	8.3667E+06
Cm-244	1.4949E-05	1.8477E-10	4.5603E+14	5.5310E+05

Environment Transport Group Inventory:

Time (h) = 2.4000	Total Release	Release Rate/s	
Noble gases (atoms)	4.1706E+21	4.8271E+17	
Elemental I (atoms)	3.9001E+16	4.5140E+12	
Organic I (atoms)	8.5484E+15	9.8940E+11	
Aerosols (kg)	4.3441E-05	5.0279E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.3513E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.9622E+01
Total I (Ci)			1.2624E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.1711E+21
Elemental I (atoms)	5.9117E+17	3.9032E+16
Organic I (atoms)	2.5605E+17	8.5609E+15
Aerosols (kg)	6.4263E-04	4.3444E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3164E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2528E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6359E+15
Elemental I (atoms)	6.5631E+09	2.0298E+08
Organic I (atoms)	3.0043E+09	9.2916E+07
Aerosols (kg)	7.1126E-12	2.1998E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	1.1051E+16	0.0000E+00
Elemental I (atoms)	5.9677E+13	0.0000E+00
Organic I (atoms)	1.8461E+12	0.0000E+00
Aerosols (kg)	6.8723E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	2.1926E-11	6.8955E-19	7.1596E+06	2.3910E+03
Co-60	2.6267E-11	2.3238E-17	2.3323E+08	2.8638E+03
Kr-85	1.8055E-04	4.6019E-10	3.2604E+15	8.0617E+10
Kr-85m	2.0528E-03	2.4944E-13	1.7673E+12	1.1271E+12
Kr-87	1.6144E-03	5.6994E-14	3.9451E+11	1.5516E+12
Kr-88	4.5093E-03	3.5962E-13	2.4610E+12	2.8012E+12
Rb-86	1.2639E-05	1.5533E-13	1.0877E+12	9.2840E+09
Sr-89	3.7155E-08	1.2789E-15	8.6537E+09	4.0520E+06
Sr-90	4.8919E-09	3.5863E-14	2.3997E+11	5.3333E+05
Sr-91	3.8844E-08	1.0716E-17	7.0913E+07	4.4033E+06
Sr-92	2.6105E-08	2.0769E-18	1.3595E+07	3.2746E+06
Y-90	1.1615E-10	2.1348E-19	1.4285E+06	1.0245E+04
Y-91	4.8219E-10	1.9662E-17	1.3012E+08	5.2204E+04
Y-92	7.1492E-09	7.4298E-19	4.8634E+06	5.8475E+05
Y-93	4.5192E-10	1.3545E-19	8.7712E+05	5.1109E+04
Zr-95	5.7584E-10	2.6805E-17	1.6992E+08	6.2795E+04
Zr-97	5.0577E-10	2.6457E-19	1.6426E+06	5.6358E+04
Nb-95	5.7760E-10	1.4771E-17	9.3636E+07	6.2969E+04
Mo-99	7.1944E-09	1.5000E-17	9.1247E+07	7.8873E+05
Tc-99m	6.4962E-09	1.2354E-18	7.5151E+06	7.0513E+05
Ru-103	6.3907E-09	1.9801E-16	1.1577E+09	6.9700E+05
Ru-105	3.1383E-09	4.6686E-19	2.6776E+06	3.7228E+05
Ru-106	2.7842E-09	8.3220E-16	4.7280E+09	3.0355E+05
Rh-105	4.2558E-09	5.0421E-18	2.8918E+07	4.6466E+05
Sb-127	7.2182E-09	2.7029E-17	1.2817E+08	7.9008E+05
Sb-129	1.5451E-08	2.7476E-18	1.2827E+07	1.8373E+06
Te-127	7.2544E-09	2.7488E-18	1.3034E+07	7.8844E+05
Te-127m	1.2460E-09	1.3209E-16	6.2637E+08	1.3584E+05
Te-129	1.7952E-08	8.5720E-19	4.0017E+06	2.0049E+06
Te-129m	4.1054E-09	1.3628E-16	6.3619E+08	4.4759E+05
Te-131m	1.4612E-08	1.8324E-17	8.4239E+07	1.6127E+06
Te-132	1.0848E-07	3.5733E-16	1.6302E+09	1.1883E+07
I-131	5.1645E-03	4.1657E-11	1.9150E+14	3.8043E+12
I-132	3.7823E-03	3.6643E-13	1.6717E+12	4.2655E+12
I-133	1.0008E-02	8.8342E-12	4.0001E+13	7.6825E+12
I-134	1.8530E-03	6.9462E-14	3.1217E+11	4.4606E+12
I-135	7.9654E-03	2.2682E-12	1.0118E+13	6.7615E+12
Xe-133	1.9245E-02	1.0281E-10	4.6553E+14	8.6210E+12
Xe-135	8.2914E-03	3.2468E-12	1.4483E+13	3.7204E+12
Cs-134	1.3876E-03	1.0725E-09	4.8199E+15	1.0172E+12
Cs-136	4.1298E-04	5.6348E-12	2.4951E+13	3.0364E+11

Cs-137	1.1167E-03	1.2839E-08	5.6435E+16	8.1856E+11
Ba-139	1.7689E-08	1.0815E-18	4.6854E+06	2.5658E+06
Ba-140	5.7106E-08	7.8004E-16	3.3553E+09	6.2333E+06
La-140	1.8156E-09	3.2664E-18	1.4051E+07	1.5334E+05
La-141	3.5345E-10	6.2499E-20	2.6693E+05	4.2402E+04
La-142	1.7956E-10	1.2543E-20	5.3195E+04	2.5220E+04
Ce-141	1.3538E-09	4.7514E-17	2.0293E+08	1.4764E+05
Ce-143	1.2448E-09	1.8744E-18	7.8936E+06	1.3723E+05
Ce-144	1.0878E-09	3.4105E-16	1.4263E+09	1.1860E+05
Pr-143	5.1076E-10	7.5849E-18	3.1942E+07	5.5605E+04
Nd-147	2.1111E-10	2.6095E-18	1.0690E+07	2.3047E+04
Np-239	1.4969E-08	6.4525E-17	1.6259E+08	1.6426E+06
Pu-238	4.3925E-12	2.5658E-16	6.4922E+08	4.7888E+02
Pu-239	3.8481E-13	6.1910E-15	1.5600E+10	4.1950E+01
Pu-240	7.2058E-13	3.1623E-15	7.9349E+09	7.8560E+01
Pu-241	1.5531E-10	1.5077E-15	3.7674E+09	1.6932E+04
Am-241	1.0409E-13	3.0327E-17	7.5782E+07	1.1346E+01
Cm-242	2.6401E-11	7.9657E-18	1.9822E+07	2.8785E+03
Cm-244	1.7455E-12	2.1575E-17	5.3249E+07	1.9029E+02

CR Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	3.7450E+15	0.0000E+00	
Elemental I (atoms)	1.1815E+13	0.0000E+00	
Organic I (atoms)	3.6633E+11	0.0000E+00	
Aerosols (kg)	1.3967E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.4774E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.0315E-12
Total I (Ci)			2.8773E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3164E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2528E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6359E+15
Elemental I (atoms)	6.5631E+09	2.0298E+08
Organic I (atoms)	3.0043E+09	9.2916E+07
Aerosols (kg)	7.1126E-12	2.1998E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	1.1051E+16	0.0000E+00
Elemental I (atoms)	5.9677E+13	0.0000E+00
Organic I (atoms)	1.8461E+12	0.0000E+00
Aerosols (kg)	6.8723E-08	0.0000E+00

EAB Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.8211E-01	1.5346E-01	3.9055E-01
Accumulated dose (rem)	5.4937E-01	6.2920E-01	5.8064E-01

LPZ Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.4876E-01	5.9744E-02	1.5204E-01
Accumulated dose (rem)	2.1388E-01	2.4495E-01	2.2605E-01

CR Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE

Delta dose (rem)	5.1751E-04	3.1104E+00	1.3837E-01
Accumulated dose (rem)	4.1809E-03	2.2592E+01	1.0015E+00

DW Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Kr-85	1.3565E+06	3.4576E+00	2.4497E+25	5.1249E+20
Kr-85m	1.2041E+07	1.4632E-03	1.0366E+22	5.7504E+21
Kr-87	5.0710E+06	1.7902E-04	1.2392E+21	4.7582E+21
Kr-88	2.2927E+07	1.8284E-03	1.2513E+22	1.2644E+22
I-131	3.0936E+04	2.4954E-04	1.1471E+21	1.5580E+20
I-132	2.4200E+04	2.3445E-06	1.0696E+19	2.1881E+20
I-133	5.7105E+04	5.0410E-05	2.2825E+20	3.1541E+20
I-134	3.1476E+03	1.1799E-07	5.3026E+17	2.0698E+20
I-135	4.0537E+04	1.1543E-05	5.1491E+19	2.7976E+20
Xe-133	1.4291E+08	7.6348E-01	3.4570E+24	5.4405E+22
Xe-135	5.1550E+07	2.0186E-02	9.0047E+22	2.1590E+22

DW Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8068E+25	0.0000E+00	
Elemental I (atoms)	7.5683E-06	4.8591E+22	
Organic I (atoms)	1.4381E+21	0.0000E+00	
Aerosols (kg)	7.7527E-27	4.8969E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.8322E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1889E-05
Total I (Ci)			1.5593E+05

DW to RB Transport Group Inventory:

Time (h) = 4.0000	Leakage Transport
Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	2.6912E+18
Aerosols (kg)	1.6727E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 4.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.3566E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8083E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 4.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.3566E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8083E-04

RB Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	8.3833E-03	2.6364E-10	2.7374E+15	4.8757E+12
Co-60	1.0049E-02	8.8903E-09	8.9231E+16	5.8410E+12
Kr-85	1.5310E+03	3.9023E-03	2.7647E+22	3.4682E+17
Kr-85m	1.3590E+04	1.6513E-06	1.1700E+19	3.6582E+18
Kr-87	5.7232E+03	2.0205E-07	1.3986E+18	2.5432E+18
Kr-88	2.5876E+04	2.0636E-06	1.4122E+19	7.7456E+18
Rb-86	5.0785E-01	6.2414E-09	4.3706E+16	3.8419E+14
Sr-89	1.4202E+01	4.8885E-07	3.3078E+18	8.2622E+15
Sr-90	1.8716E+00	1.3721E-05	9.1809E+19	1.0878E+15
Sr-91	1.3224E+01	3.6480E-09	2.4142E+16	8.6622E+15
Sr-92	6.6333E+00	5.2774E-10	3.4545E+15	5.9592E+15
Y-90	7.3180E-02	1.3451E-10	9.0001E+14	2.4632E+13
Y-91	1.8854E-01	7.6879E-09	5.0876E+16	1.0700E+14
Y-92	3.9934E+00	4.1501E-10	2.7166E+15	1.3408E+15
Y-93	1.5492E-01	4.6434E-11	3.0068E+14	1.0075E+14
Zr-95	2.2015E-01	1.0248E-08	6.4962E+16	1.2805E+14
Zr-97	1.8121E-01	9.4794E-11	5.8852E+14	1.1260E+14

Nb-95	2.2098E-01	5.6513E-09	3.5824E+16	1.2844E+14
Mo-99	2.7067E+00	5.6434E-09	3.4329E+16	1.6001E+15
Tc-99m	2.4736E+00	4.7042E-10	2.8616E+15	1.4364E+15
Ru-103	2.4422E+00	7.5670E-08	4.4242E+17	1.4211E+15
Ru-105	9.3529E-01	1.3914E-10	7.9801E+14	7.0528E+14
Ru-106	1.0651E+00	3.1836E-07	1.8087E+18	6.1912E+14
Rh-105	1.6108E+00	1.9084E-09	1.0945E+16	9.4504E+14
Sb-127	2.7287E+00	1.0218E-08	4.8451E+16	1.6053E+15
Sb-129	4.5729E+00	8.1319E-10	3.7962E+15	3.4742E+15
Te-127	2.7702E+00	1.0497E-09	4.9773E+15	1.6073E+15
Te-127m	4.7671E-01	5.0539E-08	2.3965E+17	2.7707E+14
Te-129	5.7825E+00	2.7611E-10	1.2890E+15	3.8937E+15
Te-129m	1.5701E+00	5.2119E-08	2.4331E+17	9.1285E+14
Te-131m	5.3876E+00	6.7564E-09	3.1059E+16	3.2508E+15
Te-132	4.0920E+01	1.3479E-07	6.1492E+17	2.4127E+16
I-131	2.7168E+02	2.1914E-06	1.0074E+19	1.8260E+17
I-132	1.8719E+02	1.8134E-08	8.2733E+16	1.8861E+17
I-133	5.0167E+02	4.4286E-07	2.0052E+18	3.5708E+17
I-134	2.7652E+01	1.0365E-09	4.6584E+15	1.1209E+17
I-135	3.5612E+02	1.0140E-07	4.5235E+17	2.9189E+17
Xe-133	1.6126E+05	8.6151E-04	3.9008E+21	3.6732E+19
Xe-135	5.7914E+04	2.2678E-05	1.0116E+20	1.4111E+19
Cs-134	5.5892E+01	4.3199E-05	1.9414E+20	4.2157E+16
Cs-136	1.6577E+01	2.2618E-07	1.0015E+18	1.2557E+16
Cs-137	4.4983E+01	5.1716E-04	2.2733E+21	3.3927E+16
Ba-139	3.0270E+00	1.8506E-10	8.0175E+14	4.3204E+15
Ba-140	2.1769E+01	2.9736E-07	1.2791E+18	1.2699E+16
La-140	1.2199E+00	2.1948E-09	9.4410E+15	3.8111E+14
La-141	1.0198E-01	1.8032E-11	7.7017E+13	7.9643E+13
La-142	3.3459E-02	2.3373E-12	9.9125E+12	4.3074E+13
Ce-141	5.1743E-01	1.8159E-08	7.7559E+16	3.0105E+14
Ce-143	4.6049E-01	6.9343E-10	2.9202E+15	2.7691E+14
Ce-144	4.1611E-01	1.3046E-07	5.4560E+17	2.4189E+14
Pr-143	1.9626E-01	2.9145E-09	1.2274E+16	1.1352E+14
Nd-147	8.0428E-02	9.9419E-10	4.0729E+15	4.6945E+13
Np-239	5.6159E+00	2.4207E-08	6.0996E+16	3.3294E+15
Pu-238	1.6805E-03	9.8165E-08	2.4839E+17	9.7675E+11
Pu-239	1.4726E-04	2.3691E-06	5.9695E+18	8.5570E+10
Pu-240	2.7569E-04	1.2099E-06	3.0358E+18	1.6024E+11
Pu-241	5.9420E-02	5.7682E-07	1.4414E+18	3.4536E+13
Am-241	3.9840E-05	1.1608E-08	2.9006E+16	2.3145E+10
Cm-242	1.0098E-02	3.0467E-09	7.5818E+15	5.8707E+12
Cm-244	6.6780E-04	8.2543E-09	2.0372E+16	3.8814E+11

RB Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	3.1676E+22	0.0000E+00	
Elemental I (atoms)	5.3224E+17	0.0000E+00	
Organic I (atoms)	1.6615E+18	0.0000E+00	
Aerosols (kg)	5.8253E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0926E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3191E-08
Total I (Ci)			1.3443E+03

DW to RB Transport Group Inventory:

Time (h) = 4.0000 Leakage Transport

Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	2.6912E+18
Aerosols (kg)	1.6727E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7530E+22
Elemental I (atoms)	9.6100E+17	5.0470E+16
Organic I (atoms)	9.5332E+17	3.0126E+16
Aerosols (kg)	1.0421E-03	5.5798E-05

Environment Integral Nuclide Release:

Time (h) = 4.0000	Ci	kg	Atoms	Bq
Co-58	3.6568E-04	1.1500E-11	1.1940E+14	1.3530E+07
Co-60	4.3809E-04	3.8755E-10	3.8898E+15	1.6209E+07
Kr-85	8.4623E+02	2.1569E-03	1.5281E+22	3.1310E+13
Kr-85m	8.8384E+03	1.0740E-06	7.6090E+18	3.2702E+14
Kr-87	5.9900E+03	2.1147E-07	1.4638E+18	2.2163E+14
Kr-88	1.8606E+04	1.4838E-06	1.0154E+19	6.8842E+14
Rb-86	4.9780E-02	6.1179E-10	4.2840E+15	1.8418E+09
Sr-89	6.1965E-01	2.1329E-08	1.4432E+17	2.2927E+10
Sr-90	8.1587E-02	5.9811E-07	4.0021E+18	3.0187E+09
Sr-91	6.4652E-01	1.7835E-10	1.1803E+15	2.3921E+10
Sr-92	4.3940E-01	3.4958E-11	2.2883E+14	1.6258E+10
Y-90	1.9506E-03	3.5853E-12	2.3990E+13	7.2173E+07
Y-91	8.0405E-03	3.2786E-10	2.1697E+15	2.9750E+08
Y-92	1.0955E-01	1.1385E-11	7.4522E+13	4.0533E+09
Y-93	7.5218E-03	2.2545E-12	1.4599E+13	2.7831E+08
Zr-95	9.6036E-03	4.4704E-10	2.8338E+15	3.5534E+08
Zr-97	8.4217E-03	4.4054E-12	2.7351E+13	3.1160E+08
Nb-95	9.6332E-03	2.4635E-10	1.5617E+15	3.5643E+08
Mo-99	1.1993E-01	2.5005E-10	1.5210E+15	4.4372E+09
Tc-99m	1.0830E-01	2.0596E-11	1.2528E+14	4.0070E+09
Ru-103	1.0658E-01	3.3023E-09	1.9308E+16	3.9435E+09
Ru-105	5.2349E-02	7.7878E-12	4.4666E+13	1.9369E+09
Ru-106	4.6435E-02	1.3879E-08	7.8853E+16	1.7181E+09
Rh-105	7.0904E-02	8.4005E-11	4.8180E+14	2.6235E+09
Sb-127	1.2034E-01	4.5062E-10	2.1368E+15	4.4526E+09
Sb-129	2.5780E-01	4.5844E-11	2.1401E+14	9.5385E+09
Te-127	1.2097E-01	4.5836E-11	2.1735E+14	4.4758E+09
Te-127m	2.0781E-02	2.2031E-09	1.0447E+16	7.6888E+08
Te-129	2.9714E-01	1.4188E-11	6.6235E+13	1.0994E+10
Te-129m	6.8466E-02	2.2727E-09	1.0610E+16	2.5333E+09
Te-131m	2.4344E-01	3.0529E-10	1.4034E+15	9.0074E+09
Te-132	1.8085E+00	5.9568E-09	2.7176E+16	6.6913E+10
I-131	2.2283E+01	1.7974E-07	8.2627E+17	8.2447E+11
I-132	2.5847E+01	2.5040E-09	1.1424E+16	9.5634E+11
I-133	4.4470E+01	3.9256E-08	1.7775E+17	1.6454E+12
I-134	2.4745E+01	9.2761E-10	4.1688E+15	9.1558E+11
I-135	3.8216E+01	1.0882E-08	4.8543E+16	1.4140E+12
Xe-133	8.9592E+04	4.7864E-04	2.1672E+21	3.3149E+15
Xe-135	3.4254E+04	1.3413E-05	5.9834E+19	1.2674E+15
Cs-134	5.4564E+00	4.2173E-06	1.8953E+19	2.0189E+11
Cs-136	1.6277E+00	2.2209E-08	9.8344E+16	6.0226E+10
Cs-137	4.3910E+00	5.0482E-05	2.2191E+20	1.6247E+11
Ba-139	3.1349E-01	1.9165E-11	8.3034E+13	1.1599E+10
Ba-140	9.5229E-01	1.3008E-08	5.5954E+16	3.5235E+10
La-140	3.0490E-02	5.4854E-11	2.3596E+14	1.1281E+09
La-141	5.9035E-03	1.0439E-12	4.4584E+12	2.1843E+08
La-142	3.1361E-03	2.1908E-13	9.2909E+11	1.1604E+08
Ce-141	2.2578E-02	7.9240E-10	3.3844E+15	8.3540E+08
Ce-143	2.0740E-02	3.1231E-11	1.3152E+14	7.6737E+08
Ce-144	1.8142E-02	5.6880E-09	2.3788E+16	6.7125E+08
Pr-143	8.5185E-03	1.2650E-10	5.3274E+14	3.1518E+08
Nd-147	3.5203E-03	4.3515E-11	1.7827E+14	1.3025E+08
Np-239	2.4951E-01	1.0755E-09	2.7100E+15	9.2317E+09
Pu-238	7.3258E-05	4.2792E-09	1.0828E+16	2.7105E+06
Pu-239	6.4179E-06	1.0325E-07	2.6017E+17	2.3746E+05
Pu-240	1.2018E-05	5.2741E-08	1.3234E+17	4.4466E+05
Pu-241	2.5903E-03	2.5145E-08	6.2833E+16	9.5840E+07
Am-241	1.7360E-06	5.0580E-10	1.2639E+15	6.4232E+04
Cm-242	4.4030E-04	1.3285E-10	3.3060E+14	1.6291E+07
Cm-244	2.9111E-05	3.5982E-10	8.8808E+14	1.0771E+06

Environment Transport Group Inventory:

Time (h) = 4.0000	Total Release	Release Rate/s	
Noble gases (atoms)	1.7528E+22	1.2172E+18	
Elemental I (atoms)	5.0422E+16	3.5015E+12	
Organic I (atoms)	3.0082E+16	2.0890E+12	
Aerosols (kg)	5.5795E-05	3.8747E-09	
Dose Effective (Ci) I-131 (Thyroid)			3.0970E+01

Dose Effective (Ci) I-131 (ICRP2 Thyroid) 3.8703E+01
Total I (Ci) 1.5556E+02

RB to Environment Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7530E+22
Elemental I (atoms)	9.6100E+17	5.0470E+16
Organic I (atoms)	9.5332E+17	3.0126E+16
Aerosols (kg)	1.0421E-03	5.5798E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5499E+16
Elemental I (atoms)	0.0000E+00	7.2802E+13
Organic I (atoms)	0.0000E+00	2.2566E+12
Aerosols (kg)	0.0000E+00	8.2698E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.8902E+15
Elemental I (atoms)	1.0927E+10	3.3795E+08
Organic I (atoms)	1.1232E+10	3.4737E+08
Aerosols (kg)	1.1826E-11	3.6576E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	1.6684E+16	0.0000E+00
Elemental I (atoms)	6.7985E+13	0.0000E+00
Organic I (atoms)	2.1053E+12	0.0000E+00
Aerosols (kg)	7.8631E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	2.4408E-11	7.6758E-19	7.9698E+06	7.6996E+03
Co-60	2.9258E-11	2.5884E-17	2.5979E+08	9.2255E+03
Kr-85	2.7516E-04	7.0135E-10	4.9690E+15	1.2815E+11
Kr-85m	2.4425E-03	2.9679E-13	2.1027E+12	1.6014E+12
Kr-87	1.0286E-03	3.6314E-14	2.5136E+11	1.8261E+12
Kr-88	4.6506E-03	3.7089E-13	2.5381E+12	3.7697E+12
Rb-86	3.6654E-06	4.5048E-14	3.1545E+11	1.0770E+10
Sr-89	4.1349E-08	1.4233E-15	9.6305E+09	1.3047E+07
Sr-90	5.4490E-09	3.9947E-14	2.6730E+11	1.7181E+06
Sr-91	3.8501E-08	1.0621E-17	7.0287E+07	1.3278E+07
Sr-92	1.9313E-08	1.5365E-18	1.0057E+07	8.4530E+06
Y-90	2.1508E-10	3.9533E-19	2.6452E+06	4.6918E+04
Y-91	5.4926E-10	2.2397E-17	1.4822E+08	1.7022E+05
Y-92	1.1785E-08	1.2248E-18	8.0171E+06	2.7371E+06
Y-93	4.5104E-10	1.3519E-19	8.7541E+05	1.5471E+05
Zr-95	6.4097E-10	2.9836E-17	1.8913E+08	2.0221E+05
Zr-97	5.2760E-10	2.7599E-19	1.7134E+06	1.7489E+05
Nb-95	6.4338E-10	1.6453E-17	1.0430E+08	2.0285E+05
Mo-99	7.8803E-09	1.6431E-17	9.9946E+07	2.5165E+06
Tc-99m	7.2017E-09	1.3696E-18	8.3313E+06	2.2662E+06
Ru-103	7.1102E-09	2.2031E-16	1.2881E+09	2.2439E+06
Ru-105	2.7230E-09	4.0509E-19	2.3234E+06	1.0441E+06
Ru-106	3.1009E-09	9.2687E-16	5.2658E+09	9.7783E+05
Rh-105	4.6897E-09	5.5561E-18	3.1866E+07	1.4896E+06
Sb-127	7.9444E-09	2.9749E-17	1.4106E+08	2.5278E+06
Sb-129	1.3314E-08	2.3676E-18	1.1053E+07	5.1337E+06
Te-127	8.0652E-09	3.0560E-18	1.4491E+07	2.5375E+06
Te-127m	1.3879E-09	1.4714E-16	6.9772E+08	4.3761E+05
Te-129	1.6835E-08	8.0389E-19	3.7528E+06	5.9083E+06
Te-129m	4.5713E-09	1.5174E-16	7.0838E+08	1.4417E+06

Te-131m	1.5686E-08	1.9671E-17	9.0427E+07	5.0865E+06
Te-132	1.1914E-07	3.9242E-16	1.7903E+09	3.7970E+07
I-131	1.4930E-03	1.2043E-11	5.5361E+13	4.4108E+12
I-132	6.7915E-04	6.5796E-14	3.0018E+11	4.6359E+12
I-133	2.7587E-03	2.4352E-12	1.1027E+13	8.8357E+12
I-134	1.5206E-04	5.6999E-15	2.5616E+10	4.6000E+12
I-135	1.9583E-03	5.5762E-13	2.4874E+12	7.6391E+12
Xe-133	2.9021E-02	1.5504E-10	7.0202E+14	1.3658E+13
Xe-135	1.0742E-02	4.2065E-12	1.8764E+13	5.7161E+12
Cs-134	4.0340E-04	3.1179E-10	1.4012E+15	1.1805E+12
Cs-136	1.1964E-04	1.6325E-12	7.2286E+12	3.5218E+11
Cs-137	3.2467E-04	3.7326E-09	1.6408E+16	9.5000E+11
Ba-139	8.8129E-09	5.3878E-19	2.3343E+06	5.4967E+06
Ba-140	6.3379E-08	8.6573E-16	3.7240E+09	2.0039E+07
La-140	3.5888E-09	6.4566E-18	2.7773E+07	7.4939E+05
La-141	2.9691E-10	5.2500E-20	2.2423E+05	1.1689E+05
La-142	9.7414E-11	6.8050E-21	2.8860E+04	5.6115E+04
Ce-141	1.5064E-09	5.2869E-17	2.2581E+08	4.7535E+05
Ce-143	1.3407E-09	2.0189E-18	8.5021E+06	4.3365E+05
Ce-144	1.2115E-09	3.7984E-16	1.5885E+09	3.8203E+05
Pr-143	5.7145E-10	8.4862E-18	3.5738E+07	1.7955E+05
Nd-147	2.3416E-10	2.8945E-18	1.1858E+07	7.4068E+04
Np-239	1.6350E-08	7.0478E-17	1.7758E+08	5.2325E+06
Pu-238	4.8928E-12	2.8580E-16	7.2316E+08	1.5427E+03
Pu-239	4.2873E-13	6.8976E-15	1.7380E+10	1.3516E+02
Pu-240	8.0266E-13	3.5225E-15	8.8387E+09	2.5308E+02
Pu-241	1.7300E-10	1.6794E-15	4.1965E+09	5.4548E+04
Am-241	1.1599E-13	3.3796E-17	8.4449E+07	3.6561E+01
Cm-242	2.9399E-11	8.8704E-18	2.2074E+07	9.2717E+03
Cm-244	1.9442E-12	2.4032E-17	5.9313E+07	6.1303E+02

CR Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	5.6946E+15	0.0000E+00	
Elemental I (atoms)	3.3561E+12	0.0000E+00	
Organic I (atoms)	1.0643E+11	0.0000E+00	
Aerosols (kg)	4.0605E-09	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		7.0387E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		8.4628E-13
Total I (Ci)			7.0411E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5499E+16
Elemental I (atoms)	0.0000E+00	7.2802E+13
Organic I (atoms)	0.0000E+00	2.2566E+12
Aerosols (kg)	0.0000E+00	8.2698E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.8902E+15
Elemental I (atoms)	1.0927E+10	3.3795E+08
Organic I (atoms)	1.1232E+10	3.4737E+08
Aerosols (kg)	1.1826E-11	3.6576E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	1.6684E+16	0.0000E+00
Elemental I (atoms)	6.7985E+13	0.0000E+00
Organic I (atoms)	2.1053E+12	0.0000E+00
Aerosols (kg)	7.8631E-08	0.0000E+00

EAB Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.9340E-01	1.9000E-01	9.0311E-01

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Accumulated dose (rem)  1.4428E+00  8.1919E-01  1.4838E+00

LPZ Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6998E-02  7.8682E-03  3.7400E-02
Accumulated dose (rem)  2.5087E-01  2.5282E-01  2.6345E-01

CR Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3964E-04  1.1838E+00  5.3420E-02
Accumulated dose (rem)  4.8205E-03  2.3776E+01  1.0549E+00

DW Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms      Decay
Kr-85                  1.3511E+06  3.4437E+00  2.4398E+25  1.2338E+21
Kr-85m                 6.4586E+06  7.8481E-04  5.5603E+21  1.0525E+22
Kr-87                  5.7076E+05  2.0150E-05  1.3948E+20  5.8558E+21
Kr-88                  8.6023E+06  6.8603E-04  4.6947E+21  2.0430E+22
I-131                  3.0372E+04  2.4499E-04  1.1262E+21  1.7213E+20
I-132                  7.2199E+03  6.9946E-07  3.1911E+18  2.2629E+20
I-133                  4.9778E+04  4.3942E-05  1.9897E+20  3.4384E+20
I-134                  1.3265E+02  4.9725E-09  2.2347E+16  2.0749E+20
I-135                  2.6542E+04  7.5578E-06  3.3714E+19  2.9737E+20
Xe-133                 1.3924E+08  7.4385E-01  3.3681E+24  1.2956E+23
Xe-135                 3.7853E+07  1.4823E-02  6.6121E+22  4.5218E+22

DW Transport Group Inventory:
Time (h) =   8.0000    Atmosphere     Sump
Noble gases (atoms)    2.7843E+25  0.0000E+00
Elemental I (atoms)    7.1684E-06  4.8591E+22
Organic I (atoms)      1.3621E+21  0.0000E+00
Aerosols (kg)          7.7196E-27  4.8969E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          9.2924E-06
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.0865E-05
Total I (Ci)                                    1.1404E+05

DW to  RB Transport Group Inventory:
Time (h) =   8.0000  Leakage Transport

Noble gases (atoms)      1.1916E+23
Elemental I (atoms)      1.5872E+18
Organic I (atoms)        6.1891E+18
Aerosols (kg)            1.6727E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   8.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  3.9585E+22
Elemental I (atoms)    0.0000E+00  8.3566E+17
Organic I (atoms)      0.0000E+00  2.0848E+18
Aerosols (kg)          0.0000E+00  8.8083E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   8.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  3.9585E+22
Elemental I (atoms)    0.0000E+00  8.3566E+17
Organic I (atoms)      0.0000E+00  2.0848E+18
Aerosols (kg)          0.0000E+00  8.8083E-04

RB Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms      Decay
Co-58                  2.1988E-03  6.9148E-11  7.1797E+14  7.2969E+12
Co-60                  2.6399E-03  2.3354E-09  2.3440E+16  8.7452E+12
Kr-85                  2.2682E+03  5.7813E-03  4.0960E+22  1.4069E+18
Kr-85m                 1.0843E+04  1.3175E-06  9.3346E+18  1.0545E+19
Kr-87                  9.5820E+02  3.3828E-08  2.3416E+17  4.0545E+18
Kr-88                  1.4442E+04  1.1517E-06  7.8816E+18  1.8853E+19
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Rb-86	1.3259E-01	1.6296E-09	1.1411E+16	5.3060E+14
Sr-89	3.7225E+00	1.2813E-07	8.6700E+17	1.2363E+16
Sr-90	4.9168E-01	3.6045E-06	2.4119E+19	1.6287E+15
Sr-91	2.5947E+00	7.1578E-10	4.7369E+15	1.2082E+16
Sr-92	6.2644E-01	4.9839E-11	3.2623E+14	7.2928E+15
Y-90	3.9267E-02	7.2173E-11	4.8293E+14	5.4205E+13
Y-91	5.1929E-02	2.1175E-09	1.4013E+16	1.6255E+14
Y-92	1.0393E+00	1.0801E-10	7.0702E+14	2.5554E+15
Y-93	3.0929E-02	9.2703E-12	6.0029E+13	1.4107E+14
Zr-95	5.7732E-02	2.6874E-09	1.7035E+16	1.9163E+14
Zr-97	4.0403E-02	2.1135E-11	1.3122E+14	1.6175E+14
Nb-95	5.8051E-02	1.4846E-09	9.4108E+15	1.9229E+14
Mo-99	6.8181E-01	1.4216E-09	8.6475E+15	2.3696E+15
Tc-99m	6.3710E-01	1.2116E-10	7.3702E+14	2.1424E+15
Ru-103	6.3969E-01	1.9821E-08	1.1589E+17	2.1261E+15
Ru-105	1.3159E-01	1.9576E-11	1.1228E+14	9.1999E+14
Ru-106	2.7972E-01	8.3608E-08	4.7500E+17	9.2688E+14
Rh-105	4.0499E-01	4.7982E-10	2.7519E+15	1.4032E+15
Sb-127	6.9566E-01	2.6050E-09	1.2352E+16	2.3847E+15
Sb-129	6.3232E-01	1.1244E-10	5.2493E+14	4.5177E+15
Te-127	7.2165E-01	2.7345E-10	1.2966E+15	2.4027E+15
Te-127m	1.2524E-01	1.3277E-08	6.2959E+16	4.1483E+14
Te-129	9.5617E-01	4.5657E-11	2.1314E+14	5.2646E+15
Te-129m	4.1174E-01	1.3667E-08	6.3804E+16	1.3663E+15
Te-131m	1.2904E+00	1.6183E-09	7.4393E+15	4.7529E+15
Te-132	1.0376E+01	3.4176E-08	1.5592E+17	3.5790E+16
I-131	1.1232E+02	9.0597E-07	4.1648E+18	2.7464E+17
I-132	3.2186E+01	3.1181E-09	1.4226E+16	2.3346E+17
I-133	1.8410E+02	1.6251E-07	7.3584E+17	5.1870E+17
I-134	4.9058E-01	1.8390E-11	8.2647E+13	1.1555E+17
I-135	9.8161E+01	2.7951E-08	1.2469E+17	3.9404E+17
Xe-133	2.3374E+05	1.2487E-03	5.6542E+21	1.4711E+20
Xe-135	6.3510E+04	2.4870E-05	1.1094E+20	4.8460E+19
Cs-134	1.4681E+01	1.1347E-05	5.0995E+19	5.8308E+16
Cs-136	4.3167E+00	5.8898E-08	2.6080E+17	1.7331E+16
Cs-137	1.1817E+01	1.3586E-04	5.9720E+20	4.6926E+16
Ba-139	1.0638E-01	6.5039E-12	2.8178E+13	4.7774E+15
Ba-140	5.6673E+00	7.7413E-08	3.3299E+17	1.8968E+16
La-140	6.7823E-01	1.2202E-09	5.2488E+15	8.8500E+14
La-141	1.3231E-02	2.3396E-12	9.9923E+12	1.0241E+14
La-142	1.4553E-03	1.0166E-13	4.3113E+11	4.8422E+13
Ce-141	1.3552E-01	4.7561E-09	2.0313E+16	4.5041E+14
Ce-143	1.1123E-01	1.6749E-10	7.0535E+14	4.0572E+14
Ce-144	1.0927E-01	3.4260E-08	1.4328E+17	3.6212E+14
Pr-143	5.2105E-02	7.7378E-10	3.2586E+15	1.7047E+14
Nd-147	2.0908E-02	2.5845E-10	1.0588E+15	7.0093E+13
Np-239	1.4047E+00	6.0550E-09	1.5257E+16	4.9216E+15
Pu-238	4.4150E-04	2.5789E-08	6.5255E+16	1.4624E+12
Pu-239	3.8705E-05	6.2270E-07	1.5690E+18	1.2813E+11
Pu-240	7.2426E-05	3.1784E-07	7.9754E+17	2.3991E+11
Pu-241	1.5610E-02	1.5153E-07	3.7865E+17	5.1708E+13
Am-241	1.0478E-05	3.0528E-09	7.6284E+15	3.4664E+10
Cm-242	2.6509E-03	7.9984E-10	1.9904E+15	8.7881E+12
Cm-244	1.7543E-04	2.1684E-09	5.3519E+15	5.8112E+11

RB Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	4.6743E+22	0.0000E+00	
Elemental I (atoms)	1.3318E+17	0.0000E+00	
Organic I (atoms)	2.2978E+18	0.0000E+00	
Aerosols (kg)	1.5300E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.3508E-09
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.0919E-09
Total I (Ci)			4.2725E+02

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	6.1891E+18
Aerosols (kg)	1.6727E-03

RB to Environment Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.2187E+22
Elemental I (atoms)	1.3344E+18	6.2018E+16
Organic I (atoms)	3.6316E+18	1.1296E+17
Aerosols (kg)	1.4587E-03	6.8682E-05

Environment Integral Nuclide Release:

Time (h) = 8.0000	Ci	kg	Atoms	Bq
Co-58	5.5098E-04	1.7328E-11	1.7991E+14	2.0386E+07
Co-60	6.6036E-04	5.8419E-10	5.8635E+15	2.4433E+07
Kr-85	3.4936E+03	8.9046E-03	6.3088E+22	1.2926E+14
Kr-85m	2.5898E+04	3.1470E-06	2.2296E+19	9.5823E+14
Kr-87	9.6570E+03	3.4093E-07	2.3599E+18	3.5731E+14
Kr-88	4.5990E+04	3.6677E-06	2.5099E+19	1.7016E+15
Rb-86	6.0984E-02	7.4950E-10	5.2483E+15	2.2564E+09
Sr-89	9.3350E-01	3.2132E-08	2.1742E+17	3.4540E+10
Sr-90	1.2298E-01	9.0160E-07	6.0328E+18	4.5504E+09
Sr-91	9.0729E-01	2.5029E-10	1.6563E+15	3.3570E+10
Sr-92	5.4018E-01	4.2975E-11	2.8131E+14	1.9986E+10
Y-90	4.2576E-03	7.8256E-12	5.2363E+13	1.5753E+08
Y-91	1.2297E-02	5.0145E-10	3.3184E+15	4.5500E+08
Y-92	2.0360E-01	2.1159E-11	1.3850E+14	7.5331E+09
Y-93	1.0597E-02	3.1763E-12	2.0568E+13	3.9209E+08
Zr-95	1.4470E-02	6.7354E-10	4.2696E+15	5.3538E+08
Zr-97	1.2177E-02	6.3696E-12	3.9545E+13	4.5053E+08
Nb-95	1.4521E-02	3.7135E-10	2.3540E+15	5.3728E+08
Mo-99	1.7879E-01	3.7278E-10	2.2676E+15	6.6152E+09
Tc-99m	1.6262E-01	3.0926E-11	1.8812E+14	6.0169E+09
Ru-103	1.6053E-01	4.9741E-09	2.9082E+16	5.9397E+09
Ru-105	6.8655E-02	1.0213E-11	5.8578E+13	2.5402E+09
Ru-106	6.9990E-02	2.0920E-08	1.1885E+17	2.5896E+09
Rh-105	1.0597E-01	1.2554E-10	7.2005E+14	3.9208E+09
Sb-127	1.7997E-01	6.7391E-10	3.1956E+15	6.6589E+09
Sb-129	3.3702E-01	5.9933E-11	2.7978E+14	1.2470E+10
Te-127	1.8205E-01	6.8984E-11	3.2711E+14	6.7360E+09
Te-127m	3.1325E-02	3.3209E-09	1.5747E+16	1.1590E+09
Te-129	4.0398E-01	1.9290E-11	9.0053E+13	1.4947E+10
Te-129m	1.0317E-01	3.4248E-09	1.5988E+16	3.8174E+09
Te-131m	3.5827E-01	4.4930E-10	2.0655E+15	1.3256E+10
Te-132	2.7007E+00	8.8958E-09	4.0585E+16	9.9926E+10
I-131	2.9287E+01	2.3624E-07	1.0860E+18	1.0836E+12
I-132	2.9237E+01	2.8325E-09	1.2922E+16	1.0818E+12
I-133	5.6752E+01	5.0098E-08	2.2684E+17	2.0998E+12
I-134	2.4998E+01	9.3709E-10	4.2114E+15	9.2494E+11
I-135	4.5952E+01	1.3085E-08	5.8369E+16	1.7002E+12
Xe-133	3.6516E+05	1.9508E-03	8.8332E+21	1.3511E+16
Xe-135	1.1969E+05	4.6867E-05	2.0907E+20	4.4284E+15
Cs-134	6.6926E+00	5.1727E-06	2.3247E+19	2.4763E+11
Cs-136	1.9931E+00	2.7194E-08	1.2042E+17	7.3745E+10
Cs-137	5.3860E+00	6.1921E-05	2.7219E+20	1.9928E+11
Ba-139	3.4759E-01	2.1250E-11	9.2067E+13	1.2861E+10
Ba-140	1.4320E+00	1.9561E-08	8.4142E+16	5.2985E+10
La-140	6.9848E-02	1.2566E-10	5.4055E+14	2.5844E+09
La-141	7.6308E-03	1.3493E-12	5.7629E+12	2.8234E+08
La-142	3.5363E-03	2.4703E-13	1.0476E+12	1.3084E+08
Ce-141	3.4009E-02	1.1936E-09	5.0978E+15	1.2583E+09
Ce-143	3.0588E-02	4.6060E-11	1.9397E+14	1.1317E+09
Ce-144	2.7344E-02	8.5733E-09	3.5854E+16	1.0117E+09
Pr-143	1.2879E-02	1.9125E-10	8.0541E+14	4.7651E+08
Nd-147	5.2918E-03	6.5412E-11	2.6797E+14	1.9580E+08
Np-239	3.7129E-01	1.6005E-09	4.0327E+15	1.3738E+10
Pu-238	1.1043E-04	6.4505E-09	1.6322E+16	4.0859E+06
Pu-239	9.6757E-06	1.5567E-07	3.9224E+17	3.5800E+05
Pu-240	1.8116E-05	7.9502E-08	1.9949E+17	6.7028E+05
Pu-241	3.9046E-03	3.7904E-08	9.4714E+16	1.4447E+08
Am-241	2.6176E-06	7.6266E-10	1.9058E+15	9.6851E+04
Cm-242	6.6359E-04	2.0022E-10	4.9825E+14	2.4553E+07

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Cm-244                 4.3881E-05  5.4240E-10  1.3387E+15  1.6236E+06

Environment Transport Group Inventory:

                          Total      Release
Time (h) =   8.0000      Release     Rate/s
Noble gases (atoms)    7.2180E+22  2.5062E+18
Elemental I (atoms)    6.1956E+16  2.1512E+12
Organic I (atoms)      1.1281E+17  3.9172E+12
Aerosols (kg)          6.8679E-05  2.3847E-09
Dose Effective (Ci) I-131 (Thyroid)            4.0263E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      4.9760E+01
Total I  (Ci)                                  1.8623E+02

RB to Environment Transport Group Inventory:

                          Pathway
Time (h) =   8.0000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.2187E+22
Elemental I (atoms)    1.3344E+18  6.2018E+16
Organic I (atoms)      3.6316E+18  1.1296E+17
Aerosols (kg)          1.4587E-03  6.8682E-05

Environment to CR Unfiltered Transport Group Inventory:

                          Pathway
Time (h) =   8.0000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.5054E+16
Elemental I (atoms)    0.0000E+00  7.2804E+13
Organic I (atoms)      0.0000E+00  2.2711E+12
Aerosols (kg)          0.0000E+00  8.2701E-08

Environment to  CR Filtered Transport Group Inventory:

                          Pathway
Time (h) =   8.0000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.8388E+16
Elemental I (atoms)    1.5333E+10  4.7421E+08
Organic I (atoms)      4.2834E+10  1.3248E+09
Aerosols (kg)          1.6741E-11  5.1778E-13

CR to  Environment - Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   8.0000      Filtered   Transported
Noble gases (atoms)    4.2836E+16  0.0000E+00
Elemental I (atoms)    7.1148E+13  0.0000E+00
Organic I (atoms)      2.2158E+12  0.0000E+00
Aerosols (kg)          8.2508E-08  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   8.0000        Ci           kg          Atoms       Decay
Co-58                  8.8715E-12  2.7900E-19  2.8968E+06  1.6236E+04
Co-60                  1.0651E-11  9.4228E-18  9.4575E+07  1.9465E+04
Kr-85                  5.1250E-04  1.3063E-09  9.2549E+15  3.4820E+11
Kr-85m                 2.4499E-03  2.9770E-13  2.1091E+12  3.0147E+12
Kr-87                  2.1650E-04  7.6434E-15  5.2908E+10  2.1275E+12
Kr-88                  3.2631E-03  2.6023E-13  1.7808E+12  6.0337E+12
Rb-86                  1.6637E-07  2.0447E-15  1.4318E+10  1.1350E+10
Sr-89                  1.5019E-08  5.1698E-16  3.4981E+09  2.7504E+07
Sr-90                  1.9838E-09  1.4543E-14  9.7312E+10  3.6251E+06
Sr-91                  1.0469E-08  2.8880E-18  1.9112E+07  2.5250E+07
Sr-92                  2.5275E-09  2.0109E-19  1.3163E+06  1.3043E+07
Y-90                   1.5852E-10  2.9136E-19  1.9496E+06  1.5340E+05
Y-91                   2.0953E-10  8.5440E-18  5.6542E+07  3.6636E+05
Y-92                   4.1967E-09  4.3614E-19  2.8549E+06  7.0436E+06
Y-93                   1.2479E-10  3.7403E-20  2.4220E+05  2.9593E+05
Zr-95                  2.3293E-10  1.0843E-17  6.8733E+07  4.2636E+05
Zr-97                  1.6302E-10  8.5274E-20  5.2942E+05  3.4752E+05
Nb-95                  2.3422E-10  5.9898E-18  3.7970E+07  4.2800E+05
Mo-99                  2.7509E-09  5.7357E-18  3.4890E+07  5.2268E+06
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Tc-99m	2.5705E-09	4.8885E-19	2.9737E+06	4.7542E+06
Ru-103	2.5810E-09	7.9971E-17	4.6757E+08	4.7292E+06
Ru-105	5.3093E-10	7.8984E-20	4.5300E+05	1.7898E+06
Ru-106	1.1286E-09	3.3734E-16	1.9165E+09	2.0629E+06
Rh-105	1.6340E-09	1.9359E-18	1.1103E+07	3.1032E+06
Sb-127	2.8068E-09	1.0510E-17	4.9838E+07	5.2737E+06
Sb-129	2.5512E-09	4.5368E-19	2.1179E+06	8.7567E+06
Te-127	2.9117E-09	1.1033E-18	5.2316E+06	5.3412E+06
Te-127m	5.0530E-10	5.3570E-17	2.5402E+08	9.2334E+05
Te-129	3.8579E-09	1.8421E-19	8.5997E+05	1.0688E+07
Te-129m	1.6612E-09	5.5144E-17	2.5743E+08	3.0404E+06
Te-131m	5.2065E-09	6.5293E-18	3.0015E+07	1.0371E+07
Te-132	4.1863E-08	1.3789E-16	6.2909E+08	7.9055E+07
I-131	6.7352E-05	5.4327E-13	2.4975E+12	4.6464E+12
I-132	9.3661E-06	9.0738E-16	4.1397E+09	4.7159E+12
I-133	1.1049E-04	9.7540E-14	4.4165E+11	9.2572E+12
I-134	2.9445E-07	1.1038E-17	4.9605E+07	4.6124E+12
I-135	5.8916E-05	1.6776E-14	7.4837E+10	7.9167E+12
Xe-133	5.2817E-02	2.8217E-10	1.2776E+15	3.6569E+13
Xe-135	1.4368E-02	5.6264E-12	2.5098E+13	1.2867E+13
Cs-134	1.8421E-05	1.4238E-11	6.3986E+13	1.2444E+12
Cs-136	5.4163E-06	7.3902E-14	3.2724E+11	3.7108E+11
Cs-137	1.4828E-05	1.7047E-10	7.4934E+14	1.0014E+12
Ba-139	4.2923E-10	2.6241E-20	1.1369E+05	7.0374E+06
Ba-140	2.2866E-08	3.1234E-16	1.3435E+09	4.2136E+07
La-140	2.7380E-09	4.9261E-18	2.1190E+07	2.5658E+06
La-141	5.3384E-11	9.4395E-21	4.0316E+04	1.9582E+05
Ce-141	5.4678E-10	1.9190E-17	8.1959E+07	1.0019E+06
Ce-143	4.4877E-10	6.7577E-19	2.8459E+06	8.8685E+05
Ce-144	4.4088E-10	1.3823E-16	5.7808E+08	8.0595E+05
Pr-143	2.1023E-10	3.1220E-18	1.3148E+07	3.8039E+05
Nd-147	8.4358E-11	1.0428E-18	4.2719E+06	1.5566E+05
Np-239	5.6676E-09	2.4430E-17	6.1558E+07	1.0839E+07
Pu-238	1.7813E-12	1.0405E-16	2.6328E+08	3.2551E+03
Pu-239	1.5616E-13	2.5124E-15	6.3306E+09	2.8523E+02
Pu-240	2.9222E-13	1.2824E-15	3.2179E+09	5.3399E+02
Pu-241	6.2982E-11	6.1140E-16	1.5278E+09	1.1509E+05
Am-241	4.2275E-14	1.2317E-17	3.0778E+07	7.7173E+01
Cm-242	1.0696E-11	3.2271E-18	8.0307E+06	1.9558E+04
Cm-244	7.0782E-13	8.7491E-18	2.1593E+07	1.2935E+03

CR Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	1.0562E+16	0.0000E+00	
Elemental I (atoms)	1.4613E+11	0.0000E+00	
Organic I (atoms)	9.6254E+09	0.0000E+00	
Aerosols (kg)	1.8543E-10	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.0596E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5710E-14
Total I (Ci)			2.4642E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5054E+16
Elemental I (atoms)	0.0000E+00	7.2804E+13
Organic I (atoms)	0.0000E+00	2.2711E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.8388E+16
Elemental I (atoms)	1.5333E+10	4.7421E+08
Organic I (atoms)	4.2834E+10	1.3248E+09
Aerosols (kg)	1.6741E-11	5.1778E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway

```
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    4.2836E+16  0.0000E+00
Elemental I (atoms)    7.1148E+13  0.0000E+00
Organic I (atoms)      2.2158E+12  0.0000E+00
Aerosols (kg)          8.2508E-08  0.0000E+00

EAB Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3606E+00  2.5878E-01  1.3700E+00
Accumulated dose (rem)  2.8034E+00  1.0780E+00  2.8537E+00

LPZ Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.4746E-02  2.4205E-03  2.4834E-02
Accumulated dose (rem)  2.7562E-01  2.5524E-01  2.8828E-01

CR Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.5625E-04  5.4973E-02  3.2299E-03
Accumulated dose (rem)  5.5768E-03  2.3831E+01  1.0582E+00

DW Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms      Decay
Kr-85                  1.3294E+06  3.3884E+00  2.4006E+25  4.0890E+21
Kr-85m                 5.3460E+05  6.4962E-05  4.6025E+20  1.5591E+22
Kr-87                  9.1606E+01  3.2340E-09  2.2386E+16  5.9950E+21
Kr-88                  1.7048E+05  1.3596E-05  9.3040E+19  2.5011E+22
I-131                  2.8218E+04  2.2761E-04  1.0463E+21  2.3452E+20
I-132                  5.7202E+01  5.5417E-09  2.5282E+16  2.2945E+20
I-133                  2.8739E+04  2.5370E-05  1.1487E+20  4.2543E+20
I-134                  4.1843E-04  1.5685E-14  7.0491E+10  2.0751E+20
I-135                  4.8783E+03  1.3891E-06  6.1965E+18  3.2461E+20
Xe-133                 1.2546E+08  6.7024E-01  3.0348E+24  4.1126E+23
Xe-135                 1.1002E+07  4.3084E-03  1.9219E+22  9.1517E+22

DW Transport Group Inventory:
Time (h) =  24.0000    Atmosphere     Sump
Noble gases (atoms)    2.7061E+25  0.0000E+00
Elemental I (atoms)    6.1437E-06  4.8591E+22
Organic I (atoms)      1.1674E+21  0.0000E+00
Aerosols (kg)          7.5907E-27  4.8969E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          7.8028E-06
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    8.5479E-06
Total I (Ci)                                    6.1892E+04

DW to  RB Transport Group Inventory:
Time (h) =  24.0000  Leakage Transport

Noble gases (atoms)      3.9365E+23
Elemental I (atoms)      1.5872E+18
Organic I (atoms)        1.8783E+19
Aerosols (kg)            1.6727E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =  24.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.2356E+23
Elemental I (atoms)    0.0000E+00  8.3566E+17
Organic I (atoms)      0.0000E+00  5.9376E+18
Aerosols (kg)          0.0000E+00  8.8083E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =  24.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.2356E+23
Elemental I (atoms)    0.0000E+00  8.3566E+17
Organic I (atoms)      0.0000E+00  5.9376E+18
Aerosols (kg)          0.0000E+00  8.8083E-04
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RB Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	1.0405E-05	3.2723E-13	3.3976E+12	8.1299E+12
Co-60	1.2571E-05	1.1121E-11	1.1162E+14	9.7464E+12
Kr-85	2.4926E+03	6.3532E-03	4.5011E+22	6.6621E+18
Kr-85m	1.0024E+03	1.2180E-07	8.6294E+17	1.9712E+19
Kr-87	1.7176E-01	6.0637E-12	4.1973E+13	4.2989E+18
Kr-88	3.1964E+02	2.5491E-08	1.7445E+17	2.7068E+19
Rb-86	6.1612E-04	7.5721E-12	5.3023E+13	5.8068E+14
Sr-89	1.7570E-02	6.0476E-10	4.0921E+15	1.3772E+16
Sr-90	2.3419E-03	1.7168E-08	1.1488E+17	1.8152E+15
Sr-91	3.8458E-03	1.0609E-12	7.0209E+12	1.2899E+16
Sr-92	4.9829E-05	3.9643E-15	2.5950E+10	7.4307E+15
Y-90	5.3139E-04	9.7670E-13	6.5353E+12	7.3882E+13
Y-91	2.6948E-04	1.0988E-11	7.2719E+13	1.8267E+14
Y-92	4.9520E-04	5.1463E-14	3.3687E+11	2.8575E+15
Y-93	4.9134E-05	1.4727E-14	9.5363E+10	1.5091E+14
Zr-95	2.7301E-04	1.2708E-11	8.0559E+13	2.1350E+14
Zr-97	9.9843E-05	5.2228E-14	3.2425E+11	1.7550E+14
Nb-95	2.7644E-04	7.0696E-12	4.4815E+13	2.1431E+14
Mo-99	2.7453E-03	5.7239E-12	3.4819E+13	2.6208E+15
Tc-99m	2.7503E-03	5.2304E-13	3.1817E+12	2.3767E+15
Ru-103	3.0114E-03	9.3306E-11	5.4554E+14	2.3682E+15
Ru-105	5.1562E-05	7.6706E-15	4.3994E+10	9.5466E+14
Ru-106	1.3307E-03	3.9774E-10	2.2597E+15	1.0329E+15
Rh-105	1.4684E-03	1.7397E-12	9.9777E+12	1.5506E+15
Sb-127	2.9388E-03	1.1005E-11	5.2182E+13	2.6431E+15
Sb-129	2.3116E-04	4.1106E-14	1.9190E+11	4.6829E+15
Te-127	3.2803E-03	1.2430E-12	5.8940E+12	2.6718E+15
Te-127m	5.9639E-04	6.3227E-11	2.9981E+14	4.6233E+14
Te-129	2.0001E-03	9.5506E-14	4.4585E+11	5.5376E+15
Te-129m	1.9376E-03	6.4319E-11	3.0026E+14	1.5222E+15
Te-131m	4.2470E-03	5.3260E-12	2.4484E+13	5.2127E+15
Te-132	4.2886E-02	1.4126E-10	6.4447E+14	3.9630E+16
I-131	5.3183E+01	4.2898E-07	1.9721E+18	4.1244E+17
I-132	1.5855E-01	1.5360E-11	7.0077E+13	2.4488E+17
I-133	5.4166E+01	4.7815E-08	2.1650E+17	7.0324E+17
I-134	7.8863E-07	2.9563E-17	1.3286E+08	1.1562E+17
I-135	9.1943E+00	2.6181E-09	1.1679E+16	4.5933E+17
Xe-133	2.3523E+05	1.2567E-03	5.6902E+21	6.6530E+20
Xe-135	2.0629E+04	8.0781E-06	3.6035E+19	1.3297E+20
Cs-134	6.9886E-02	5.4015E-08	2.4275E+17	6.3876E+16
Cs-136	1.9849E-02	2.7082E-10	1.1992E+15	1.8958E+16
Cs-137	5.6286E-02	6.4710E-07	2.8445E+18	5.1408E+16
Ba-139	1.6231E-07	9.9232E-18	4.2992E+07	4.7940E+15
Ba-140	2.6033E-02	3.5560E-10	1.5296E+15	2.1104E+16
La-140	8.8705E-03	1.5959E-11	6.8648E+13	1.2240E+15
La-141	3.7491E-06	6.6293E-16	2.8314E+09	1.0576E+14
La-142	5.2076E-09	3.6378E-19	1.5428E+06	4.8664E+13
Ce-141	6.3668E-04	2.2345E-11	9.5435E+13	5.0168E+14
Ce-143	3.7858E-04	5.7008E-13	2.4008E+12	4.4556E+14
Ce-144	5.1964E-04	1.6292E-10	6.8135E+14	4.0356E+14
Pr-143	2.5494E-04	3.7860E-12	1.5944E+13	1.9034E+14
Nd-147	9.5485E-05	1.1803E-12	4.8354E+12	7.7965E+13
Np-239	5.4988E-03	2.3703E-11	5.9724E+13	5.4367E+15
Pu-238	2.1031E-06	1.2285E-10	3.1084E+14	1.6299E+12
Pu-239	1.8468E-07	2.9712E-09	7.4865E+15	1.4282E+11
Pu-240	3.4498E-07	1.5140E-09	3.7989E+15	2.6738E+11
Pu-241	7.4347E-05	7.2172E-10	1.8034E+15	5.7628E+13
Am-241	5.0125E-08	1.4604E-11	3.6494E+13	3.8640E+10
Cm-242	1.2591E-05	3.7990E-12	9.4537E+12	9.7930E+12
Cm-244	8.3556E-07	1.0328E-11	2.5490E+13	6.4766E+11

RB Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	5.0739E+22	0.0000E+00	
Elemental I (atoms)	5.5272E+14	0.0000E+00	
Organic I (atoms)	2.1889E+18	0.0000E+00	
Aerosols (kg)	7.2830E-07	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.8616E-09

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 2.0394E-09
Total I (Ci) 1.1670E+02

DW to RB Transport Group Inventory:
Time (h) = 24.0000 Leakage Transport

Noble gases (atoms) 3.9365E+23
Elemental I (atoms) 1.5872E+18
Organic I (atoms) 1.8783E+19
Aerosols (kg) 1.6727E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.4206E+23
Elemental I (atoms)	1.4595E+18	6.5886E+16
Organic I (atoms)	1.5644E+19	4.8448E+17
Aerosols (kg)	1.6063E-03	7.3249E-05

Environment Integral Nuclide Release:

Time (h) = 24.0000	Ci	kg	Atoms	Bq
Co-58	6.1655E-04	1.9390E-11	2.0132E+14	2.2812E+07
Co-60	7.3918E-04	6.5392E-10	6.5633E+15	2.7350E+07
Kr-85	1.6671E+04	4.2492E-02	3.0105E+23	6.1684E+14
Kr-85m	4.8025E+04	5.8357E-06	4.1345E+19	1.7769E+15
Kr-87	1.0243E+04	3.6161E-07	2.5031E+18	3.7898E+14
Kr-88	6.5679E+04	5.2379E-06	3.5845E+19	2.4301E+15
Rb-86	6.4925E-02	7.9792E-10	5.5874E+15	2.4022E+09
Sr-89	1.0445E+00	3.5951E-08	2.4326E+17	3.8645E+10
Sr-90	1.3766E-01	1.0092E-06	6.7529E+18	5.0936E+09
Sr-91	9.7056E-01	2.6774E-10	1.7718E+15	3.5911E+10
Sr-92	5.5061E-01	4.3806E-11	2.8674E+14	2.0373E+10
Y-90	5.8643E-03	1.0779E-11	7.2123E+13	2.1698E+08
Y-91	1.3886E-02	5.6622E-10	3.7471E+15	5.1378E+08
Y-92	2.2695E-01	2.3586E-11	1.5439E+14	8.3971E+09
Y-93	1.1360E-02	3.4048E-12	2.2048E+13	4.2030E+08
Zr-95	1.6191E-02	7.5367E-10	4.7776E+15	5.9907E+08
Zr-97	1.3248E-02	6.9300E-12	4.3024E+13	4.9017E+08
Nb-95	1.6254E-02	4.1567E-10	2.6350E+15	6.0140E+08
Mo-99	1.9851E-01	4.1390E-10	2.5177E+15	7.3450E+09
Tc-99m	1.8128E-01	3.4476E-11	2.0971E+14	6.7074E+09
Ru-103	1.7959E-01	5.5645E-09	3.2534E+16	6.6448E+09
Ru-105	7.1305E-02	1.0608E-11	6.0839E+13	2.6383E+09
Ru-106	7.8339E-02	2.3416E-08	1.3303E+17	2.8986E+09
Rh-105	1.1753E-01	1.3924E-10	7.9859E+14	4.3484E+09
Sb-127	2.0027E-01	7.4994E-10	3.5561E+15	7.4101E+09
Sb-129	3.4965E-01	6.2177E-11	2.9026E+14	1.2937E+10
Te-127	2.0341E-01	7.7077E-11	3.6549E+14	7.5263E+09
Te-127m	3.5064E-02	3.7174E-09	1.7627E+16	1.2974E+09
Te-129	4.2637E-01	2.0359E-11	9.5043E+13	1.5776E+10
Te-129m	1.1544E-01	3.8320E-09	1.7889E+16	4.2713E+09
Te-131m	3.9425E-01	4.9442E-10	2.2729E+15	1.4587E+10
Te-132	3.0023E+00	9.8893E-09	4.5117E+16	1.1109E+11
I-131	3.9722E+01	3.2040E-07	1.4729E+18	1.4697E+12
I-132	3.0103E+01	2.9164E-09	1.3305E+16	1.1138E+12
I-133	7.0605E+01	6.2327E-08	2.8221E+17	2.6124E+12
I-134	2.5004E+01	9.3728E-10	4.2123E+15	9.2513E+11
I-135	5.0781E+01	1.4460E-08	6.4504E+16	1.8789E+12
Xe-133	1.6619E+06	8.8788E-03	4.0202E+22	6.1492E+16
Xe-135	3.2666E+05	1.2792E-04	5.7062E+20	1.2087E+16
Cs-134	7.1309E+00	5.5115E-06	2.4769E+19	2.6384E+11
Cs-136	2.1211E+00	2.8941E-08	1.2815E+17	7.8481E+10
Cs-137	5.7388E+00	6.5977E-05	2.9002E+20	2.1234E+11
Ba-139	3.4883E-01	2.1326E-11	9.2394E+13	1.2907E+10
Ba-140	1.6001E+00	2.1856E-08	9.4016E+16	5.9203E+10
La-140	9.7525E-02	1.7546E-10	7.5474E+14	3.6084E+09
La-141	7.8865E-03	1.3945E-12	5.9560E+12	2.9180E+08
La-142	3.5544E-03	2.4830E-13	1.0530E+12	1.3151E+08
Ce-141	3.8045E-02	1.3352E-09	5.7028E+15	1.4077E+09
Ce-143	3.3708E-02	5.0758E-11	2.1376E+14	1.2472E+09

Ce-144	3.0606E-02	9.5958E-09	4.0130E+16	1.1324E+09
Pr-143	1.4445E-02	2.1451E-10	9.0334E+14	5.3445E+08
Nd-147	5.9110E-03	7.3067E-11	2.9933E+14	2.1871E+08
Np-239	4.1172E-01	1.7747E-09	4.4718E+15	1.5234E+10
Pu-238	1.2361E-04	7.2205E-09	1.8270E+16	4.5736E+06
Pu-239	1.0832E-05	1.7427E-07	4.3910E+17	4.0077E+05
Pu-240	2.0278E-05	8.8992E-08	2.2330E+17	7.5029E+05
Pu-241	4.3706E-03	4.2428E-08	1.0602E+17	1.6171E+08
Am-241	2.9307E-06	8.5389E-10	2.1337E+15	1.0844E+05
Cm-242	7.4270E-04	2.2409E-10	5.5764E+14	2.7480E+07
Cm-244	4.9119E-05	6.0714E-10	1.4985E+15	1.8174E+06

Environment Transport Group Inventory:

Time (h) = 24.0000	Total Release	Release Rate/s	
Noble gases (atoms)	3.4191E+23	3.9572E+18	
Elemental I (atoms)	6.5814E+16	7.6174E+11	
Organic I (atoms)	4.8217E+17	5.5807E+12	
Aerosols (kg)	7.3246E-05	8.4776E-10	
Dose Effective (Ci) I-131 (Thyroid)			5.3148E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			6.4331E+01
Total I (Ci)			2.1621E+02

RB to Environment Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.4206E+23
Elemental I (atoms)	1.4595E+18	6.5886E+16
Organic I (atoms)	1.5644E+19	4.8448E+17
Aerosols (kg)	1.6063E-03	7.3249E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9443E+16
Elemental I (atoms)	0.0000E+00	7.2805E+13
Organic I (atoms)	0.0000E+00	2.3184E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0576E+17
Elemental I (atoms)	1.6409E+10	5.0748E+08
Organic I (atoms)	1.4616E+11	4.5203E+09
Aerosols (kg)	1.8012E-11	5.5706E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	1.5595E+17	0.0000E+00
Elemental I (atoms)	7.1293E+13	0.0000E+00
Organic I (atoms)	2.2715E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	3.2398E-14	1.0189E-21	1.0579E+04	1.9162E+04
Co-60	3.9143E-14	3.4628E-20	3.4756E+05	2.2982E+04
Kr-85	4.4709E-04	1.1396E-09	8.0736E+15	1.3008E+12
Kr-85m	1.7979E-04	2.1847E-14	1.5478E+11	4.7070E+12
Kr-87	3.0808E-08	1.0876E-18	7.5286E+06	2.1749E+12
Kr-88	5.7333E-05	4.5723E-15	3.1290E+10	7.5694E+12
Rb-86	2.6143E-12	3.2130E-20	2.2499E+05	1.1377E+10
Sr-89	5.4706E-11	1.8830E-18	1.2741E+07	3.2456E+07
Sr-90	7.2917E-12	5.3455E-17	3.5768E+08	4.2802E+06

Sr-91	1.1974E-11	3.3033E-21	2.1860E+04	2.8153E+07
Y-90	1.6545E-12	3.0411E-21	2.0349E+04	2.2151E+05
Y-91	8.3906E-13	3.4214E-20	2.2642E+05	4.3697E+05
Zr-95	8.5005E-13	3.9569E-20	2.5083E+05	5.0319E+05
Nb-95	8.6074E-13	2.2012E-20	1.3954E+05	5.0534E+05
Mo-99	8.5478E-12	1.7822E-20	1.0841E+05	6.1109E+06
Ru-103	9.3762E-12	2.9052E-19	1.6986E+06	5.5799E+06
Ru-106	4.1433E-12	1.2384E-18	7.0358E+06	2.4355E+06
Rh-105	4.5720E-12	5.4167E-21	3.1067E+04	3.6223E+06
Sb-127	9.1503E-12	3.4264E-20	1.6248E+05	6.1827E+06
Te-127	1.0214E-11	3.8701E-21	1.8352E+04	6.2875E+06
Te-127m	1.8569E-12	1.9686E-19	9.3350E+05	1.0902E+06
Te-129m	6.0331E-12	2.0027E-19	9.3491E+05	3.5881E+06
Te-131m	1.3223E-11	1.6583E-20	7.6233E+04	1.1992E+07
Te-132	1.3353E-10	4.3984E-19	2.0067E+06	9.2566E+07
I-131	9.4642E-08	7.6340E-16	3.5094E+09	4.6577E+12
I-132	3.4961E-10	3.3870E-20	1.5452E+05	4.7170E+12
I-133	9.6391E-08	8.5091E-17	3.8528E+08	9.2749E+12
I-135	1.6362E-08	4.6590E-18	2.0783E+07	7.9254E+12
Xe-133	4.2192E-02	2.2541E-10	1.0206E+15	1.3054E+14
Xe-135	3.7000E-03	1.4489E-12	6.4632E+12	2.8312E+13
Cs-134	2.9654E-10	2.2920E-16	1.0300E+09	1.2474E+12
Cs-136	8.4222E-11	1.1491E-18	5.0885E+06	3.7198E+11
Cs-137	2.3884E-10	2.7458E-15	1.2070E+10	1.0039E+12
Ba-140	8.1057E-11	1.1072E-18	4.7626E+06	4.9643E+07
La-140	2.7619E-11	4.9691E-20	2.1375E+05	3.7394E+06
Ce-141	1.9824E-12	6.9574E-20	2.9715E+05	1.1821E+06
Ce-144	1.6180E-12	5.0728E-19	2.1215E+06	9.5150E+05
Pr-143	7.9380E-13	1.1788E-20	4.9643E+04	4.5017E+05
Nd-147	2.9731E-13	3.6750E-21	1.5055E+04	1.8333E+05
Np-239	1.7121E-11	7.3801E-20	1.8596E+05	1.2653E+07
Pu-238	6.5483E-15	3.8250E-19	9.6785E+05	3.8433E+03
Pu-239	5.7501E-16	9.2511E-18	2.3310E+07	3.3682E+02
Pu-240	1.0741E-15	4.7139E-18	1.1828E+07	6.3049E+02
Pu-241	2.3149E-13	2.2472E-18	5.6153E+06	1.3589E+05
Am-241	1.5607E-16	4.5473E-20	1.1363E+05	9.1143E+01
Cm-242	3.9204E-14	1.1829E-20	2.9435E+04	2.3088E+04
Cm-244	2.6016E-15	3.2158E-20	7.9368E+04	1.5272E+03

CR Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	9.1008E+15	0.0000E+00	
Elemental I (atoms)	2.2670E+06	0.0000E+00	
Organic I (atoms)	3.8689E+09	0.0000E+00	
Aerosols (kg)	3.0623E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8868E-17
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.2581E-17
Total I (Ci)			2.0775E-07

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9443E+16
Elemental I (atoms)	0.0000E+00	7.2805E+13
Organic I (atoms)	0.0000E+00	2.3184E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0576E+17
Elemental I (atoms)	1.6409E+10	5.0748E+08
Organic I (atoms)	1.4616E+11	4.5203E+09
Aerosols (kg)	1.8012E-11	5.5706E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	1.5595E+17	0.0000E+00

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Elemental I (atoms)    7.1293E+13  0.0000E+00
Organic I (atoms)      2.2715E+12  0.0000E+00
Aerosols (kg)          8.2694E-08  0.0000E+00

EAB Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6829E-01  3.7092E-01  8.7965E-01
Accumulated dose (rem)  3.6717E+00  1.4489E+00  3.7334E+00

LPZ Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.4625E-03  1.8142E-03  6.5180E-03
Accumulated dose (rem)  2.8208E-01  2.5706E-01  2.9480E-01

CR Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5411E-04  5.0471E-04  1.6959E-04
Accumulated dose (rem)  5.7309E-03  2.3831E+01  1.0583E+00

DW Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms      Decay
Kr-85                  1.2814E+06  3.2660E+00  2.3139E+25  1.6604E+22
Kr-85m                 7.4869E+00  9.0976E-10  6.4455E+15  1.6050E+22
Kr-88                  3.8386E-03  3.0613E-13  2.0949E+12  2.5104E+22
I-131                  2.1011E+04  1.6948E-04  7.7909E+20  4.6882E+20
I-132                  2.0802E-08  2.0153E-18  9.1943E+06  2.2947E+20
I-133                  2.5159E+03  2.2210E-06  1.0056E+19  5.2866E+20
I-135                  2.4747E+00  7.0467E-10  3.1434E+15  3.3078E+20
Xe-133                 8.1392E+07  4.3483E-01  1.9689E+24  1.3877E+24
Xe-135                 4.3827E+04  1.7162E-05  7.6556E+19  1.1053E+23

DW Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    2.5108E+25  0.0000E+00
Elemental I (atoms)    4.1530E-06  4.8591E+22
Organic I (atoms)      7.8915E+20  0.0000E+00
Aerosols (kg)          7.3070E-27  4.8969E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          5.0452E-06
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    5.1050E-06
Total I (Ci)                                    2.3529E+04

DW to  RB Transport Group Inventory:
Time (h) =  96.0000  Leakage Transport

Noble gases (atoms)      9.7965E+23
Elemental I (atoms)      1.5872E+18
Organic I (atoms)        4.0212E+19
Aerosols (kg)            1.6727E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =  96.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  3.0283E+23
Elemental I (atoms)    0.0000E+00  8.3566E+17
Organic I (atoms)      0.0000E+00  1.2493E+19
Aerosols (kg)          0.0000E+00  8.8083E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =  96.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  3.0283E+23
Elemental I (atoms)    0.0000E+00  8.3566E+17
Organic I (atoms)      0.0000E+00  1.2493E+19
Aerosols (kg)          0.0000E+00  8.8083E-04

RB Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms      Decay
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Kr-85	1.2001E+03	3.0588E-03	2.1671E+22	1.8801E+19
Kr-85m	7.0118E-03	8.5203E-13	6.0365E+12	2.0256E+19
Kr-88	3.5950E-06	2.8670E-16	1.9620E+09	2.7186E+19
Sr-89	5.9900E-13	2.0618E-20	1.3951E+05	1.3778E+16
Sr-90	8.3181E-14	6.0980E-19	4.0803E+06	1.8159E+15
Ru-103	1.0146E-13	3.1439E-21	1.8381E+04	2.3692E+15
Ru-106	4.7007E-14	1.4051E-20	7.9825E+04	1.0334E+15
Te-127m	2.1061E-14	2.2328E-21	1.0588E+04	4.6253E+14
Te-129m	6.4715E-14	2.1482E-21	1.0028E+04	1.5228E+15
Te-132	8.0483E-13	2.6510E-21	1.2094E+04	3.9644E+16
I-131	1.9678E+01	1.5872E-07	7.2966E+17	6.4077E+17
I-133	2.3563E+00	2.0800E-09	9.4182E+15	8.0823E+17
I-135	2.3176E-03	6.5995E-13	2.9439E+12	4.6628E+17
Xe-133	7.6227E+04	4.0724E-04	1.8439E+21	1.6187E+21
Xe-135	4.1046E+01	1.6073E-08	7.1698E+16	1.5360E+20
Cs-134	2.4759E-12	1.9136E-18	8.6001E+06	6.3899E+16
Cs-136	6.0164E-13	8.2089E-21	3.6349E+04	1.8965E+16
Cs-137	1.9992E-12	2.2985E-17	1.0103E+08	5.1427E+16
Ba-140	7.8556E-13	1.0730E-20	4.6157E+04	2.1112E+16
Ce-144	1.8326E-14	5.7458E-21	2.4029E+04	4.0373E+14
Pu-238	7.4739E-17	4.3657E-21	1.1047E+04	1.6306E+12
Pu-239	6.5915E-18	1.0605E-19	2.6721E+05	1.4288E+11
Pu-240	1.2256E-17	5.3785E-20	1.3496E+05	2.6749E+11
Pu-241	2.6402E-15	2.5630E-20	6.4044E+04	5.7653E+13

RB Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.3515E+22	0.0000E+00	
Elemental I (atoms)	1.3764E+04	0.0000E+00	
Organic I (atoms)	7.3908E+17	0.0000E+00	
Aerosols (kg)	2.5832E-17	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.9811E-10
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.0520E-10
Total I (Ci)			2.2036E+01

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	4.0212E+19
Aerosols (kg)	1.6727E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5428E+23
Elemental I (atoms)	1.4600E+18	6.5902E+16
Organic I (atoms)	3.7506E+19	1.1606E+18
Aerosols (kg)	1.6070E-03	7.3271E-05

Environment Integral Nuclide Release:

Time (h) = 96.0000	Ci	kg	Atoms	Bq
Co-58	6.1686E-04	1.9399E-11	2.0142E+14	2.2824E+07
Co-60	7.3955E-04	6.5425E-10	6.5666E+15	2.7364E+07
Kr-85	4.7331E+04	1.2064E-01	8.5471E+23	1.7512E+15
Kr-85m	4.9337E+04	5.9951E-06	4.2475E+19	1.8255E+15
Kr-87	1.0243E+04	3.6161E-07	2.5031E+18	3.7899E+14
Kr-88	6.5953E+04	5.2597E-06	3.5994E+19	2.4402E+15
Rb-86	6.4943E-02	7.9815E-10	5.5890E+15	2.4029E+09
Sr-89	1.0450E+00	3.5969E-08	2.4338E+17	3.8664E+10
Sr-90	1.3773E-01	1.0097E-06	6.7564E+18	5.0962E+09
Sr-91	9.7065E-01	2.6777E-10	1.7720E+15	3.5914E+10
Sr-92	5.5061E-01	4.3806E-11	2.8674E+14	2.0373E+10
Y-90	5.8823E-03	1.0812E-11	7.2344E+13	2.1764E+08
Y-91	1.3894E-02	5.6655E-10	3.7493E+15	5.1408E+08
Y-92	2.2696E-01	2.3587E-11	1.5439E+14	8.3974E+09
Y-93	1.1361E-02	3.4052E-12	2.2050E+13	4.2035E+08
Zr-95	1.6199E-02	7.5405E-10	4.7800E+15	5.9937E+08
Zr-97	1.3251E-02	6.9314E-12	4.3033E+13	4.9027E+08

Nb-95	1.6262E-02	4.1588E-10	2.6363E+15	6.0171E+08
Mo-99	1.9859E-01	4.1406E-10	2.5187E+15	7.3479E+09
Tc-99m	1.8136E-01	3.4491E-11	2.0981E+14	6.7104E+09
Ru-103	1.7968E-01	5.5673E-09	3.2551E+16	6.6482E+09
Ru-105	7.1306E-02	1.0608E-11	6.0840E+13	2.6383E+09
Ru-106	7.8379E-02	2.3428E-08	1.3310E+17	2.9000E+09
Rh-105	1.1757E-01	1.3929E-10	7.9887E+14	4.3500E+09
Sb-127	2.0036E-01	7.5026E-10	3.5576E+15	7.4133E+09
Sb-129	3.4965E-01	6.2178E-11	2.9027E+14	1.2937E+10
Te-127	2.0351E-01	7.7114E-11	3.6566E+14	7.5299E+09
Te-127m	3.5082E-02	3.7192E-09	1.7636E+16	1.2980E+09
Te-129	4.2642E-01	2.0362E-11	9.5055E+13	1.5778E+10
Te-129m	1.1550E-01	3.8340E-09	1.7898E+16	4.2735E+09
Te-131m	3.9437E-01	4.9457E-10	2.2736E+15	1.4592E+10
Te-132	3.0036E+00	9.8934E-09	4.5136E+16	1.1113E+11
I-131	5.7005E+01	4.5981E-07	2.1138E+18	2.1092E+12
I-132	3.0107E+01	2.9168E-09	1.3307E+16	1.1140E+12
I-133	7.8493E+01	6.9291E-08	3.1374E+17	2.9042E+12
I-134	2.5004E+01	9.3728E-10	4.2123E+15	9.2513E+11
I-135	5.1293E+01	1.4606E-08	6.5154E+16	1.8978E+12
Xe-133	4.0660E+06	2.1722E-02	9.8357E+22	1.5044E+17
Xe-135	3.7775E+05	1.4792E-04	6.5985E+20	1.3977E+16
Cs-134	7.1330E+00	5.5131E-06	2.4777E+19	2.6392E+11
Cs-136	2.1217E+00	2.8949E-08	1.2819E+17	7.8503E+10
Cs-137	5.7405E+00	6.5997E-05	2.9010E+20	2.1240E+11
Ba-139	3.4883E-01	2.1326E-11	9.2394E+13	1.2907E+10
Ba-140	1.6008E+00	2.1867E-08	9.4061E+16	5.9231E+10
La-140	9.7821E-02	1.7599E-10	7.5703E+14	3.6194E+09
La-141	7.8865E-03	1.3945E-12	5.9560E+12	2.9180E+08
La-142	3.5544E-03	2.4830E-13	1.0530E+12	1.3151E+08
Ce-141	3.8064E-02	1.3359E-09	5.7056E+15	1.4084E+09
Ce-143	3.3718E-02	5.0774E-11	2.1382E+14	1.2476E+09
Ce-144	3.0621E-02	9.6007E-09	4.0151E+16	1.1330E+09
Pr-143	1.4452E-02	2.1462E-10	9.0382E+14	5.3473E+08
Nd-147	5.9139E-03	7.3102E-11	2.9948E+14	2.1881E+08
Np-239	4.1187E-01	1.7754E-09	4.4735E+15	1.5239E+10
Pu-238	1.2367E-04	7.2241E-09	1.8279E+16	4.5760E+06
Pu-239	1.0837E-05	1.7435E-07	4.3933E+17	4.0098E+05
Pu-240	2.0289E-05	8.9037E-08	2.2341E+17	7.5068E+05
Pu-241	4.3728E-03	4.2450E-08	1.0607E+17	1.6180E+08
Am-241	2.9322E-06	8.5433E-10	2.1348E+15	1.0849E+05
Cm-242	7.4307E-04	2.2420E-10	5.5793E+14	2.7494E+07
Cm-244	4.9144E-05	6.0745E-10	1.4992E+15	1.8183E+06

Environment Transport Group Inventory:

Time (h) = 96.0000	Total Release	Release Rate/s	
Noble gases (atoms)	9.5381E+23	2.7599E+18	
Elemental I (atoms)	6.5831E+16	1.9048E+11	
Organic I (atoms)	1.1549E+18	3.3417E+12	
Aerosols (kg)	7.3268E-05	2.1200E-10	
Dose Effective (Ci) I-131 (Thyroid)			7.1759E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			8.3765E+01
Total I (Ci)			2.4190E+02

RB to Environment Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5428E+23
Elemental I (atoms)	1.4600E+18	6.5902E+16
Organic I (atoms)	3.7506E+19	1.1606E+18
Aerosols (kg)	1.6070E-03	7.3271E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.8623E+16
Elemental I (atoms)	0.0000E+00	7.2805E+13
Organic I (atoms)	0.0000E+00	2.3617E+12

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Aerosols (kg)          0.0000E+00  8.2701E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.9392E+17
Elemental I (atoms)    1.6411E+10  5.0755E+08
Organic I (atoms)      2.4060E+11  7.4411E+09
Aerosols (kg)          1.8015E-11  5.5716E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    2.9015E+17  0.0000E+00
Elemental I (atoms)    7.1293E+13  0.0000E+00
Organic I (atoms)      2.3206E+12  0.0000E+00
Aerosols (kg)          8.2694E-08  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms      Decay
Kr-85                  1.0808E-04  2.7547E-10  1.9516E+15  2.4384E+12
Kr-85m                 6.3147E-10  7.6732E-20  5.4364E+05  4.7691E+12
I-131                  1.7462E-08  1.4085E-16  6.4751E+08  4.6579E+12
I-133                  2.0910E-09  1.8459E-18  8.3579E+06  9.2750E+12
Xe-133                 6.8649E-03  3.6675E-11  1.6606E+14  2.2054E+14
Xe-135                 3.6965E-06  1.4475E-15  6.4570E+09  3.0480E+13

CR Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    2.1177E+15  0.0000E+00
Elemental I (atoms)    2.1517E-05  0.0000E+00
Organic I (atoms)      6.5587E+08  0.0000E+00
Aerosols (kg)          4.0383E-26  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          6.2274E-18
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    6.3012E-18
Total I (Ci)                                    1.9555E-08

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.8623E+16
Elemental I (atoms)    0.0000E+00  7.2805E+13
Organic I (atoms)      0.0000E+00  2.3617E+12
Aerosols (kg)          0.0000E+00  8.2701E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.9392E+17
Elemental I (atoms)    1.6411E+10  5.0755E+08
Organic I (atoms)      2.4060E+11  7.4411E+09
Aerosols (kg)          1.8015E-11  5.5716E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    2.9015E+17  0.0000E+00
Elemental I (atoms)    7.1293E+13  0.0000E+00
Organic I (atoms)      2.3206E+12  0.0000E+00
Aerosols (kg)          8.2694E-08  0.0000E+00

EAB Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2608E+00  8.8419E-01  1.2877E+00
Accumulated dose (rem)  4.9325E+00  2.3331E+00  5.0211E+00
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LPZ Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.5985E-03	1.1976E-03	2.6350E-03
Accumulated dose (rem)	2.8468E-01	2.5825E-01	2.9744E-01

CR Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.1544E-05	2.8240E-04	6.0144E-05
Accumulated dose (rem)	5.7824E-03	2.3831E+01	1.0584E+00

DW Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Kr-85	9.3148E+05	2.3742E+00	1.6821E+25	1.0777E+23
I-131	1.6310E+03	1.3156E-05	6.0479E+19	1.0989E+21
I-133	1.7112E-06	1.5106E-15	6.8397E+09	5.3857E+20
Xe-133	1.9136E+06	1.0223E-02	4.6289E+22	3.1487E+24

DW Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.6867E+25	0.0000E+00	
Elemental I (atoms)	3.1828E-07	4.8591E+22	
Organic I (atoms)	6.0479E+19	0.0000E+00	
Aerosols (kg)	5.2985E-27	4.8969E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8399E-07
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.8399E-07
Total I (Ci)			1.6310E+03

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport
Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	9.5233E+19
Aerosols (kg)	1.6727E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 720.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	8.3566E+17
Organic I (atoms)	0.0000E+00	2.9325E+19
Aerosols (kg)	0.0000E+00	8.8083E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 720.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	8.3566E+17
Organic I (atoms)	0.0000E+00	2.9325E+19
Aerosols (kg)	0.0000E+00	8.8083E-04

RB Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Kr-85	8.7237E+02	2.2235E-03	1.5753E+22	1.0418E+20
I-131	1.5275E+00	1.2321E-08	5.6642E+16	1.2309E+18
I-133	1.6026E-09	1.4147E-18	6.4057E+06	8.1751E+17
Xe-133	1.7921E+03	9.5744E-06	4.3352E+19	3.2679E+21

RB Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.5797E+22	0.0000E+00	
Elemental I (atoms)	2.9808E-10	0.0000E+00	
Organic I (atoms)	5.6642E+16	0.0000E+00	
Aerosols (kg)	4.9623E-30	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.5523E-11
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.5523E-11
Total I (Ci)			1.5275E+00

DW to RB Transport Group Inventory:
Time (h) = 720.0000 Leakage Transport

Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	1.5872E+18
Organic I (atoms)	9.5233E+19
Aerosols (kg)	1.6727E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.9239E+24
Elemental I (atoms)	1.4600E+18	6.5902E+16
Organic I (atoms)	9.0956E+19	2.8137E+18
Aerosols (kg)	1.6070E-03	7.3271E-05

Environment Integral Nuclide Release:

Time (h) = 720.0000	Ci	kg	Atoms	Bq
Co-58	6.1686E-04	1.9399E-11	2.0142E+14	2.2824E+07
Co-60	7.3955E-04	6.5425E-10	6.5666E+15	2.7364E+07
Kr-85	2.6160E+05	6.6677E-01	4.7239E+24	9.6790E+15
Kr-85m	4.9337E+04	5.9951E-06	4.2475E+19	1.8255E+15
Kr-87	1.0243E+04	3.6161E-07	2.5031E+18	3.7899E+14
Kr-88	6.5953E+04	5.2597E-06	3.5994E+19	2.4402E+15
Rb-86	6.4943E-02	7.9815E-10	5.5890E+15	2.4029E+09
Sr-89	1.0450E+00	3.5969E-08	2.4338E+17	3.8664E+10
Sr-90	1.3773E-01	1.0097E-06	6.7564E+18	5.0962E+09
Sr-91	9.7065E-01	2.6777E-10	1.7720E+15	3.5914E+10
Sr-92	5.5061E-01	4.3806E-11	2.8674E+14	2.0373E+10
Y-90	5.8823E-03	1.0812E-11	7.2344E+13	2.1764E+08
Y-91	1.3894E-02	5.6655E-10	3.7493E+15	5.1408E+08
Y-92	2.2696E-01	2.3587E-11	1.5439E+14	8.3974E+09
Y-93	1.1361E-02	3.4052E-12	2.2050E+13	4.2035E+08
Zr-95	1.6199E-02	7.5405E-10	4.7800E+15	5.9937E+08
Zr-97	1.3251E-02	6.9314E-12	4.3033E+13	4.9027E+08
Nb-95	1.6262E-02	4.1588E-10	2.6363E+15	6.0171E+08
Mo-99	1.9859E-01	4.1406E-10	2.5187E+15	7.3479E+09
Tc-99m	1.8136E-01	3.4491E-11	2.0981E+14	6.7104E+09
Ru-103	1.7968E-01	5.5673E-09	3.2551E+16	6.6482E+09
Ru-105	7.1306E-02	1.0608E-11	6.0840E+13	2.6383E+09
Ru-106	7.8379E-02	2.3428E-08	1.3310E+17	2.9000E+09
Rh-105	1.1757E-01	1.3929E-10	7.9887E+14	4.3500E+09
Sb-127	2.0036E-01	7.5026E-10	3.5576E+15	7.4133E+09
Sb-129	3.4965E-01	6.2178E-11	2.9027E+14	1.2937E+10
Te-127	2.0351E-01	7.7114E-11	3.6566E+14	7.5299E+09
Te-127m	3.5082E-02	3.7192E-09	1.7636E+16	1.2980E+09
Te-129	4.2642E-01	2.0362E-11	9.5055E+13	1.5778E+10
Te-129m	1.1550E-01	3.8340E-09	1.7898E+16	4.2735E+09
Te-131m	3.9437E-01	4.9457E-10	2.2736E+15	1.4592E+10
Te-132	3.0036E+00	9.8934E-09	4.5136E+16	1.1113E+11
I-131	1.0135E+02	8.1751E-07	3.7581E+18	3.7500E+12
I-132	3.0107E+01	2.9168E-09	1.3307E+16	1.1140E+12
I-133	7.9180E+01	6.9897E-08	3.1649E+17	2.9297E+12
I-134	2.5004E+01	9.3728E-10	4.2123E+15	9.2513E+11
I-135	5.1293E+01	1.4606E-08	6.5154E+16	1.8979E+12
Xe-133	8.1934E+06	4.3773E-02	1.9820E+23	3.0316E+17
Xe-135	3.7792E+05	1.4799E-04	6.6015E+20	1.3983E+16
Cs-134	7.1330E+00	5.5131E-06	2.4777E+19	2.6392E+11
Cs-136	2.1217E+00	2.8949E-08	1.2819E+17	7.8503E+10
Cs-137	5.7405E+00	6.5997E-05	2.9010E+20	2.1240E+11
Ba-139	3.4883E-01	2.1326E-11	9.2394E+13	1.2907E+10
Ba-140	1.6008E+00	2.1867E-08	9.4061E+16	5.9231E+10
La-140	9.7821E-02	1.7599E-10	7.5703E+14	3.6194E+09
La-141	7.8865E-03	1.3945E-12	5.9560E+12	2.9180E+08
La-142	3.5544E-03	2.4830E-13	1.0530E+12	1.3151E+08
Ce-141	3.8064E-02	1.3359E-09	5.7056E+15	1.4084E+09
Ce-143	3.3718E-02	5.0774E-11	2.1382E+14	1.2476E+09
Ce-144	3.0621E-02	9.6007E-09	4.0151E+16	1.1330E+09
Pr-143	1.4452E-02	2.1462E-10	9.0382E+14	5.3473E+08

Nd-147	5.9139E-03	7.3102E-11	2.9948E+14	2.1881E+08
Np-239	4.1187E-01	1.7754E-09	4.4735E+15	1.5239E+10
Pu-238	1.2367E-04	7.2241E-09	1.8279E+16	4.5760E+06
Pu-239	1.0837E-05	1.7435E-07	4.3933E+17	4.0098E+05
Pu-240	2.0289E-05	8.9037E-08	2.2341E+17	7.5068E+05
Pu-241	4.3728E-03	4.2450E-08	1.0607E+17	1.6180E+08
Am-241	2.9322E-06	8.5433E-10	2.1348E+15	1.0849E+05
Cm-242	7.4307E-04	2.2420E-10	5.5793E+14	2.7494E+07
Cm-244	4.9144E-05	6.0745E-10	1.4992E+15	1.8183E+06

Environment Transport Group Inventory:

Time (h) = 720.0000	Total Release	Release Rate/s		
Noble gases (atoms)	4.9229E+24	1.8993E+18		
Elemental I (atoms)	6.5831E+16	2.5398E+10		
Organic I (atoms)	2.8020E+18	1.0810E+12		
Aerosols (kg)	7.3268E-05	2.8267E-11		
Dose Effective (Ci)	I-131 (Thyroid)		1.1622E+02	
Dose Effective (Ci)	I-131 (ICRP2 Thyroid)		1.2829E+02	
Total I (Ci)			2.8693E+02	

RB to Environment Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.9239E+24
Elemental I (atoms)	1.4600E+18	6.5902E+16
Organic I (atoms)	9.0956E+19	2.8137E+18
Aerosols (kg)	1.6070E-03	7.3271E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9305E+17
Elemental I (atoms)	0.0000E+00	7.2805E+13
Organic I (atoms)	0.0000E+00	2.4010E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.0637E+17
Elemental I (atoms)	1.6411E+10	5.0755E+08
Organic I (atoms)	3.2641E+11	1.0095E+10
Aerosols (kg)	1.8015E-11	5.5716E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	5.9855E+17	0.0000E+00
Elemental I (atoms)	7.1293E+13	0.0000E+00
Organic I (atoms)	2.3630E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Kr-85	2.9201E-05	7.4428E-11	5.2732E+14	5.3042E+12
I-131	5.0384E-10	4.0640E-18	1.8683E+07	4.6581E+12
Xe-133	5.9989E-05	3.2048E-13	1.4511E+12	2.7623E+14

CR Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	5.2877E+14	0.0000E+00	
Elemental I (atoms)	9.8320E-20	0.0000E+00	
Organic I (atoms)	1.8683E+07	0.0000E+00	
Aerosols (kg)	1.6367E-39	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7617E-19

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 1.7617E-19
Total I (Ci) 5.0384E-10

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9305E+17
Elemental I (atoms)	0.0000E+00	7.2805E+13
Organic I (atoms)	0.0000E+00	2.4010E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.0637E+17
Elemental I (atoms)	1.6411E+10	5.0755E+08
Organic I (atoms)	3.2641E+11	1.0095E+10
Aerosols (kg)	1.8015E-11	5.5716E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	5.9855E+17	0.0000E+00
Elemental I (atoms)	7.1293E+13	0.0000E+00
Organic I (atoms)	2.3630E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

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##
I-131 Summary
##

Time (hr)	DW I-131 (Curies)	RB I-131 (Curies)	Environment I-131 (Curies)
0.000	3.8944E+03	6.7607E-04	4.1839E-08
0.260	1.8207E+06	1.4374E+02	4.1941E+00
0.333	2.3333E+06	2.3426E+02	8.7803E+00
0.500	2.5229E+05	2.8694E+02	9.2384E+00
0.750	3.9747E+05	3.2024E+02	9.9970E+00
1.000	4.0160E+05	3.5419E+02	1.0843E+01
1.400	4.0806E+05	4.0412E+02	1.2365E+01
1.700	4.1288E+05	4.3838E+02	1.3632E+01
1.880	4.1577E+05	4.5775E+02	1.4440E+01
2.000	4.1769E+05	4.7020E+02	1.4999E+01
2.100	5.0440E+04	4.6397E+02	1.5468E+01
2.200	3.2151E+04	4.5086E+02	1.5927E+01
2.300	3.1227E+04	4.3782E+02	1.6372E+01
2.400	3.1167E+04	4.2520E+02	1.6805E+01
2.700	3.1122E+04	3.8978E+02	1.8029E+01
3.000	3.1079E+04	3.5777E+02	1.9152E+01
3.300	3.1036E+04	3.2884E+02	2.0184E+01
3.600	3.0993E+04	3.0269E+02	2.1133E+01
3.900	3.0951E+04	2.7905E+02	2.2007E+01
4.000	3.0936E+04	2.7168E+02	2.2283E+01
4.300	3.0894E+04	2.5102E+02	2.3068E+01
4.600	3.0851E+04	2.3234E+02	2.3795E+01
4.900	3.0809E+04	2.1545E+02	2.4467E+01
5.200	3.0766E+04	2.0018E+02	2.5092E+01
5.500	3.0724E+04	1.8637E+02	2.5673E+01
5.800	3.0681E+04	1.7389E+02	2.6214E+01
6.100	3.0639E+04	1.6260E+02	2.6720E+01
6.400	3.0597E+04	1.5239E+02	2.7193E+01
6.700	3.0555E+04	1.4316E+02	2.7637E+01
7.000	3.0512E+04	1.3481E+02	2.8055E+01
7.300	3.0470E+04	1.2726E+02	2.8449E+01
7.600	3.0428E+04	1.2043E+02	2.8821E+01
7.900	3.0386E+04	1.1424E+02	2.9174E+01
8.000	3.0372E+04	1.1232E+02	2.9287E+01

8.300	3.0331E+04	1.0691E+02	2.9617E+01
8.600	3.0289E+04	1.0201E+02	2.9931E+01
8.900	3.0247E+04	9.7578E+01	3.0231E+01
9.200	3.0205E+04	9.3565E+01	3.0518E+01
9.500	3.0164E+04	8.9931E+01	3.0794E+01
9.800	3.0122E+04	8.6640E+01	3.1059E+01
10.100	3.0081E+04	8.3659E+01	3.1315E+01
10.400	3.0039E+04	8.0958E+01	3.1563E+01
24.000	2.8218E+04	5.3183E+01	3.9722E+01
96.000	2.1011E+04	1.9678E+01	5.7005E+01
720.000	1.6310E+03	1.5275E+00	1.0135E+02

Time (hr)	CR I-131 (Curies)	MSL "B" Volume 1 I-131 (Curies)	MSL "C" Volume 3 I-131 (Curies)
0.000	1.4677E-10	3.5699E-04	3.5699E-04
0.260	1.3582E-02	7.8111E+01	7.8111E+01
0.333	2.7814E-02	1.2833E+02	1.2833E+02
0.500	2.2552E-02	1.6420E+02	1.6420E+02
0.750	1.8576E-02	1.9512E+02	1.9512E+02
1.000	1.5301E-02	2.2789E+02	2.2789E+02
1.400	1.1218E-02	2.8097E+02	2.8097E+02
1.700	8.8891E-03	3.2128E+02	3.2128E+02
1.880	7.7306E-03	3.4568E+02	3.4568E+02
2.000	7.0434E-03	3.6204E+02	3.6204E+02
2.100	6.5177E-03	3.6484E+02	3.6484E+02
2.200	6.0312E-03	3.6543E+02	3.6543E+02
2.300	5.5810E-03	3.6590E+02	3.6590E+02
2.400	5.1645E-03	3.6637E+02	3.6637E+02
2.700	4.0922E-03	3.6776E+02	3.6776E+02
3.000	3.2426E-03	3.6916E+02	3.6916E+02
3.300	2.5695E-03	3.7055E+02	3.7055E+02
3.600	2.0360E-03	3.7193E+02	3.7193E+02
3.900	1.6134E-03	3.7331E+02	3.7331E+02
4.000	1.4930E-03	3.7377E+02	3.7377E+02
4.300	1.1831E-03	3.7515E+02	3.7515E+02
4.600	9.3754E-04	3.7652E+02	3.7652E+02
4.900	7.4297E-04	3.7789E+02	3.7789E+02
5.200	5.8879E-04	3.7925E+02	3.7925E+02
5.500	4.6662E-04	3.8061E+02	3.8061E+02
5.800	3.6981E-04	3.8196E+02	3.8196E+02
6.100	2.9310E-04	3.8332E+02	3.8332E+02
6.400	2.3232E-04	3.8466E+02	3.8466E+02
6.700	1.8415E-04	3.8601E+02	3.8601E+02
7.000	1.4598E-04	3.8735E+02	3.8735E+02
7.300	1.1573E-04	3.8869E+02	3.8869E+02
7.600	9.1760E-05	3.9002E+02	3.9002E+02
7.900	7.2764E-05	3.9135E+02	3.9135E+02
8.000	6.7352E-05	3.9179E+02	3.9179E+02
8.300	5.3406E-05	3.9311E+02	3.9311E+02
8.600	4.2354E-05	3.9443E+02	3.9443E+02
8.900	3.3595E-05	3.9575E+02	3.9575E+02
9.200	2.6654E-05	3.9706E+02	3.9706E+02
9.500	2.1152E-05	3.9837E+02	3.9837E+02
9.800	1.6792E-05	3.9967E+02	3.9967E+02
10.100	1.3336E-05	4.0097E+02	4.0097E+02
10.400	1.0597E-05	4.0227E+02	4.0227E+02
24.000	9.4642E-08	4.5716E+02	4.5716E+02
96.000	1.7462E-08	5.0061E+02	5.0061E+02
720.000	5.0384E-10	1.6755E+02	1.6755E+02

##
Cumulative Dose Summary
##

	EAB		LPZ		CR	
Time (hr)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.260	1.1861E-01	5.8945E-03	4.6175E-02	2.2948E-03	6.1281E-01	2.7148E-02
0.333	2.4812E-01	1.2306E-02	9.6597E-02	4.7910E-03	1.6156E+00	7.1568E-02
0.500	2.6104E-01	1.3397E-02	1.0163E-01	5.2157E-03	4.4485E+00	1.9705E-01
0.750	2.8244E-01	1.6330E-02	1.0996E-01	6.3574E-03	7.9099E+00	3.5035E-01

1.000	3.0639E-01	2.2887E-02	1.1928E-01	8.9101E-03	1.0752E+01	4.7621E-01
1.400	3.4963E-01	4.5720E-02	1.3611E-01	1.7800E-02	1.4284E+01	6.3268E-01
1.700	3.8567E-01	7.5282E-02	1.5015E-01	2.9308E-02	1.6291E+01	7.2161E-01
1.880	4.0866E-01	9.8709E-02	1.5910E-01	3.8429E-02	1.7286E+01	7.6573E-01
2.000	4.2452E-01	1.1680E-01	1.6527E-01	4.5471E-02	1.7875E+01	7.9185E-01
2.100	4.3787E-01	1.3340E-01	1.7047E-01	5.1933E-02	1.8325E+01	8.1182E-01
2.200	4.5088E-01	1.5122E-01	1.7553E-01	5.8874E-02	1.8741E+01	8.3029E-01
2.300	4.6350E-01	1.7016E-01	1.8044E-01	6.6246E-02	1.9126E+01	8.4735E-01
2.400	4.7573E-01	1.9009E-01	1.8521E-01	7.4006E-02	1.9481E+01	8.6314E-01
2.700	5.1030E-01	2.5490E-01	1.9866E-01	9.9238E-02	2.0395E+01	9.0369E-01
3.000	5.4188E-01	3.2545E-01	2.1096E-01	1.2670E-01	2.1116E+01	9.3575E-01
3.300	5.7077E-01	3.9986E-01	2.2221E-01	1.5567E-01	2.1685E+01	9.6109E-01
3.600	5.9725E-01	4.7662E-01	2.3252E-01	1.8555E-01	2.2135E+01	9.8113E-01
3.900	6.2154E-01	5.5456E-01	2.4197E-01	2.1590E-01	2.2491E+01	9.9699E-01
4.000	6.2920E-01	5.8064E-01	2.4495E-01	2.2605E-01	2.2592E+01	1.0015E+00
4.300	6.5092E-01	6.5876E-01	2.4585E-01	2.2929E-01	2.2851E+01	1.0131E+00
4.600	6.7093E-01	7.3623E-01	2.4668E-01	2.3249E-01	2.3057E+01	1.0223E+00
4.900	6.8940E-01	8.1254E-01	2.4745E-01	2.3565E-01	2.3219E+01	1.0296E+00
5.200	7.0647E-01	8.8731E-01	2.4815E-01	2.3875E-01	2.3347E+01	1.0353E+00
5.500	7.2230E-01	9.6027E-01	2.4881E-01	2.4177E-01	2.3448E+01	1.0399E+00
5.800	7.3699E-01	1.0312E+00	2.4942E-01	2.4471E-01	2.3528E+01	1.0435E+00
6.100	7.5066E-01	1.1000E+00	2.4998E-01	2.4756E-01	2.3591E+01	1.0464E+00
6.400	7.6341E-01	1.1666E+00	2.5051E-01	2.5032E-01	2.3641E+01	1.0487E+00
6.700	7.7533E-01	1.2310E+00	2.5101E-01	2.5298E-01	2.3680E+01	1.0505E+00
7.000	7.8650E-01	1.2930E+00	2.5147E-01	2.5555E-01	2.3712E+01	1.0519E+00
7.300	7.9699E-01	1.3528E+00	2.5190E-01	2.5803E-01	2.3736E+01	1.0531E+00
7.600	8.0687E-01	1.4104E+00	2.5231E-01	2.6041E-01	2.3756E+01	1.0540E+00
7.900	8.1620E-01	1.4658E+00	2.5270E-01	2.6271E-01	2.3771E+01	1.0547E+00
8.000	8.1919E-01	1.4838E+00	2.5282E-01	2.6345E-01	2.3776E+01	1.0549E+00
8.300	8.2786E-01	1.5363E+00	2.5290E-01	2.6440E-01	2.3787E+01	1.0555E+00
8.600	8.3609E-01	1.5869E+00	2.5298E-01	2.6532E-01	2.3796E+01	1.0559E+00
8.900	8.4393E-01	1.6355E+00	2.5305E-01	2.6620E-01	2.3803E+01	1.0562E+00
9.200	8.5141E-01	1.6823E+00	2.5312E-01	2.6705E-01	2.3809E+01	1.0565E+00
9.500	8.5856E-01	1.7272E+00	2.5319E-01	2.6786E-01	2.3813E+01	1.0568E+00
9.800	8.6542E-01	1.7704E+00	2.5325E-01	2.6865E-01	2.3816E+01	1.0569E+00
10.100	8.7202E-01	1.8120E+00	2.5332E-01	2.6940E-01	2.3819E+01	1.0571E+00
10.400	8.7837E-01	1.8521E+00	2.5338E-01	2.7013E-01	2.3821E+01	1.0572E+00
24.000	1.0780E+00	2.8537E+00	2.5524E-01	2.8828E-01	2.3831E+01	1.0582E+00
96.000	1.4489E+00	3.7334E+00	2.5706E-01	2.9480E-01	2.3831E+01	1.0583E+00
720.000	2.3331E+00	5.0211E+00	2.5825E-01	2.9744E-01	2.3831E+01	1.0584E+00

```
######################################################################
                        Worst Two-Hour Doses
######################################################################
```

EAB

Time (hr)	Whole Body (rem)	Thyroid (rem)	TEDE (rem)
3.2	5.0443E-01	1.4534E-01	5.1226E-01

12.5 RADTRAD Output File “JAFCL _270.out”

```
 ######################################################################
    RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 12:01:01
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file           = C:\radtrad3.03\Fitz\JAFCL_270.psf
 Inventory file       = c:\radtrad3.03\fitz\jafloca.nif
 Release file         = c:\radtrad3.03\defaults\bwr_dba.rft
 Dose Conversion file = c:\radtrad3.03\defaults\fgr11&12.inp




     #####    ####   #####    #  #     #  #####   #     #  #####
     #    #  #       #        #  ##    #  #    #  #     #    #
     #    #  #       #        #  # #   #  #    #  #     #    #
     #####    ####   ####     #  #  #  #  #####   #     #    #
     #            #  #        #  #   # #  #       #     #    #
     #            #  #        #  #    ##  #       #     #    #
     #         ####   #        #  #     #  #        ####     #


 Radtrad 3.03 4/15/2001
 Containment Leakage from Drywell & Wetwell (DW+WW) Using CAVEX Core Inventory -
Containment Shine Dose
 Nuclide Inventory File:
 c:\radtrad3.03\fitz\jafloca.nif
 Plant Power Level:
  2.5867E+03
 Compartments:
   6
 Compartment 1:
 DW
   3
  1.5000E+05
   1
   0
   0
   0
   0
 Compartment 2:
 RB
   3
  1.1850E+06
   0
   0
   0
   0
   0
 Compartment 3:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
   0
 Compartment 4:
 CR
   1
  1.0100E+05
   0
   0
   0
```

```
  0
  0
Compartment 5:
MSL "B" Volume 1
  3
 1.0000E+00
  0
  0
  0
  0
  0
Compartment 6:
MSL "C" Volume 3
  3
 1.0000E+00
  0
  0
  0
  0
  0
Pathways:
  7
Pathway 1:
DW to  RB
  1
  2
  4
Pathway 2:
RB to Environment
  2
  3
  2
Pathway 3:
Environment to CR Unfiltered
  3
  4
  2
Pathway 4:
Environment to  CR Filtered
  3
  4
  2
Pathway 5:
CR to  Environment - Exhaust
  4
  3
  2
Pathway 6:
DW to  MSL "B" Volume 1
  1
  5
  1
Pathway 7:
DW to  MSL "A" Volume 3
  1
  6
  1
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\radtrad3.03\defaults\fgr11&12.inp
c:\radtrad3.03\defaults\bwr_dba.rft
  0.0000E+00
  1
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
```

```
  0.0000E+00
  0
  0
  0
  0
Compartments:
  6
Compartment 1:
  1
  1
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.8800E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   3.0000E+00
  2.3000E+00   3.0000E+00
  2.4000E+00   3.0000E+00
  3.0000E+00   3.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.8800E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   0.0000E+00
  2.3000E+00   0.0000E+00
  2.4000E+00   0.0000E+00
  3.0000E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  0
  0
```

```
  0
Compartment 5:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 6:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.5000E+00
  2.4000E+01   7.5000E-01
  7.2000E+02   0.0000E+00
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   6.6000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  3.3330E-01   6.6000E+03   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   4.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
```

```
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+02   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   1.0000E+02   1.0000E+02   1.0000E+02
  5.0000E-01   1.3000E+03   1.0000E+02   1.0000E+02   1.0000E+02
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
```

```
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
EAB
  3
  1
  4
  0.0000E+00   5.2400E-05
  1.0000E+00   5.2400E-05
  2.0000E+00   5.2400E-05
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  0
Location 2:
LPZ
  3
  1
  6
  0.0000E+00   2.0400E-05
  4.0000E+00   2.1700E-06
  8.0000E+00   9.5300E-07
  2.4000E+01   3.9000E-07
  9.6000E+01   1.0800E-07
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   2.3000E-04
  0
Location 3:
CR
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  7
  0.0000E+00   3.5200E-03
```

```
  2.7780E-01   3.5200E-03
  3.3300E-01   9.2600E-07
  8.0000E+00   6.7500E-07
  2.4000E+01   3.3900E-07
  9.6000E+01   1.2600E-07
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   1.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   5.0000E-01
  8.0000E+00   1.0000E+00
  2.4000E+01   2.0000E+00
  9.6000E+01   5.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\radtrad3.o373
  1
  1
  1
  0
  0
End of Scenario File
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 12:01:01
########################################################################

########################################################################
                     Plant Description
########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.5867E+03 MWth

Number of compartments    =   6

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: DW
Compartment volume =   1.5000E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Exit Pathway Number    1: DW to  RB
   Exit Pathway Number    6: DW to  MSL "B" Volume 1
   Exit Pathway Number    7: DW to  MSL "A" Volume 3

Compartment number  2
Name: RB
Compartment volume =   1.1850E+06 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  2
   Inlet Pathway Number   1: DW to  RB
   Exit Pathway Number    2: RB to Environment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   2: RB to Environment
   Inlet Pathway Number   5: CR to  Environment - Exhaust
   Exit Pathway Number    3: Environment to CR Unfiltered
   Exit Pathway Number    4: Environment to  CR Filtered

Compartment number  4
Name: CR
Compartment volume =   1.0100E+05 (Cubic feet)
Compartment type is Control Room
Pathways into and out of compartment  4
   Inlet Pathway Number   3: Environment to CR Unfiltered
   Inlet Pathway Number   4: Environment to  CR Filtered
   Exit Pathway Number    5: CR to  Environment - Exhaust

Compartment number  5
Name: MSL "B" Volume 1
Compartment volume =   1.0000E+00 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  5
   Inlet Pathway Number   6: DW to  MSL "B" Volume 1

Compartment number  6
Name: MSL "C" Volume 3
Compartment volume =   1.0000E+00 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  6
   Inlet Pathway Number   7: DW to  MSL "A" Volume 3

Total number of pathways =   7
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 12:01:01
########################################################################

########################################################################
                    Scenario Description
########################################################################

Radioactive Decay is enabled
Calculation of Daughters is enabled

Release Fractions and Timings
               GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
            0.500000 hr    1.5000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        4.279E+03
IODINE       5.0000E-02     2.5000E-01      0.0000E+00        2.249E+02
CESIUM       5.0000E-02     2.0000E-01      0.0000E+00        4.682E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        3.100E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.674E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.550E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.852E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        5.214E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.978E+00

Inventory Power =      2587. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
               (Ci/MWt)      (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   1.529E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.830E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   5.260E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.670E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.740E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.360E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.600E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   3.240E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   4.260E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.030E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.200E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   4.400E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   4.110E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.250E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.640E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   5.020E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.860E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   5.030E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.140E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.540E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.460E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   3.180E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.940E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.980E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.560E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   7.910E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.530E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   4.340E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   7.420E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.430E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   5.380E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.860E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.710E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.960E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.640E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.430E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
 I-135     2   5.330E+04  2.380E+04   8.294E-14   8.460E-09   3.320E-10
 Xe-133    1   5.630E+04  4.532E+05   1.560E-15   0.000E+00   0.000E+00
 Xe-135    1   2.310E+04  3.272E+04   1.190E-14   0.000E+00   0.000E+00
 Cs-134    3   7.220E+03  6.507E+07   7.570E-14   1.110E-08   1.250E-08
 Cs-136    3   2.160E+03  1.132E+06   1.060E-13   1.730E-09   1.980E-09
 Cs-137    3   5.810E+03  9.467E+08   2.725E-14   7.930E-09   8.630E-09
 Ba-139    6   5.150E+04  4.962E+03   2.170E-15   2.400E-12   4.640E-11
```

Ba-140	6	5.000E+04	1.101E+06	8.580E-15	2.560E-10	1.010E-09
La-140	9	5.240E+04	1.450E+05	1.170E-13	6.870E-11	1.310E-09
La-141	9	4.700E+04	1.415E+04	2.390E-15	9.400E-12	1.570E-10
La-142	9	4.600E+04	5.550E+03	1.440E-13	8.740E-12	6.840E-11
Ce-141	8	4.720E+04	2.808E+06	3.430E-15	2.550E-11	2.420E-09
Ce-143	8	4.560E+04	1.188E+05	1.290E-14	6.230E-12	9.160E-10
Ce-144	8	3.790E+04	2.456E+07	2.773E-15	2.920E-10	1.010E-07
Pr-143	9	4.430E+04	1.172E+06	2.100E-17	1.680E-18	2.190E-09
Nd-147	9	1.850E+04	9.487E+05	6.190E-15	1.820E-11	1.850E-09
Np-239	8	5.370E+05	2.035E+05	7.690E-15	7.620E-12	6.780E-10
Pu-238	8	1.530E+02	2.769E+09	4.880E-18	3.860E-10	7.790E-05
Pu-239	8	1.340E+01	7.594E+11	4.240E-18	3.750E-10	8.330E-05
Pu-240	8	2.510E+01	2.063E+11	4.750E-18	3.760E-10	8.330E-05
Pu-241	8	5.410E+03	4.544E+08	7.250E-20	9.150E-12	1.340E-06
Am-241	9	9.060E+00	1.364E+10	8.180E-16	1.600E-09	1.200E-04
Cm-242	9	2.300E+03	1.407E+07	5.690E-18	9.410E-10	4.670E-06
Cm-244	9	1.520E+02	5.715E+08	4.910E-18	1.010E-09	6.700E-05

Nuclide	Daughter	Fraction	Daughter	Fraction	Daughter	Fraction
Kr-85m	Kr-85	0.21	none	0.00	none	0.00
Kr-87	Rb-87	1.00	none	0.00	none	0.00
Kr-88	Rb-88	1.00	none	0.00	none	0.00
Sr-90	Y-90	1.00	none	0.00	none	0.00
Sr-91	Y-91m	0.58	Y-91	0.42	none	0.00
Sr-92	Y-92	1.00	none	0.00	none	0.00
Y-93	Zr-93	1.00	none	0.00	none	0.00
Zr-95	Nb-95m	0.01	Nb-95	0.99	none	0.00
Zr-97	Nb-97m	0.95	Nb-97	0.05	none	0.00
Mo-99	Tc-99m	0.88	Tc-99	0.12	none	0.00
Tc-99m	Tc-99	1.00	none	0.00	none	0.00
Ru-103	Rh-103m	1.00	none	0.00	none	0.00
Ru-105	Rh-105	1.00	none	0.00	none	0.00
Ru-106	Rh-106	1.00	none	0.00	none	0.00
Sb-127	Te-127m	0.18	Te-127	0.82	none	0.00
Sb-129	Te-129m	0.22	Te-129	0.77	none	0.00
Te-127m	Te-127	0.98	none	0.00	none	0.00
Te-129	I-129	1.00	none	0.00	none	0.00
Te-129m	Te-129	0.65	I-129	0.35	none	0.00
Te-131m	Te-131	0.22	I-131	0.78	none	0.00
Te-132	I-132	1.00	none	0.00	none	0.00
I-131	Xe-131m	0.01	none	0.00	none	0.00
I-133	Xe-133m	0.03	Xe-133	0.97	none	0.00
I-135	Xe-135m	0.15	Xe-135	0.85	none	0.00
Xe-135	Cs-135	1.00	none	0.00	none	0.00
Cs-137	Ba-137m	0.95	none	0.00	none	0.00
Ba-140	La-140	1.00	none	0.00	none	0.00
La-141	Ce-141	1.00	none	0.00	none	0.00
Ce-143	Pr-143	1.00	none	0.00	none	0.00
Ce-144	Pr-144m	0.02	Pr-144	0.98	none	0.00
Nd-147	Pm-147	1.00	none	0.00	none	0.00
Np-239	Pu-239	1.00	none	0.00	none	0.00
Pu-238	U-234	1.00	none	0.00	none	0.00
Pu-239	U-235	1.00	none	0.00	none	0.00
Pu-240	U-236	1.00	none	0.00	none	0.00
Pu-241	U-237	0.00	Am-241	1.00	none	0.00
Am-241	Np-237	1.00	none	0.00	none	0.00
Cm-242	Pu-238	1.00	none	0.00	none	0.00
Cm-244	Pu-240	1.00	none	0.00	none	0.00

Iodine fractions
- Aerosol = 9.5000E-01
- Elemental = 4.8500E-02
- Organic = 1.5000E-03

COMPARTMENT DATA

Compartment number 1: DW

Sprays: Aerosal Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01

1.8800E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	3.0000E+00
2.3000E+00	3.0000E+00
2.4000E+00	3.0000E+00
3.0000E+00	3.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Sprays: Elemental Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01
1.8800E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	0.0000E+00
2.3000E+00	0.0000E+00
2.4000E+00	0.0000E+00
3.0000E+00	0.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Compartment number 2: RB

Compartment number 3: Environment

Compartment number 4: CR

Compartment number 5: MSL "B" Volume 1

Compartment number 6: MSL "C" Volume 3

PATHWAY DATA

Pathway number 1: DW to RB

Convection Data

Time (hr)	Flow Rate (% / day)
0.0000E+00	1.5000E+00
2.4000E+01	7.5000E-01
7.2000E+02	0.0000E+00

Pathway number 2: RB to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	6.6000E+03	0.0000E+00	0.0000E+00	0.0000E+00
3.3330E-01	6.6000E+03	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 3: Environment to CR Unfiltered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	4.0000E+02	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 4: Environment to CR Filtered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	9.0000E+02	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 5: CR to Environment - Exhaust

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	1.0000E+02	1.0000E+02	1.0000E+02
5.0000E-01	1.3000E+03	1.0000E+02	1.0000E+02	1.0000E+02
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 6: DW to MSL "B" Volume 1

Piping: Removal Data

Time (hr)	Flow Rate (cfm)	DF Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.0000E+00	4.7800E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.4000E+01	2.3900E-01	1.0000E+00	1.0000E+00	1.0000E+00
7.2000E+02	0.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Pathway number 7: DW to MSL "A" Volume 3

Piping: Removal Data

Time (hr)	Flow Rate (cfm)	DF Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.0000E+00	4.7800E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.4000E+01	2.3900E-01	1.0000E+00	1.0000E+00	1.0000E+00
7.2000E+02	0.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

LOCATION DATA

Location EAB is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	5.2400E-05
1.0000E+00	5.2400E-05
2.0000E+00	5.2400E-05
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
7.2000E+02	3.5000E-04

Location LPZ is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	2.0400E-05
4.0000E+00	2.1700E-06
8.0000E+00	9.5300E-07
2.4000E+01	3.9000E-07
9.6000E+01	1.0800E-07
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
8.0000E+00	1.8000E-04
2.4000E+01	2.3000E-04
7.2000E+02	2.3000E-04

Location CR is in compartment 4

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	3.5200E-03
2.7780E-01	3.5200E-03
3.3300E-01	9.2600E-07
8.0000E+00	6.7500E-07
2.4000E+01	3.3900E-07

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        9.6000E+01          1.2600E-07
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)          Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.5000E-04
        7.2000E+02                 3.5000E-04

      Location Occupancy Factor Data
       Time (hr)          Occupancy Factor
        0.0000E+00            1.0000E+00
        2.4000E+01            6.0000E-01
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time             Time step
       0.0000E+00       1.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       5.0000E-01
       8.0000E+00       1.0000E+00
       2.4000E+01       2.0000E+00
       9.6000E+01       5.0000E+00
       7.2000E+02       0.0000E+00
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######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 12:01:01
######################################################################




     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
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    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


######################################################################
           Dose, Detailed model and Detailed Inventory Output
######################################################################

EAB Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3720E-03  2.4812E-01  1.2306E-02
Accumulated dose (rem)  1.3720E-03  2.4812E-01  1.2306E-02

LPZ Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.3415E-04  9.6597E-02  4.7910E-03
Accumulated dose (rem)  5.3415E-04  9.6597E-02  4.7910E-03

CR Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.7178E-04  1.6156E+00  7.1568E-02
Accumulated dose (rem)  3.7178E-04  1.6156E+00  7.1568E-02

DW Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5339E+04  1.1556E-01  8.1875E+23  1.0363E+18
Kr-85m                 7.0976E+05  8.6246E-05  6.1104E+20  1.6510E+19
Kr-87                  1.2507E+06  4.4153E-05  3.0563E+20  3.0427E+19
Kr-88                  1.8753E+06  1.4955E-04  1.0235E+21  4.4068E+19
Rb-86                  5.6860E+03  6.9881E-05  4.8934E+20  1.2999E+17
I-131                  2.3333E+06  1.8821E-02  8.6521E+22  5.3353E+19
I-132                  3.2389E+06  3.1378E-04  1.4315E+21  7.5375E+19
I-133                  4.8078E+06  4.2441E-03  1.9217E+22  1.1030E+20
I-134                  4.2584E+06  1.5963E-04  7.1740E+20  1.0662E+20
I-135                  4.4365E+06  1.2633E-03  5.6353E+21  1.0261E+20
Xe-133                 4.8525E+06  2.5924E-02  1.1738E+23  1.1091E+20
Xe-135                 2.0375E+06  7.9785E-04  3.5591E+21  4.6188E+19
Cs-134                 6.2233E+05  4.8100E-01  2.1617E+24  1.4225E+19
Cs-136                 1.8605E+05  2.5385E-03  1.1240E+22  4.2535E+18
Cs-137                 5.0080E+05  5.7575E+00  2.5308E+25  1.1447E+19

DW Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4163E+23  0.0000E+00
Elemental I (atoms)    5.5058E+21  0.0000E+00
Organic I (atoms)      1.7028E+20  0.0000E+00
Aerosols (kg)          6.2647E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.7352E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.8338E-04
Total I (Ci)                                   1.9075E+07

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
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Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   0.3333    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   0.3333    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5522E+00  1.1603E-05  8.2204E+19  7.1009E+13
Kr-85m                 7.1261E+01  8.6592E-09  6.1349E+16  1.1264E+15
Kr-87                  1.2557E+02  4.4330E-09  3.0685E+16  2.0531E+15
Kr-88                  1.8828E+02  1.5016E-08  1.0276E+17  2.9991E+15
Rb-86                  5.7089E-01  7.0161E-09  4.9130E+16  8.9065E+12
I-131                  2.3426E+02  1.8896E-06  8.6866E+18  3.6554E+15
I-132                  3.1998E+02  3.0999E-08  1.4142E+17  5.0804E+15
I-133                  4.8271E+02  4.2612E-07  1.9294E+18  7.5512E+15
I-134                  4.2755E+02  1.6027E-08  7.2029E+16  7.1437E+15
I-135                  4.4543E+02  1.2684E-07  5.6579E+17  7.0108E+15
Xe-133                 4.8720E+02  2.6028E-06  1.1785E+19  7.5999E+15
Xe-135                 2.0457E+02  8.0106E-08  3.5734E+17  3.1708E+15
Cs-134                 6.2483E+01  4.8293E-05  2.1703E+20  9.7468E+14
Cs-136                 1.8679E+01  2.5487E-07  1.1286E+18  2.9144E+14
Cs-137                 5.0281E+01  5.7806E-04  2.5410E+21  7.8434E+14

RB Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4541E+19  0.0000E+00
Elemental I (atoms)    5.5267E+17  0.0000E+00
Organic I (atoms)      1.7093E+16  0.0000E+00
Aerosols (kg)          6.2898E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          9.8296E-09
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2492E-08
Total I (Ci)                                    1.9099E+03

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

RB to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.5426E+18
Elemental I (atoms)    0.0000E+00  2.0748E+16
Organic I (atoms)      0.0000E+00  6.4169E+14
Aerosols (kg)          0.0000E+00  2.3569E-05

Environment Integral Nuclide Release:

Time (h) =   0.3333       Ci           kg         Atoms         Bq
Kr-85                  1.7057E-01  4.3476E-07  3.0802E+18  6.3111E+09
Kr-85m                 2.7031E+00  3.2847E-10  2.3272E+15  1.0002E+11
Kr-87                  4.9151E+00  1.7352E-10  1.2011E+15  1.8186E+11
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Kr-88	7.1932E+00	5.7366E-10	3.9257E+15	2.6615E+11
Rb-86	2.1394E-02	2.6293E-10	1.8412E+15	7.9158E+08
I-131	8.7803E+00	7.0823E-08	3.2558E+17	3.2487E+11
I-132	1.2176E+01	1.1796E-09	5.3817E+15	4.5052E+11
I-133	1.8135E+01	1.6009E-08	7.2487E+16	6.7099E+11
I-134	1.7075E+01	6.4008E-10	2.8766E+15	6.3178E+11
I-135	1.6830E+01	4.7922E-09	2.1377E+16	6.2269E+11
Xe-133	1.8256E+01	9.7531E-08	4.4161E+17	6.7547E+11
Xe-135	7.6252E+00	2.9859E-09	1.3320E+16	2.8213E+11
Cs-134	2.3413E+00	1.8096E-06	8.1324E+18	8.6627E+10
Cs-136	7.0005E-01	9.5516E-09	4.2295E+16	2.5902E+10
Cs-137	1.8841E+00	2.1660E-05	9.5213E+19	6.9710E+10

Environment Transport Group Inventory:

Time (h) = 0.3333	Total Release	Release Rate/s	
Noble gases (atoms)	3.5426E+18	2.9525E+15	
Elemental I (atoms)	2.0744E+16	1.7288E+13	
Organic I (atoms)	6.4155E+14	5.3468E+11	
Aerosols (kg)	2.3569E-05	1.9642E-08	
Dose Effective (Ci) I-131 (Thyroid)			1.2376E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.5758E+01
Total I (Ci)			7.2996E+01

RB to Environment Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5426E+18
Elemental I (atoms)	0.0000E+00	2.0748E+16
Organic I (atoms)	0.0000E+00	6.4169E+14
Aerosols (kg)	0.0000E+00	2.3569E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2430E+16
Elemental I (atoms)	0.0000E+00	7.2796E+13
Organic I (atoms)	0.0000E+00	2.2514E+12
Aerosols (kg)	0.0000E+00	8.2692E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	1.2042E+15	0.0000E+00
Elemental I (atoms)	7.0495E+12	0.0000E+00
Organic I (atoms)	2.1803E+11	0.0000E+00
Aerosols (kg)	8.0112E-09	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 0.3333	Ci	kg	Atoms	Decay
Kr-85	5.4048E-04	1.3776E-09	9.7602E+15	6.5136E+09
Kr-85m	8.4609E-03	1.0281E-12	7.2841E+12	1.0306E+11
Kr-87	1.4909E-02	5.2634E-13	3.6433E+12	1.8665E+11
Kr-88	2.2355E-02	1.7828E-12	1.2200E+13	2.7401E+11
Rb-86	6.7782E-05	8.3303E-13	5.8333E+12	8.1696E+08
I-131	2.7814E-02	2.2435E-10	1.0314E+15	3.3528E+11
I-132	3.7692E-02	3.6516E-12	1.6659E+13	4.6153E+11
I-133	5.7312E-02	5.0593E-11	2.2908E+14	6.9229E+11

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I-134                  5.0764E-02  1.9029E-12  8.5520E+12  6.4672E+11
I-135                  5.2886E-02  1.5059E-11  6.7177E+13  6.4199E+11
Xe-133                 5.7846E-02  3.0904E-10  1.3993E+15  6.9712E+11
Xe-135                 2.4289E-02  9.5111E-12  4.2427E+13  2.9118E+11
Cs-134                 7.4187E-03  5.7339E-09  2.5769E+16  8.9406E+10
Cs-136                 2.2178E-03  3.0261E-11  1.3400E+14  2.6732E+10
Cs-137                 5.9699E-03  6.8634E-08  3.0170E+17  7.1946E+10

CR Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    1.1225E+16  0.0000E+00
Elemental I (atoms)    6.5612E+13  0.0000E+00
Organic I (atoms)      2.0292E+12  0.0000E+00
Aerosols (kg)          7.4680E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.3692E-11
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.7398E-11
Total I (Ci)                                   2.2647E-01

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2430E+16
Elemental I (atoms)    0.0000E+00  7.2796E+13
Organic I (atoms)      0.0000E+00  2.2514E+12
Aerosols (kg)          0.0000E+00  8.2692E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    1.2042E+15  0.0000E+00
Elemental I (atoms)    7.0495E+12  0.0000E+00
Organic I (atoms)      2.1803E+11  0.0000E+00
Aerosols (kg)          8.0112E-09  0.0000E+00

EAB Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.2171E-04  1.2915E-02  1.0909E-03
Accumulated dose (rem)  1.8937E-03  2.6104E-01  1.3397E-02

LPZ Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0311E-04  5.0280E-03  4.2469E-04
Accumulated dose (rem)  7.3726E-04  1.0163E-01  5.2157E-03

CR Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1983E-04  2.8329E+00  1.2548E-01
Accumulated dose (rem)  9.9162E-04  4.4485E+00  1.9705E-01

DW Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg          Atoms      Decay
Kr-85                  6.8009E+04  1.7334E-01  1.2281E+24  2.3096E+18
Kr-85m                 1.0375E+06  1.2607E-04  8.9321E+20  3.6171E+19
Kr-87                  1.7130E+06  6.0476E-05  4.1862E+20  6.3902E+19
Kr-88                  2.7008E+06  2.1539E-04  1.4740E+21  9.5608E+19
Rb-86                  6.0304E+02  7.4113E-06  5.1898E+19  1.6215E+17
I-131                  2.5229E+05  2.0350E-03  9.3551E+21  6.6630E+19
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I-132                  3.6181E+05  3.5051E-05  1.5991E+20  9.3943E+19
I-133                  5.1719E+05  4.5656E-04  2.0673E+21  1.3762E+20
I-134                  4.0377E+05  1.5135E-05  6.8021E+19  1.2989E+20
I-135                  4.7159E+05  1.3429E-04  5.9903E+20  1.2772E+20
Xe-133                 7.2742E+06  3.8862E-02  1.7596E+23  2.4715E+20
Xe-135                 3.0409E+06  1.1908E-03  5.3118E+21  1.0329E+20
Cs-134                 6.6019E+04  5.1026E-02  2.2932E+23  1.7745E+19
Cs-136                 1.9729E+04  2.6919E-04  1.1920E+21  5.3059E+18
Cs-137                 5.3127E+04  6.1078E-01  2.6848E+24  1.4280E+19

DW Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    1.4122E+24  0.0000E+00
Elemental I (atoms)    5.8262E+20  7.6685E+21
Organic I (atoms)      2.5457E+20  0.0000E+00
Aerosols (kg)          6.6457E-01  8.7318E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          8.3482E-05
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.0587E-04
Total I (Ci)                                    2.0066E+06

DW to  RB Transport Group Inventory:
Time (h) =   0.5000  Leakage Transport

Noble gases (atoms)      2.2071E+20
Elemental I (atoms)      7.3466E+17
Organic I (atoms)        3.9920E+16
Aerosols (kg)            8.3447E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   0.5000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.1654E+20
Elemental I (atoms)    0.0000E+00  3.8790E+17
Organic I (atoms)      0.0000E+00  2.1078E+16
Aerosols (kg)          0.0000E+00  4.4060E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   0.5000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.1654E+20
Elemental I (atoms)    0.0000E+00  3.8790E+17
Organic I (atoms)      0.0000E+00  2.1078E+16
Aerosols (kg)          0.0000E+00  4.4060E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms      Decay
Kr-85                  1.0060E+01  2.5640E-05  1.8166E+20  2.3307E+14
Kr-85m                 1.5347E+02  1.8648E-08  1.3212E+17  3.6268E+15
Kr-87                  2.5338E+02  8.9453E-09  6.1920E+16  6.3017E+15
Kr-88                  3.9949E+02  3.1859E-08  2.1802E+17  9.5507E+15
Rb-86                  6.9865E-01  8.5863E-09  6.0126E+16  2.3810E+13
I-131                  2.8694E+02  2.3145E-06  1.0640E+19  9.7735E+15
I-132                  3.7616E+02  3.6442E-08  1.6626E+17  1.3269E+16
I-133                  5.8833E+02  5.1935E-07  2.3516E+18  2.0126E+16
I-134                  4.5930E+02  1.7217E-08  7.7376E+16  1.7593E+16
I-135                  5.3645E+02  1.5275E-07  6.8141E+17  1.8544E+16
Xe-133                 1.0762E+03  5.7497E-06  2.6034E+19  2.4942E+16
Xe-135                 4.5297E+02  1.7738E-07  7.9125E+17  1.0468E+16
Cs-134                 7.6486E+01  5.9116E-05  2.6567E+20  2.6061E+15
Cs-136                 2.2857E+01  3.1187E-07  1.3810E+18  7.7907E+14
Cs-137                 6.1550E+01  7.0762E-04  3.1105E+21  2.0972E+15

RB Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    2.0889E+20  0.0000E+00
Elemental I (atoms)    6.7414E+17  0.0000E+00
Organic I (atoms)      3.7643E+16  0.0000E+00
Aerosols (kg)          7.6994E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.2013E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.5206E-08
Total I (Ci)                                    2.2472E+03
```

DW to RB Transport Group Inventory:
Time (h) = 0.5000 Leakage Transport

Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

RB to Environment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1797E+19
Elemental I (atoms)	3.4875E+16	2.1827E+16
Organic I (atoms)	1.4450E+15	6.8638E+14
Aerosols (kg)	3.9758E-05	2.4798E-05

Environment Integral Nuclide Release:

Time (h) = 0.5000	Ci	kg	Atoms	Bq
Kr-85	5.6802E-01	1.4478E-06	1.0257E+19	2.1017E+10
Kr-85m	8.8305E+00	1.0730E-09	7.6023E+15	3.2673E+11
Kr-87	1.5306E+01	5.4036E-10	3.7404E+15	5.6632E+11
Kr-88	2.3241E+01	1.8535E-09	1.2684E+16	8.5991E+11
Rb-86	2.2510E-02	2.7664E-10	1.9372E+15	8.3286E+08
I-131	9.2384E+00	7.4518E-08	3.4256E+17	3.4182E+11
I-132	1.2788E+01	1.2389E-09	5.6522E+15	4.7317E+11
I-133	1.9076E+01	1.6840E-08	7.6249E+16	7.0582E+11
I-134	1.7854E+01	6.6929E-10	3.0079E+15	6.6061E+11
I-135	1.7693E+01	5.0380E-09	2.2474E+16	6.5462E+11
Xe-133	6.0785E+01	3.2474E-07	1.4704E+18	2.2491E+12
Xe-135	2.5516E+01	9.9916E-09	4.4571E+16	9.4409E+11
Cs-134	2.4634E+00	1.9040E-06	8.5567E+18	9.1146E+10
Cs-136	7.3656E-01	1.0050E-08	4.4501E+16	2.7253E+10
Cs-137	1.9824E+00	2.2790E-05	1.0018E+20	7.3347E+10

Environment Transport Group Inventory:

Time (h) = 0.5000	Total Release	Release Rate/s	
Noble gases (atoms)	1.1796E+19	6.5536E+15	
Elemental I (atoms)	2.1822E+16	1.2123E+13	
Organic I (atoms)	6.8623E+14	3.8124E+11	
Aerosols (kg)	2.4798E-05	1.3777E-08	
Dose Effective (Ci) I-131 (Thyroid)			1.3020E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.6575E+01
Total I (Ci)			7.6650E+01

RB to Environment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1797E+19
Elemental I (atoms)	3.4875E+16	2.1827E+16
Organic I (atoms)	1.4450E+15	6.8638E+14
Aerosols (kg)	3.9758E-05	2.4798E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2437E+16
Elemental I (atoms)	0.0000E+00	7.2797E+13
Organic I (atoms)	0.0000E+00	2.2515E+12
Aerosols (kg)	0.0000E+00	8.2693E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00

```
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    3.3232E+15  0.0000E+00
Elemental I (atoms)    1.9412E+13  0.0000E+00
Organic I (atoms)      6.0037E+11  0.0000E+00
Aerosols (kg)          2.2105E-08  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms      Decay
Kr-85                  4.3882E-04  1.1185E-09  7.9242E+15  1.7280E+10
Kr-85m                 6.6944E-03  8.1347E-13  5.7633E+12  2.6952E+11
Kr-87                  1.1053E-02  3.9021E-13  2.7011E+12  4.7097E+11
Kr-88                  1.7426E-02  1.3897E-12  9.5105E+12  7.1068E+11
Rb-86                  5.4976E-05  6.7566E-13  4.7313E+12  2.1665E+09
I-131                  2.2552E-02  1.8190E-10  8.3622E+14  8.8897E+11
I-132                  2.9081E-02  2.8173E-12  1.2853E+13  1.1942E+12
I-133                  4.6239E-02  4.0818E-11  1.8482E+14  1.8305E+12
I-134                  3.6098E-02  1.3532E-12  6.0814E+12  1.5960E+12
I-135                  4.2162E-02  1.2006E-11  5.3556E+13  1.6863E+12
Xe-133                 4.6963E-02  2.5090E-10  1.1360E+15  1.8493E+12
Xe-135                 1.9928E-02  7.8034E-12  3.4810E+13  7.7714E+11
Cs-134                 6.0186E-03  4.6518E-09  2.0906E+16  2.3713E+11
Cs-136                 1.7986E-03  2.4541E-11  1.0867E+14  7.0887E+10
Cs-137                 4.8433E-03  5.5682E-08  2.4476E+17  1.9082E+11

CR Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    9.1131E+15  0.0000E+00
Elemental I (atoms)    5.3037E+13  0.0000E+00
Organic I (atoms)      1.6403E+12  0.0000E+00
Aerosols (kg)          6.0586E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.1076E-11
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.4015E-11
Total I (Ci)                                    1.7613E-01

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2437E+16
Elemental I (atoms)    0.0000E+00  7.2797E+13
Organic I (atoms)      0.0000E+00  2.2515E+12
Aerosols (kg)          0.0000E+00  8.2693E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    3.3232E+15  0.0000E+00
Elemental I (atoms)    1.9412E+13  0.0000E+00
Organic I (atoms)      6.0037E+11  0.0000E+00
Aerosols (kg)          2.2105E-08  0.0000E+00

EAB Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
```

Delta dose (rem)	7.3479E-03	4.5348E-02	9.4897E-03
Accumulated dose (rem)	9.2416E-03	3.0639E-01	2.2887E-02

LPZ Doses:

Time (h) = 1.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.8606E-03	1.7655E-02	3.6945E-03
Accumulated dose (rem)	3.5979E-03	1.1928E-01	8.9101E-03

CR Doses:

Time (h) = 1.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2455E-03	6.3032E+00	2.7917E-01
Accumulated dose (rem)	2.2371E-03	1.0752E+01	4.7621E-01

DW Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	2.1963E+01	6.9069E-07	7.1715E+18	1.3792E+15
Co-60	2.6297E+01	2.3263E-05	2.3349E+20	1.6512E+15
Kr-85	4.9869E+05	1.2711E+00	9.0055E+24	2.1469E+19
Kr-85m	7.0415E+06	8.5564E-04	6.0621E+21	3.1473E+20
Kr-87	9.5646E+06	3.3767E-04	2.3373E+21	4.7198E+20
Kr-88	1.7529E+07	1.3979E-03	9.5665E+21	8.0098E+20
Rb-86	7.5756E+02	9.3104E-06	6.5196E+19	2.1203E+17
Sr-89	3.7226E+04	1.2813E-03	8.6701E+21	2.3378E+18
Sr-90	4.8973E+03	3.5902E-02	2.4023E+23	3.0751E+17
Sr-91	4.3069E+04	1.1881E-05	7.8626E+19	2.7517E+18
Sr-92	3.7386E+04	2.9744E-06	1.9470E+19	2.4958E+18
Y-90	5.2590E+01	9.6662E-08	6.4679E+17	3.2617E+15
Y-91	4.7268E+02	1.9274E-05	1.2755E+20	2.9677E+16
Y-92	7.5766E+02	7.8739E-08	5.1541E+17	4.2881E+16
Y-93	4.9803E+02	1.4928E-07	9.6662E+17	3.1787E+16
Zr-95	5.7684E+02	2.6851E-05	1.7021E+20	3.6225E+16
Zr-97	5.3625E+02	2.8051E-07	1.7415E+18	3.4002E+16
Nb-95	5.7824E+02	1.4788E-05	9.3740E+19	3.6309E+16
Mo-99	7.3090E+03	1.5239E-05	9.2700E+19	4.6010E+17
Tc-99m	6.5180E+03	1.2396E-06	7.5403E+18	4.0917E+17
Ru-103	6.4043E+03	1.9844E-04	1.1602E+21	4.0221E+17
Ru-105	3.9092E+03	5.8154E-07	3.3354E+18	2.5477E+17
Ru-106	2.7875E+03	8.3320E-04	4.7337E+21	1.7504E+17
Rh-105	4.2812E+03	5.0722E-06	2.9091E+19	2.6889E+17
Sb-127	7.3024E+03	2.7345E-05	1.2966E+20	4.5936E+17
Sb-129	1.9363E+04	3.4433E-06	1.6075E+19	1.2633E+18
Te-127	7.2686E+03	2.7542E-06	1.3060E+19	4.5630E+17
Te-127m	1.2473E+03	1.3224E-04	6.2704E+20	7.8323E+16
Te-129	2.0176E+04	9.6343E-07	4.4976E+18	1.2847E+18
Te-129m	4.1102E+03	1.3644E-04	6.3694E+20	2.5809E+17
Te-131m	1.5109E+04	1.8948E-05	8.7103E+19	9.5394E+17
Te-132	1.0996E+05	3.6219E-04	1.6524E+21	6.9190E+18
I-131	4.0160E+05	3.2394E-03	1.4892E+22	9.2575E+19
I-132	5.7885E+05	5.6078E-05	2.5584E+20	1.3141E+20
I-133	8.1089E+05	7.1582E-04	3.2412E+21	1.9039E+20
I-134	4.3350E+05	1.6250E-05	7.3030E+19	1.6406E+20
I-135	7.1342E+05	2.0315E-04	9.0620E+20	1.7498E+20
Xe-133	5.3281E+07	2.8465E-01	1.2889E+24	2.2952E+21
Xe-135	2.2407E+07	8.7742E-03	3.9140E+22	9.6498E+20
Cs-134	8.2998E+04	6.4149E-02	2.8829E+23	2.3208E+19
Cs-136	2.4777E+04	3.3806E-04	1.4969E+21	6.9376E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	1.8676E+19
Ba-139	3.5806E+04	2.1890E-06	9.4838E+18	2.5389E+18
Ba-140	5.7350E+04	7.8337E-04	3.3697E+21	3.6031E+18
La-140	6.3959E+02	1.1507E-06	4.9498E+18	3.9410E+16
La-141	4.5294E+02	8.0091E-08	3.4207E+17	2.9664E+16
La-142	3.3732E+02	2.3564E-08	9.9933E+16	2.3607E+16
Ce-141	1.3564E+03	4.7604E-05	2.0332E+20	8.5175E+16
Ce-143	1.2833E+03	1.9324E-06	8.1380E+18	8.0984E+16
Ce-144	1.0891E+03	3.4147E-04	1.4281E+21	6.8391E+16
Pr-143	5.0935E+02	7.5641E-06	3.1854E+19	3.1982E+16
Nd-147	2.1212E+02	2.6220E-06	1.0742E+19	1.3328E+16
Np-239	1.5245E+04	6.5714E-05	1.6558E+20	9.6008E+17
Pu-238	4.3973E+00	2.5685E-04	6.4992E+20	2.7612E+14

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Pu-239                3.8516E-01  6.1967E-03  1.5614E+22  2.4185E+13
Pu-240                7.2137E-01  3.1658E-03  7.9436E+21  4.5297E+13
Pu-241                1.5548E+02  1.5093E-03  3.7716E+21  9.7632E+15
Am-241                1.0417E-01  3.0350E-05  7.5838E+19  6.5407E+12
Cm-242                2.6436E+01  7.9764E-06  1.9849E+19  1.6601E+15
Cm-244                1.7474E+00  2.1599E-05  5.3307E+19  1.0972E+14

DW Transport Group Inventory:
Time (h) =   1.0000    Atmosphere     Sump
Noble gases (atoms)    1.0351E+25  0.0000E+00
Elemental I (atoms)    9.0808E+20  2.1014E+22
Organic I (atoms)      6.7270E+20  0.0000E+00
Aerosols (kg)          8.8772E-01  2.1825E+01
Dose Effective (Ci/cc) I-131 (Thyroid)         1.3210E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.6621E-04
Total I (Ci)                                   2.9383E+06

DW to  RB Transport Group Inventory:
Time (h) =   1.0000  Leakage Transport

Noble gases (atoms)      2.0591E+21
Elemental I (atoms)      1.0127E+18
Organic I (atoms)        1.8502E+17
Aerosols (kg)            1.1072E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   1.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.0872E+21
Elemental I (atoms)    0.0000E+00  5.3470E+17
Organic I (atoms)      0.0000E+00  9.7690E+16
Aerosols (kg)          0.0000E+00  5.8462E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   1.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.0872E+21
Elemental I (atoms)    0.0000E+00  5.3470E+17
Organic I (atoms)      0.0000E+00  9.7690E+16
Aerosols (kg)          0.0000E+00  5.8462E-04

RB Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg         Atoms      Decay
Co-58                 5.9291E-03  1.8646E-10  1.9360E+15  1.9398E+11
Co-60                 7.0991E-03  6.2802E-09  6.3034E+16  2.3225E+11
Kr-85                 9.1788E+01  2.3395E-04  1.6575E+21  3.0084E+15
Kr-85m                1.2960E+03  1.5749E-07  1.1158E+18  4.3847E+16
Kr-87                 1.7604E+03  6.2150E-08  4.3020E+17  6.4737E+16
Kr-88                 3.2263E+03  2.5730E-07  1.7608E+18  1.1121E+17
Rb-86                 8.0594E-01  9.9049E-09  6.9359E+16  7.3995E+13
Sr-89                 1.0050E+01  3.4591E-07  2.3406E+18  3.2880E+14
Sr-90                 1.3221E+00  9.6921E-06  6.4853E+19  4.3252E+13
Sr-91                 1.1627E+01  3.2074E-09  2.1226E+16  3.8488E+14
Sr-92                 1.0093E+01  8.0297E-10  5.2561E+15  3.4420E+14
Y-90                  1.7392E-02  3.1967E-11  2.1390E+14  5.2925E+11
Y-91                  1.2815E-01  5.2257E-09  3.4582E+16  4.1861E+12
Y-92                  6.5185E-01  6.7743E-11  4.4343E+14  1.6140E+13
Y-93                  1.3445E-01  4.0299E-11  2.6095E+14  4.4475E+12
Zr-95                 1.5572E-01  7.2487E-09  4.5950E+16  5.0949E+12
Zr-97                 1.4477E-01  7.5728E-11  4.7015E+14  4.7675E+12
Nb-95                 1.5610E-01  3.9921E-09  2.5306E+16  5.1069E+12
Mo-99                 1.9732E+00  4.1140E-09  2.5026E+16  6.4661E+13
Tc-99m                1.7596E+00  3.3464E-10  2.0356E+15  5.7545E+13
Ru-103                1.7289E+00  5.3570E-08  3.1321E+17  5.6569E+13
Ru-105                1.0553E+00  1.5700E-10  9.0042E+14  3.5408E+13
Ru-106                7.5253E-01  2.2493E-07  1.2779E+18  2.4620E+13
Rh-105                1.1558E+00  1.3693E-09  7.8535E+15  3.7816E+13
Sb-127                1.9714E+00  7.3820E-09  3.5004E+16  6.4572E+13
Sb-129                5.2274E+00  9.2957E-10  4.3395E+15  1.7551E+14
Te-127                1.9623E+00  7.4353E-10  3.5257E+15  6.4177E+13
Te-127m               3.3673E-01  3.5699E-08  1.6928E+17  1.1016E+13
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Te-129	5.4469E+00	2.6009E-10	1.2142E+15	1.7978E+14
Te-129m	1.1096E+00	3.6833E-08	1.7195E+17	3.6301E+13
Te-131m	4.0788E+00	5.1151E-09	2.3515E+16	1.3394E+14
Te-132	2.9684E+01	9.7777E-08	4.4608E+17	9.7251E+14
I-131	3.5419E+02	2.8569E-06	1.3133E+19	3.1134E+16
I-132	4.2620E+02	4.1290E-08	1.8837E+17	3.9983E+16
I-133	7.1540E+02	6.3153E-07	2.8595E+18	6.3584E+16
I-134	3.8245E+02	1.4336E-08	6.4430E+16	4.5658E+16
I-135	6.2940E+02	1.7922E-07	7.9948E+17	5.7447E+16
Xe-133	9.8026E+03	5.2369E-05	2.3712E+20	3.2152E+17
Xe-135	4.0790E+03	1.5973E-06	7.1251E+18	1.3437E+17
Cs-134	8.8298E+01	6.8246E-05	3.0670E+20	8.1022E+15
Cs-136	2.6359E+01	3.5965E-07	1.5925E+18	2.4206E+15
Cs-137	7.1057E+01	8.1692E-04	3.5909E+21	6.5201E+15
Ba-139	9.6662E+00	5.9095E-10	2.5603E+15	3.4342E+14
Ba-140	1.5482E+01	2.1148E-07	9.0969E+17	5.0669E+14
La-140	2.3207E-01	4.1753E-10	1.7960E+15	6.8543E+12
La-141	1.2228E-01	2.1622E-11	9.2346E+13	4.1162E+12
La-142	9.1063E-02	6.3614E-12	2.6978E+13	3.2067E+12
Ce-141	3.6614E-01	1.2850E-08	5.4882E+16	1.1979E+13
Ce-143	3.4644E-01	5.2169E-10	2.1970E+15	1.1372E+13
Ce-144	2.9402E-01	9.2185E-08	3.8552E+17	9.6192E+12
Pr-143	1.3761E-01	2.0435E-09	8.6058E+15	4.5005E+12
Nd-147	5.7263E-02	7.0784E-10	2.8998E+15	1.8742E+12
Np-239	4.1156E+00	1.7740E-08	4.4701E+16	1.3491E+14
Pu-238	1.1871E-03	6.9341E-08	1.7545E+17	3.8836E+10
Pu-239	1.0398E-04	1.6729E-06	4.2152E+18	3.4017E+09
Pu-240	1.9474E-04	8.5464E-07	2.1445E+18	6.3711E+09
Pu-241	4.1974E-02	4.0747E-07	1.0182E+18	1.3732E+12
Am-241	2.8122E-05	8.1936E-09	2.0474E+16	9.1998E+08
Cm-242	7.1367E-03	2.1533E-09	5.3585E+15	2.3349E+11
Cm-244	4.7173E-04	5.8308E-09	1.4391E+16	1.5433E+10

RB Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9051E+21	0.0000E+00	
Elemental I (atoms)	8.1986E+17	0.0000E+00	
Organic I (atoms)	1.6626E+17	0.0000E+00	
Aerosols (kg)	9.0293E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.4734E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.8467E-08
Total I (Ci)			2.5076E+03

DW to RB Transport Group Inventory:

Time (h) = 1.0000 Leakage Transport

Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5349E+20
Elemental I (atoms)	1.5585E+17	2.5568E+16
Organic I (atoms)	1.6513E+16	1.1524E+15
Aerosols (kg)	1.7530E-04	2.8990E-05

Environment Integral Nuclide Release:

Time (h) = 1.0000	Ci	kg	Atoms	Bq
Co-58	1.4302E-05	4.4978E-13	4.6700E+12	5.2918E+05
Co-60	1.7123E-05	1.5148E-11	1.5204E+14	6.3356E+05
Kr-85	7.3937E+00	1.8845E-05	1.3352E+20	2.7357E+11
Kr-85m	1.0766E+02	1.3083E-08	9.2689E+16	3.9836E+12
Kr-87	1.5860E+02	5.5990E-09	3.8756E+16	5.8680E+12
Kr-88	2.7292E+02	2.1765E-08	1.4895E+17	1.0098E+13
Rb-86	2.6282E-02	3.2300E-10	2.2618E+15	9.7242E+08
Sr-89	2.4242E-02	8.3442E-10	5.6461E+15	8.9695E+08
Sr-90	3.1889E-03	2.3378E-08	1.5643E+17	1.1799E+08

Sr-91	2.8363E-02	7.8242E-12	5.1778E+13	1.0494E+09
Sr-92	2.5333E-02	2.0155E-12	1.3193E+13	9.3733E+08
Y-90	3.9479E-05	7.2562E-14	4.8553E+11	1.4607E+06
Y-91	3.0871E-04	1.2588E-11	8.3304E+13	1.1422E+07
Y-92	1.2550E-03	1.3042E-13	8.5371E+11	4.6433E+07
Y-93	3.2775E-04	9.8238E-14	6.3613E+11	1.2127E+07
Zr-95	3.7564E-04	1.7485E-11	1.1084E+14	1.3899E+07
Zr-97	3.5140E-04	1.8382E-13	1.1412E+12	1.3002E+07
Nb-95	3.7653E-04	9.6290E-12	6.1039E+13	1.3931E+07
Mo-99	4.7670E-03	9.9392E-12	6.0460E+13	1.7638E+08
Tc-99m	4.2451E-03	8.0732E-13	4.9109E+12	1.5707E+08
Ru-103	4.1707E-03	1.2923E-10	7.5556E+14	1.5431E+08
Ru-105	2.6078E-03	3.8795E-13	2.2251E+12	9.6490E+07
Ru-106	1.8152E-03	5.4255E-10	3.0824E+15	6.7161E+07
Rh-105	2.7883E-03	3.3035E-12	1.8947E+13	1.0317E+08
Sb-127	4.7605E-03	1.7826E-11	8.4529E+13	1.7614E+08
Sb-129	1.2926E-02	2.2986E-12	1.0731E+13	4.7827E+08
Te-127	4.7334E-03	1.7936E-12	8.5048E+12	1.7514E+08
Te-127m	8.1221E-04	8.6106E-11	4.0830E+14	3.0052E+07
Te-129	1.3284E-02	6.3429E-13	2.9611E+12	4.9149E+08
Te-129m	2.6764E-03	8.8842E-11	4.1474E+14	9.9026E+07
Te-131m	9.8734E-03	1.2382E-11	5.6920E+13	3.6532E+08
Te-132	7.1697E-02	2.3616E-10	1.0774E+15	2.6528E+09
I-131	1.0843E+01	8.7459E-08	4.0205E+17	4.0118E+11
I-132	1.4791E+01	1.4329E-09	6.5373E+15	5.4726E+11
I-133	2.2340E+01	1.9721E-08	8.9294E+16	8.2657E+11
I-134	1.9954E+01	7.4799E-10	3.3616E+15	7.3829E+11
I-135	2.0613E+01	5.8695E-09	2.6183E+16	7.6268E+11
Xe-133	7.9016E+02	4.2213E-06	1.9114E+19	2.9236E+13
Xe-135	3.3009E+02	1.2926E-07	5.7659E+17	1.2213E+13
Cs-134	2.8765E+00	2.2232E-06	9.9915E+18	1.0643E+11
Cs-136	8.5993E-01	1.1733E-08	5.1955E+16	3.1818E+10
Cs-137	2.3148E+00	2.6612E-05	1.1698E+20	8.5646E+10
Ba-139	2.5234E-02	1.5427E-12	6.6837E+12	9.3365E+08
Ba-140	3.7357E-02	5.1028E-10	2.1950E+15	1.3822E+09
La-140	5.1388E-04	9.2452E-13	3.9769E+12	1.9013E+07
La-141	3.0312E-04	5.3599E-14	2.2892E+11	1.1216E+07
La-142	2.3570E-04	1.6465E-14	6.9829E+10	8.7211E+06
Ce-141	8.8318E-04	3.0996E-11	1.3238E+14	3.2678E+07
Ce-143	8.3834E-04	1.2624E-12	5.3163E+12	3.1019E+07
Ce-144	7.0921E-04	2.2236E-10	9.2991E+14	2.6241E+07
Pr-143	3.3183E-04	4.9278E-12	2.0752E+13	1.2278E+07
Nd-147	1.3818E-04	1.7080E-12	6.9973E+12	5.1125E+06
Np-239	9.9458E-03	4.2871E-11	1.0802E+14	3.6799E+08
Pu-238	2.8633E-06	1.6725E-10	4.2320E+14	1.0594E+05
Pu-239	2.5080E-07	4.0349E-09	1.0167E+16	9.2795E+03
Pu-240	4.6973E-07	2.0614E-09	5.1725E+15	1.7380E+04
Pu-241	1.0124E-04	9.8282E-10	2.4559E+15	3.7460E+06
Am-241	6.7829E-08	1.9763E-11	4.9383E+13	2.5097E+03
Cm-242	1.7214E-05	5.1940E-12	1.2925E+13	6.3693E+05
Cm-244	1.1378E-06	1.4064E-11	3.4711E+13	4.2099E+04

Environment Transport Group Inventory:

Time (h) = 1.0000	Total Release	Release Rate/s	
Noble gases (atoms)	1.5349E+20	4.2636E+16	
Elemental I (atoms)	2.5563E+16	7.1007E+12	
Organic I (atoms)	1.1522E+15	3.2005E+11	
Aerosols (kg)	2.8990E-05	8.0529E-09	
Dose Effective (Ci) I-131 (Thyroid)			1.5266E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.9403E+01
Total I (Ci)			8.8540E+01

RB to Environment Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5349E+20
Elemental I (atoms)	1.5585E+17	2.5568E+16
Organic I (atoms)	1.6513E+16	1.1524E+15
Aerosols (kg)	1.7530E-04	2.8990E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2462E+16
Elemental I (atoms)	0.0000E+00	7.2798E+13
Organic I (atoms)	0.0000E+00	2.2516E+12
Aerosols (kg)	0.0000E+00	8.2694E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.5731E+13
Elemental I (atoms)	1.4275E+09	4.4149E+07
Organic I (atoms)	1.7780E+08	5.4989E+06
Aerosols (kg)	1.5994E-12	4.9466E-14

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	6.2516E+15	0.0000E+00
Elemental I (atoms)	3.6320E+13	0.0000E+00
Organic I (atoms)	1.1233E+12	0.0000E+00
Aerosols (kg)	4.1512E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	2.3690E-12	7.4502E-20	7.7355E+05	5.3284E+01
Co-60	2.8365E-12	2.5093E-18	2.5186E+07	6.3796E+01
Kr-85	3.0168E-04	7.6894E-10	5.4478E+15	4.1510E+10
Kr-85m	4.2597E-03	5.1761E-13	3.6672E+12	6.2610E+11
Kr-87	5.7861E-03	2.0427E-13	1.4140E+12	1.0097E+12
Kr-88	1.0604E-02	8.4567E-13	5.7872E+12	1.6200E+12
Rb-86	3.7338E-05	4.5888E-13	3.2133E+12	5.1911E+09
Sr-89	4.0153E-09	1.3821E-16	9.3520E+08	9.0316E+04
Sr-90	5.2824E-10	3.8726E-15	2.5912E+10	1.1881E+04
Sr-91	4.6456E-09	1.2816E-18	8.4810E+06	1.0543E+05
Sr-92	4.0327E-09	3.2083E-19	2.1001E+06	9.3616E+04
Y-90	7.3826E-12	1.3569E-20	9.0796E+04	1.5508E+02
Y-91	5.1279E-11	2.0910E-18	1.3838E+07	1.1515E+03
Y-92	3.2148E-10	3.3409E-20	2.1869E+05	5.8076E+03
Y-93	5.3720E-11	1.6102E-20	1.0427E+05	1.2185E+03
Zr-95	6.2221E-11	2.8963E-18	1.8360E+07	1.3995E+03
Zr-97	5.7843E-11	3.0258E-20	1.8785E+05	1.3075E+03
Nb-95	6.2372E-11	1.5951E-18	1.0111E+07	1.4028E+03
Mo-99	7.8838E-10	1.6438E-18	9.9991E+06	1.7755E+04
Tc-99m	7.0306E-10	1.3371E-19	8.1333E+05	1.5806E+04
Ru-103	6.9080E-10	2.1404E-17	1.2514E+08	1.5538E+04
Ru-105	4.2166E-10	6.2728E-20	3.5977E+05	9.6679E+03
Ru-106	3.0068E-10	8.9874E-17	5.1060E+08	6.7627E+03
Rh-105	4.6180E-10	5.4712E-19	3.1379E+06	1.0387E+04
Sb-127	7.8768E-10	2.9495E-18	1.3986E+07	1.7732E+04
Sb-129	2.0886E-09	3.7142E-19	1.7339E+06	4.7914E+04
Te-127	7.8403E-10	2.9708E-19	1.4087E+06	1.7628E+04
Te-127m	1.3454E-10	1.4264E-17	6.7636E+07	3.0260E+03
Te-129	2.1763E-09	1.0392E-19	4.8513E+05	4.9254E+04
Te-129m	4.4335E-10	1.4717E-17	6.8703E+07	9.9714E+03
Te-131m	1.6297E-09	2.0438E-18	9.3954E+06	3.6758E+04
Te-132	1.1861E-08	3.9067E-17	1.7823E+08	2.6705E+05
I-131	1.5301E-02	1.2342E-10	5.6735E+14	2.1291E+12
I-132	1.7001E-02	1.6470E-12	7.5142E+12	2.6871E+12
I-133	3.0909E-02	2.7285E-11	1.2355E+14	4.3556E+12
I-134	1.6524E-02	6.1941E-13	2.7837E+12	3.2578E+12
I-135	2.7193E-02	7.7433E-12	3.4542E+13	3.9507E+12
Xe-133	3.2281E-02	1.7246E-10	7.8088E+14	4.4423E+12
Xe-135	1.4077E-02	5.5122E-12	2.4589E+13	1.8915E+12
Cs-134	4.0907E-03	3.1617E-09	1.4209E+16	5.6837E+11
Cs-136	1.2212E-03	1.6662E-11	7.3779E+13	1.6983E+11

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Cs-137                 3.2919E-03  3.7846E-08  1.6636E+17  4.5738E+11
Ba-139                 3.8622E-09  2.3612E-19  1.0230E+06  9.2493E+04
Ba-140                 6.1860E-09  8.4498E-17  3.6347E+08  1.3917E+05
La-140                 1.0079E-10  1.8132E-19  7.7997E+05  2.0633E+03
La-141                 4.8857E-11  8.6390E-21  3.6898E+04  1.1230E+03
La-142                 3.6385E-11  2.5417E-21  1.0779E+04  8.6549E+02
Ce-141                 1.4629E-10  5.1341E-18  2.1928E+07  3.2903E+03
Ce-143                 1.3842E-10  2.0844E-19  8.7781E+05  3.1213E+03
Ce-144                 1.1748E-10  3.6833E-17  1.5404E+08  2.6423E+03
Pr-143                 5.4995E-11  8.1670E-19  3.4393E+06  1.2366E+03
Nd-147                 2.2880E-11  2.8282E-19  1.1586E+06  5.1476E+02
Np-239                 1.6444E-09  7.0883E-18  1.7861E+07  3.7041E+04
Pu-238                 4.7431E-13  2.7705E-17  7.0103E+07  1.0668E+01
Pu-239                 4.1546E-14  6.6841E-16  1.6842E+09  9.3440E-01
Pu-240                 7.7811E-14  3.4148E-16  8.5684E+08  1.7501E+00
Pu-241                 1.6771E-11  1.6281E-16  4.0682E+08  3.7720E+02
Am-241                 1.1236E-14  3.2738E-18  8.1807E+06  2.5271E-01
Cm-242                 2.8515E-12  8.6037E-19  2.1410E+06  6.4136E+01
Cm-244                 1.8848E-13  2.3297E-18  5.7500E+06  4.2392E+00

CR Transport Group Inventory:
Time (h) =   1.0000    Atmosphere     Sump
Noble gases (atoms)    6.2642E+15  0.0000E+00
Elemental I (atoms)    3.5683E+13  0.0000E+00
Organic I (atoms)      1.1037E+12  0.0000E+00
Aerosols (kg)          4.1178E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.4652E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.3425E-12
Total I (Ci)                                   1.0693E-01

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2462E+16
Elemental I (atoms)    0.0000E+00  7.2798E+13
Organic I (atoms)      0.0000E+00  2.2516E+12
Aerosols (kg)          0.0000E+00  8.2694E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.5731E+13
Elemental I (atoms)    1.4275E+09  4.4149E+07
Organic I (atoms)      1.7780E+08  5.4989E+06
Aerosols (kg)          1.5994E-12  4.9466E-14

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    6.2516E+15  0.0000E+00
Elemental I (atoms)    3.6320E+13  0.0000E+00
Organic I (atoms)      1.1233E+12  0.0000E+00
Aerosols (kg)          4.1512E-08  0.0000E+00

EAB Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.0381E-02  1.0227E-01  7.5822E-02
Accumulated dose (rem)  7.9623E-02  4.0866E-01  9.8709E-02

LPZ Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7400E-02  3.9816E-02  2.9519E-02
Accumulated dose (rem)  3.0998E-02  1.5910E-01  3.8429E-02

CR Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
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Delta dose (rem)	1.0983E-03	6.5340E+00	2.8951E-01
Accumulated dose (rem)	3.3354E-03	1.7286E+01	7.6573E-01

DW Compartment Nuclide Inventory:

Time (h) = 1.8800	Ci	kg	Atoms	Decay
Co-58	2.1955E+01	6.9045E-07	7.1689E+18	3.9531E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	4.7336E+15
Kr-85	1.2560E+06	3.2014E+00	2.2682E+25	1.2927E+20
Kr-85m	1.5477E+07	1.8807E-03	1.3325E+22	1.7247E+21
Kr-87	1.4911E+07	5.2643E-04	3.6439E+21	2.0614E+21
Kr-88	3.5616E+07	2.8404E-03	1.9437E+22	4.1616E+21
Rb-86	7.5653E+02	9.2977E-06	6.5107E+19	3.0077E+17
Sr-89	3.7207E+04	1.2807E-03	8.6657E+21	6.7002E+18
Sr-90	4.8973E+03	3.5902E-02	2.4023E+23	8.8155E+17
Sr-91	4.0390E+04	1.1142E-05	7.3736E+19	7.6414E+18
Sr-92	2.9851E+04	2.3749E-06	1.5546E+19	6.4199E+18
Y-90	5.5252E+01	1.0155E-07	6.7952E+17	9.2170E+15
Y-91	4.7296E+02	1.9286E-05	1.2763E+20	8.5040E+16
Y-92	9.7894E+02	1.0174E-07	6.6594E+17	1.0121E+17
Y-93	4.6885E+02	1.4053E-07	9.0998E+17	8.8436E+16
Zr-95	5.7661E+02	2.6840E-05	1.7014E+20	1.0383E+17
Zr-97	5.1724E+02	2.7057E-07	1.6798E+18	9.5739E+16
Nb-95	5.7824E+02	1.4787E-05	9.3739E+19	1.0409E+17
Mo-99	7.2417E+03	1.5099E-05	9.1847E+19	1.3129E+18
Tc-99m	6.5103E+03	1.2381E-06	7.5314E+18	1.1685E+18
Ru-103	6.4001E+03	1.9831E-04	1.1594E+21	1.1527E+18
Ru-105	3.4074E+03	5.0690E-07	2.9072E+18	6.8291E+17
Ru-106	2.7874E+03	8.3315E-04	4.7333E+21	5.0178E+17
Rh-105	4.2705E+03	5.0595E-06	2.9018E+19	7.6976E+17
Sb-127	7.2544E+03	2.7165E-05	1.2881E+20	1.3125E+18
Sb-129	1.6813E+04	2.9899E-06	1.3958E+19	3.3800E+18
Te-127	7.2653E+03	2.7530E-06	1.3054E+19	1.3051E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.2453E+17
Te-129	1.8869E+04	9.0099E-07	4.2061E+18	3.5192E+18
Te-129m	4.1101E+03	1.3643E-04	6.3692E+20	7.3985E+17
Te-131m	1.4805E+04	1.8566E-05	8.5350E+19	2.7071E+18
Te-132	1.0910E+05	3.5937E-04	1.6395E+21	1.9758E+19
I-131	4.1577E+05	3.3537E-03	1.5417E+22	1.4058E+20
I-132	5.9040E+05	5.7197E-05	2.6095E+20	2.0005E+20
I-133	8.1745E+05	7.2162E-04	3.2674E+21	2.8604E+20
I-134	2.2441E+05	8.4123E-06	3.7806E+19	2.0137E+20
I-135	6.7531E+05	1.9229E-04	8.5779E+20	2.5653E+20
Xe-133	1.3384E+08	7.1501E-01	3.2375E+24	1.3797E+22
Xe-135	5.5691E+07	2.1808E-02	9.7281E+22	5.7856E+21
Cs-134	8.2995E+04	6.4147E-02	2.8828E+23	3.2937E+19
Cs-136	2.4729E+04	3.3740E-04	1.4940E+21	9.8390E+18
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.6505E+19
Ba-139	2.3002E+04	1.4062E-06	6.0924E+18	5.9303E+18
Ba-140	5.7235E+04	7.8181E-04	3.3630E+21	1.0319E+19
La-140	6.8881E+02	1.2392E-06	5.3306E+18	1.1048E+17
La-141	3.8783E+02	6.8577E-08	2.9289E+17	7.8841E+16
La-142	2.2710E+02	1.5864E-08	6.7279E+16	5.6261E+16
Ce-141	1.3561E+03	4.7594E-05	2.0328E+20	2.4415E+17
Ce-143	1.2598E+03	1.8970E-06	7.9890E+18	2.3003E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	1.9605E+17
Pr-143	5.0943E+02	7.5652E-06	3.1859E+19	9.1674E+16
Nd-147	2.1163E+02	2.6159E-06	1.0717E+19	3.8162E+16
Np-239	1.5082E+04	6.5009E-05	1.6380E+20	2.7375E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	7.9155E+14
Pu-239	3.8521E-01	6.1974E-03	1.5616E+22	6.9335E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.2985E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	2.7988E+16
Am-241	1.0418E-01	3.0353E-05	7.5846E+19	1.8751E+13
Cm-242	2.6432E+01	7.9751E-06	1.9846E+19	4.7585E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.1454E+14

DW Transport Group Inventory:

Time (h) = 1.8800	Atmosphere	Sump
Noble gases (atoms)	2.6053E+25	0.0000E+00
Elemental I (atoms)	8.9615E+20	4.4848E+22
Organic I (atoms)	1.3915E+21	0.0000E+00

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Aerosols (kg)          8.8766E-01  4.5260E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          1.3540E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.6847E-04
Total I (Ci)                                    2.7233E+06

DW to  RB Transport Group Inventory:
Time (h) =   1.8800  Leakage Transport

Noble gases (atoms)      1.2073E+22
Elemental I (atoms)      1.5092E+18
Organic I (atoms)        7.5412E+17
Aerosols (kg)            1.5955E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   1.8800    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  6.3744E+21
Elemental I (atoms)    0.0000E+00  7.9687E+17
Organic I (atoms)      0.0000E+00  3.9817E+17
Aerosols (kg)          0.0000E+00  8.4241E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   1.8800    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  6.3744E+21
Elemental I (atoms)    0.0000E+00  7.9687E+17
Organic I (atoms)      0.0000E+00  3.9817E+17
Aerosols (kg)          0.0000E+00  8.4241E-04

RB Compartment Nuclide Inventory:

Time (h) =   1.8800       Ci           kg          Atoms       Decay
Co-58                  1.4878E-02  4.6791E-10  4.8583E+15  1.4976E+12
Co-60                  1.7821E-02  1.5765E-08  1.5823E+17  1.7934E+12
Kr-85                  4.9534E+02  1.2625E-03  8.9450E+21  3.7173E+16
Kr-85m                 6.1038E+03  7.4169E-07  5.2548E+18  4.8760E+17
Kr-87                  5.8806E+03  2.0761E-07  1.4370E+18  5.5596E+17
Kr-88                  1.4046E+04  1.1201E-06  7.6655E+18  1.1645E+18
Rb-86                  9.6028E-01  1.1802E-08  8.2641E+16  1.7897E+14
Sr-89                  2.5215E+01  8.6791E-07  5.8726E+18  2.5382E+15
Sr-90                  3.3188E+00  2.4330E-05  1.6280E+20  3.3399E+14
Sr-91                  2.7372E+01  7.5509E-09  4.9970E+16  2.8511E+15
Sr-92                  2.0230E+01  1.6094E-09  1.0535E+16  2.3027E+15
Y-90                   5.8732E-02  1.0795E-10  7.2233E+14  4.8909E+12
Y-91                   3.2402E-01  1.3213E-08  8.7437E+16  3.2450E+13
Y-92                   3.1149E+00  3.2372E-10  2.1190E+15  2.1211E+14
Y-93                   3.1773E-01  9.5234E-11  6.1668E+14  3.3027E+13
Zr-95                  3.9076E-01  1.8189E-08  1.1530E+17  3.9332E+13
Zr-97                  3.5053E-01  1.8336E-10  1.1384E+15  3.5962E+13
Nb-95                  3.9186E-01  1.0021E-08  6.3526E+16  3.9434E+13
Mo-99                  4.9076E+00  1.0232E-08  6.2244E+16  4.9632E+14
Tc-99m                 4.4119E+00  8.3905E-10  5.1039E+15  4.4213E+14
Ru-103                 4.3373E+00  1.3439E-07  7.8574E+17  4.3663E+14
Ru-105                 2.3091E+00  3.4352E-10  1.9702E+15  2.5032E+14
Ru-106                 1.8890E+00  5.6461E-07  3.2077E+18  1.9010E+14
Rh-105                 2.8941E+00  3.4288E-09  1.9665E+16  2.9146E+14
Sb-127                 4.9162E+00  1.8409E-08  8.7293E+16  4.9648E+14
Sb-129                 1.1394E+01  2.0262E-09  9.4591E+15  1.2378E+15
Te-127                 4.9236E+00  1.8656E-09  8.8466E+15  4.9405E+14
Te-127m                8.4531E-01  8.9616E-08  4.2494E+17  8.5066E+13
Te-129                 1.2787E+01  6.1059E-10  2.8504E+15  1.3069E+15
Te-129m                2.7854E+00  9.2460E-08  4.3163E+17  2.8030E+14
Te-131m                1.0033E+01  1.2582E-08  5.7841E+16  1.0207E+15
Te-132                 7.3938E+01  2.4354E-07  1.1111E+18  7.4717E+15
I-131                  4.5775E+02  3.6923E-06  1.6974E+19  7.9628E+16
I-132                  5.0062E+02  4.8499E-08  2.2127E+17  9.5611E+16
I-133                  9.0046E+02  7.9489E-07  3.5992E+18  1.6020E+17
I-134                  2.4720E+02  9.2665E-09  4.1645E+16  8.2908E+16
I-135                  7.4388E+02  2.1182E-07  9.4489E+17  1.3973E+17
Xe-133                 5.2725E+04  2.8168E-04  1.2754E+21  3.9629E+18
Xe-135                 2.1399E+04  8.3794E-06  3.7379E+19  1.6292E+18
Cs-134                 1.0535E+02  8.1423E-05  3.6592E+20  1.9611E+16
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Cs-136	3.1388E+01	4.2827E-07	1.8964E+18	5.8530E+15
Cs-137	8.4779E+01	9.7468E-04	4.2844E+21	1.5782E+16
Ba-139	1.5588E+01	9.5298E-10	4.1288E+15	2.0119E+15
Ba-140	3.8788E+01	5.2982E-07	2.2790E+18	3.9075E+15
La-140	8.6149E-01	1.5499E-09	6.6670E+15	6.7823E+13
La-141	2.6283E-01	4.6474E-11	1.9849E+14	2.8773E+13
La-142	1.5390E-01	1.0751E-11	4.5594E+13	1.9322E+13
Ce-141	9.1880E-01	3.2246E-08	1.3772E+17	9.2480E+13
Ce-143	8.5375E-01	1.2856E-09	5.4141E+15	8.6768E+13
Ce-144	7.3802E-01	2.3139E-07	9.6769E+17	7.4275E+13
Pr-143	3.4590E-01	5.1367E-09	2.1632E+16	3.4775E+13
Nd-147	1.4342E-01	1.7728E-09	7.2626E+15	1.4450E+13
Np-239	1.0221E+01	4.4056E-08	1.1101E+17	1.0345E+15
Pu-238	2.9800E-03	1.7407E-07	4.4044E+17	2.9989E+11
Pu-239	2.6105E-04	4.1999E-06	1.0583E+19	2.6269E+10
Pu-240	4.8886E-04	2.1454E-06	5.3833E+18	4.9197E+10
Pu-241	1.0537E-01	1.0229E-06	2.5559E+18	1.0604E+13
Am-241	7.0606E-05	2.0572E-08	5.1405E+16	7.1047E+09
Cm-242	1.7913E-02	5.4046E-09	1.3449E+16	1.8028E+12
Cm-244	1.1842E-03	1.4637E-08	3.6125E+16	1.1917E+11

RB Transport Group Inventory:

Time (h) = 1.8800	Atmosphere	Sump	
Noble gases (atoms)	1.0272E+22	0.0000E+00	
Elemental I (atoms)	1.0278E+18	0.0000E+00	
Organic I (atoms)	6.1972E+17	0.0000E+00	
Aerosols (kg)	1.0958E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.8846E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.3322E-08
Total I (Ci)			2.8499E+03

DW to RB Transport Group Inventory:

Time (h) = 1.8800	Leakage Transport
Noble gases (atoms)	1.2073E+22
Elemental I (atoms)	1.5092E+18
Organic I (atoms)	7.5412E+17
Aerosols (kg)	1.5955E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7932E+21
Elemental I (atoms)	4.2126E+17	3.3777E+16
Organic I (atoms)	1.2264E+17	4.4348E+15
Aerosols (kg)	4.6173E-04	3.7849E-05

Environment Integral Nuclide Release:

Time (h) = 1.8800	Ci	kg	Atoms	Bq
Co-58	1.0802E-04	3.3972E-12	3.5273E+13	3.9969E+06
Co-60	1.2936E-04	1.1444E-10	1.1486E+15	4.7864E+06
Kr-85	8.6435E+01	2.2031E-04	1.5609E+21	3.1981E+12
Kr-85m	1.1258E+03	1.3680E-07	9.6921E+17	4.1655E+13
Kr-87	1.2620E+03	4.4554E-08	3.0840E+17	4.6694E+13
Kr-88	2.6780E+03	2.1357E-07	1.4615E+18	9.9086E+13
Rb-86	3.4106E-02	4.1916E-10	2.9352E+15	1.2619E+09
Sr-89	1.8308E-01	6.3017E-09	4.2640E+16	6.7739E+09
Sr-90	2.4092E-02	1.7662E-07	1.1818E+18	8.9139E+08
Sr-91	2.0499E-01	5.6549E-11	3.7423E+14	7.5847E+09
Sr-92	1.6425E-01	1.3067E-11	8.5535E+13	6.0771E+09
Y-90	3.8098E-04	7.0025E-13	4.6855E+12	1.4096E+07
Y-91	2.3453E-03	9.5634E-11	6.3288E+14	8.6776E+07
Y-92	1.8639E-02	1.9370E-12	1.2679E+13	6.8963E+08
Y-93	2.3751E-03	7.1188E-13	4.6097E+12	8.7877E+07
Zr-95	2.8371E-03	1.3206E-10	8.3716E+14	1.0497E+08
Zr-97	2.5893E-03	1.3545E-12	8.4092E+12	9.5805E+07
Nb-95	2.8446E-03	7.2746E-11	4.6114E+14	1.0525E+08
Mo-99	3.5784E-02	7.4610E-11	4.5385E+14	1.3240E+09
Tc-99m	3.2047E-02	6.0946E-12	3.7073E+13	1.1857E+09
Ru-103	3.1495E-02	9.7585E-10	5.7056E+15	1.1653E+09

Ru-105	1.7932E-02	2.6676E-12	1.5300E+13	6.6348E+08
Ru-106	1.3713E-02	4.0987E-09	2.3286E+16	5.0737E+08
Rh-105	2.1036E-02	2.4923E-11	1.4294E+14	7.7833E+08
Sb-127	3.5801E-02	1.3406E-10	6.3569E+14	1.3246E+09
Sb-129	8.8654E-02	1.5765E-11	7.3597E+13	3.2802E+09
Te-127	3.5750E-02	1.3546E-11	6.4234E+13	1.3227E+09
Te-127m	6.1361E-03	6.5053E-10	3.0847E+15	2.2704E+08
Te-129	9.6049E-02	4.5864E-12	2.1411E+13	3.5538E+09
Te-129m	2.0220E-02	6.7119E-10	3.1333E+15	7.4813E+08
Te-131m	7.3549E-02	9.2235E-11	4.2401E+14	2.7213E+09
Te-132	5.3874E-01	1.7745E-09	8.0959E+15	1.9933E+10
I-131	1.4440E+01	1.1648E-07	5.3546E+17	5.3430E+11
I-132	1.8841E+01	1.8253E-09	8.3274E+15	6.9711E+11
I-133	2.9497E+01	2.6039E-08	1.1790E+17	1.0914E+12
I-134	2.2611E+01	8.4758E-10	3.8091E+15	8.3659E+11
I-135	2.6687E+01	7.5992E-09	3.3899E+16	9.8743E+11
Xe-133	9.2116E+03	4.9212E-05	2.2283E+20	3.4083E+14
Xe-135	3.7685E+03	1.4757E-06	6.5828E+18	1.3943E+14
Cs-134	3.7344E+00	2.8863E-06	1.2971E+19	1.3817E+11
Cs-136	1.1158E+00	1.5224E-08	6.7411E+16	4.1283E+10
Cs-137	3.0051E+00	3.4549E-05	1.5187E+20	1.1119E+11
Ba-139	1.4202E-01	8.6828E-12	3.7618E+13	5.2549E+09
Ba-140	2.8183E-01	3.8497E-09	1.6560E+16	1.0428E+10
La-140	5.4154E-03	9.7429E-12	4.1910E+13	2.0037E+08
La-141	2.0594E-03	3.6415E-13	1.5553E+12	7.6197E+07
La-142	1.3670E-03	9.5490E-14	4.0497E+11	5.0577E+07
Ce-141	6.6707E-03	2.3411E-10	9.9990E+14	2.4682E+08
Ce-143	6.2530E-03	9.4159E-12	3.9653E+13	2.3136E+08
Ce-144	5.3576E-03	1.6798E-09	7.0249E+15	1.9823E+08
Pr-143	2.5095E-03	3.7267E-11	1.5694E+14	9.2853E+07
Nd-147	1.0422E-03	1.2883E-11	5.2779E+13	3.8563E+07
Np-239	7.4579E-02	3.2147E-10	8.1002E+14	2.7594E+09
Pu-238	2.1632E-05	1.2636E-09	3.1972E+15	8.0038E+05
Pu-239	1.8949E-06	3.0486E-08	7.6816E+16	7.0111E+04
Pu-240	3.5487E-06	1.5574E-08	3.9078E+16	1.3130E+05
Pu-241	7.6488E-04	7.4251E-09	1.8554E+16	2.8300E+07
Am-241	5.1250E-07	1.4932E-10	3.7313E+14	1.8962E+04
Cm-242	1.3004E-04	3.9236E-11	9.7638E+13	4.8114E+06
Cm-244	8.5960E-06	1.0625E-10	2.6224E+14	3.1805E+05

Environment Transport Group Inventory:

Time (h) = 1.8800	Total Release	Release Rate/s	
Noble gases (atoms)	1.7930E+21	2.6492E+17	
Elemental I (atoms)	3.3757E+16	4.9877E+12	
Organic I (atoms)	4.4289E+15	6.5439E+11	
Aerosols (kg)	3.7849E-05	5.5923E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.0258E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.5610E+01
Total I (Ci)			1.1208E+02

RB to Environment Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7932E+21
Elemental I (atoms)	4.2126E+17	3.3777E+16
Organic I (atoms)	1.2264E+17	4.4348E+15
Aerosols (kg)	4.6173E-04	3.7849E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2749E+16
Elemental I (atoms)	0.0000E+00	7.2799E+13
Organic I (atoms)	0.0000E+00	2.2521E+12
Aerosols (kg)	0.0000E+00	8.2695E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.0067E+14
Elemental I (atoms)	4.5592E+09	1.4101E+08
Organic I (atoms)	1.4301E+09	4.4230E+07
Aerosols (kg)	4.9791E-12	1.5399E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	9.5384E+15	0.0000E+00
Elemental I (atoms)	5.3808E+13	0.0000E+00
Organic I (atoms)	1.6643E+12	0.0000E+00
Aerosols (kg)	6.1820E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.8800	Ci	kg	Atoms	Decay
Co-58	1.4488E-11	4.5564E-19	4.7309E+06	1.0588E+03
Co-60	1.7353E-11	1.5352E-17	1.5408E+08	1.2680E+03
Kr-85	1.8827E-04	4.7987E-10	3.3998E+15	6.8085E+10
Kr-85m	2.3199E-03	2.8190E-13	1.9973E+12	9.7872E+11
Kr-87	2.2351E-03	7.8907E-14	5.4620E+11	1.4220E+12
Kr-88	5.3385E-03	4.2575E-13	2.9135E+12	2.4674E+12
Rb-86	1.8899E-05	2.3226E-13	1.6264E+12	8.2459E+09
Sr-89	2.4554E-08	8.4515E-16	5.7187E+09	1.7944E+06
Sr-90	3.2318E-09	2.3692E-14	1.5853E+11	2.3614E+05
Sr-91	2.6654E-08	7.3530E-18	4.8660E+07	2.0009E+06
Sr-92	1.9699E-08	1.5673E-18	1.0259E+07	1.5852E+06
Y-90	6.4353E-11	1.1828E-19	7.9146E+05	3.9646E+03
Y-91	3.1673E-10	1.2915E-17	8.5468E+07	2.3027E+04
Y-92	3.8683E-09	4.0201E-19	2.6315E+06	2.1085E+05
Y-93	3.0940E-10	9.2737E-20	6.0051E+05	2.3189E+04
Zr-95	3.8052E-10	1.7713E-17	1.1228E+08	2.7808E+04
Zr-97	3.4134E-10	1.7856E-19	1.1085E+06	2.5321E+04
Nb-95	3.8159E-10	9.7586E-18	6.1860E+07	2.7881E+04
Mo-99	4.7790E-09	9.9642E-18	6.0612E+07	3.5054E+05
Tc-99m	4.2963E-09	8.1705E-19	4.9701E+06	3.1245E+05
Ru-103	4.2236E-09	1.3087E-16	7.6514E+08	3.0869E+05
Ru-105	2.2486E-09	3.3451E-19	1.9186E+06	1.7417E+05
Ru-106	1.8394E-09	5.4981E-16	3.1236E+09	1.3441E+05
Rh-105	2.8182E-09	3.3389E-18	1.9150E+07	2.0601E+05
Sb-127	4.7873E-09	1.7927E-17	8.5005E+07	3.5076E+05
Sb-129	1.1096E-08	1.9731E-18	9.2111E+06	8.6083E+05
Te-127	4.7946E-09	1.8167E-18	8.6147E+06	3.4921E+05
Te-127m	8.2315E-10	8.7267E-17	4.1380E+08	6.0144E+04
Te-129	1.2452E-08	5.9458E-19	2.7757E+06	9.1558E+05
Te-129m	2.7124E-09	9.0036E-17	4.2032E+08	1.9818E+05
Te-131m	9.7700E-09	1.2252E-17	5.6324E+07	7.1998E+05
Te-132	7.1999E-08	2.3716E-16	1.0820E+09	5.2780E+06
I-131	7.7306E-03	6.2356E-11	2.8665E+14	3.3799E+12
I-132	6.6097E-03	6.4034E-13	2.9214E+12	3.9276E+12
I-133	1.5213E-02	1.3430E-11	6.0809E+13	6.8532E+12
I-134	4.1765E-03	1.5656E-13	7.0360E+11	4.2699E+12
I-135	1.2568E-02	3.5787E-12	1.5964E+13	6.0881E+12
Xe-133	2.0117E-02	1.0747E-10	4.8663E+14	7.2839E+12
Xe-135	8.9085E-03	3.4884E-12	1.5561E+13	3.1385E+12
Cs-134	2.0733E-03	1.6024E-09	7.2016E+15	9.0324E+11
Cs-136	6.1774E-04	8.4286E-12	3.7322E+13	2.6971E+11
Cs-137	1.6685E-03	1.9182E-08	8.4320E+16	7.2687E+11
Ba-139	1.5179E-08	9.2800E-19	4.0205E+06	1.3473E+06
Ba-140	3.7771E-08	5.1593E-16	2.2193E+09	2.7621E+06
La-140	9.7156E-10	1.7479E-18	7.5188E+06	5.7346E+04
La-141	2.5594E-10	4.5255E-20	1.9329E+05	1.9977E+04
La-142	1.4987E-10	1.0469E-20	4.4399E+04	1.3019E+04
Ce-141	8.9464E-10	3.1398E-17	1.3410E+08	6.5379E+04
Ce-143	8.3137E-10	1.2519E-18	5.2721E+06	6.1218E+04
Ce-144	7.1868E-10	2.2533E-16	9.4232E+08	5.2514E+04
Pr-143	3.3706E-10	5.0054E-18	2.1079E+07	2.4603E+04
Nd-147	1.3966E-10	1.7263E-18	7.0722E+06	1.0214E+04
Np-239	9.9527E-09	4.2901E-17	1.0810E+08	7.3051E+05

Pu-238	2.9019E-12	1.6950E-16	4.2890E+08	2.1203E+02
Pu-239	2.5421E-13	4.0898E-15	1.0305E+10	1.8573E+01
Pu-240	4.7605E-13	2.0892E-15	5.2422E+09	3.4784E+01
Pu-241	1.0261E-10	9.9605E-16	2.4889E+09	7.4971E+03
Am-241	6.8757E-14	2.0033E-17	5.0059E+07	5.0235E+00
Cm-242	1.7443E-11	5.2630E-18	1.3097E+07	1.2746E+03
Cm-244	1.1531E-12	1.4253E-17	3.5178E+07	8.4256E+01

CR Transport Group Inventory:

Time (h) = 1.8800	Atmosphere	Sump	
Noble gases (atoms)	3.9075E+15	0.0000E+00	
Elemental I (atoms)	1.7802E+13	0.0000E+00	
Organic I (atoms)	5.5105E+11	0.0000E+00	
Aerosols (kg)	2.0870E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7309E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.5986E-12
Total I (Ci)			4.6298E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2749E+16
Elemental I (atoms)	0.0000E+00	7.2799E+13
Organic I (atoms)	0.0000E+00	2.2521E+12
Aerosols (kg)	0.0000E+00	8.2695E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.0067E+14
Elemental I (atoms)	4.5592E+09	1.4101E+08
Organic I (atoms)	1.4301E+09	4.4230E+07
Aerosols (kg)	4.9791E-12	1.5399E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	9.5384E+15	0.0000E+00
Elemental I (atoms)	5.3808E+13	0.0000E+00
Organic I (atoms)	1.6643E+12	0.0000E+00
Aerosols (kg)	6.1820E-08	0.0000E+00

EAB Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.7205E-02	1.5862E-02	1.8088E-02
Accumulated dose (rem)	9.6828E-02	4.2452E-01	1.1680E-01

LPZ Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.6983E-03	6.1753E-03	7.0419E-03
Accumulated dose (rem)	3.7697E-02	1.6527E-01	4.5471E-02

CR Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.9084E-05	5.8915E-01	2.6125E-02
Accumulated dose (rem)	3.4245E-03	1.7875E+01	7.9185E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.1954E+01	6.9041E-07	7.1686E+18	4.3041E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	5.1539E+15
Kr-85	1.3592E+06	3.4645E+00	2.4546E+25	1.5077E+20
Kr-85m	1.6441E+07	1.9978E-03	1.4154E+22	1.9872E+21
Kr-87	1.5115E+07	5.3361E-04	3.6937E+21	2.3084E+21
Kr-88	3.7430E+07	2.9850E-03	2.0428E+22	4.7622E+21

Rb-86	7.5639E+02	9.2960E-06	6.5095E+19	3.1286E+17
Sr-89	3.7204E+04	1.2806E-03	8.6651E+21	7.2949E+18
Sr-90	4.8972E+03	3.5902E-02	2.4023E+23	9.5983E+17
Sr-91	4.0038E+04	1.1045E-05	7.3093E+19	8.2842E+18
Sr-92	2.8949E+04	2.3031E-06	1.5076E+19	6.8898E+18
Y-90	5.5979E+01	1.0289E-07	6.8847E+17	1.0034E+16
Y-91	4.7305E+02	1.9289E-05	1.2765E+20	9.2589E+16
Y-92	1.0393E+03	1.0801E-07	7.0704E+17	1.0944E+17
Y-93	4.6500E+02	1.3938E-07	9.0251E+17	9.5900E+16
Zr-95	5.7658E+02	2.6839E-05	1.7013E+20	1.1304E+17
Zr-97	5.1470E+02	2.6924E-07	1.6716E+18	1.0399E+17
Nb-95	5.7823E+02	1.4787E-05	9.3739E+19	1.1333E+17
Mo-99	7.2326E+03	1.5080E-05	9.1732E+19	1.4286E+18
Tc-99m	6.5087E+03	1.2378E-06	7.5296E+18	1.2721E+18
Ru-103	6.3996E+03	1.9829E-04	1.1593E+21	1.2550E+18
Ru-105	3.3441E+03	4.9749E-07	2.8533E+18	7.3686E+17
Ru-106	2.7873E+03	8.3314E-04	4.7333E+21	5.4633E+17
Rh-105	4.2684E+03	5.0571E-06	2.9004E+19	8.3795E+17
Sb-127	7.2478E+03	2.7140E-05	1.2869E+20	1.4284E+18
Sb-129	1.6493E+04	2.9329E-06	1.3692E+19	3.6462E+18
Te-127	7.2647E+03	2.7527E-06	1.3053E+19	1.4208E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.4447E+17
Te-129	1.8663E+04	8.9118E-07	4.1603E+18	3.8127E+18
Te-129m	4.1101E+03	1.3643E-04	6.3691E+20	8.0555E+17
Te-131m	1.4764E+04	1.8515E-05	8.5114E+19	2.9434E+18
Te-132	1.0899E+05	3.5899E-04	1.6378E+21	2.1501E+19
I-131	4.1769E+05	3.3692E-03	1.5488E+22	1.4725E+20
I-132	5.9120E+05	5.7275E-05	2.6130E+20	2.0958E+20
I-133	8.1825E+05	7.2232E-04	3.2706E+21	2.9914E+20
I-134	2.0512E+05	7.6890E-06	3.4555E+19	2.0480E+20
I-135	6.7019E+05	1.9084E-04	8.5129E+20	2.6730E+20
Xe-133	1.4478E+08	7.7349E-01	3.5023E+24	1.6087E+22
Xe-135	6.0157E+07	2.3557E-02	1.0508E+23	6.7404E+21
Cs-134	8.2994E+04	6.4146E-02	2.8828E+23	3.4263E+19
Cs-136	2.4722E+04	3.3731E-04	1.4936E+21	1.0234E+19
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.7573E+19
Ba-139	2.1655E+04	1.3239E-06	5.7356E+18	6.2871E+18
Ba-140	5.7220E+04	7.8160E-04	3.3621E+21	1.1233E+19
La-140	7.0228E+02	1.2635E-06	5.4349E+18	1.2026E+17
La-141	3.7971E+02	6.7141E-08	2.8676E+17	8.4975E+16
La-142	2.1517E+02	1.5031E-08	6.3745E+16	5.9795E+16
Ce-141	1.3561E+03	4.7593E-05	2.0327E+20	2.6583E+17
Ce-143	1.2566E+03	1.8923E-06	7.9689E+18	2.5014E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	2.1346E+17
Pr-143	5.0945E+02	7.5655E-06	3.1861E+19	9.9814E+16
Nd-147	2.1156E+02	2.6151E-06	1.0713E+19	4.1544E+16
Np-239	1.5059E+04	6.4914E-05	1.6356E+20	2.9783E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	8.6183E+14
Pu-239	3.8521E-01	6.1975E-03	1.5616E+22	7.5492E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.4138E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	3.0473E+16
Am-241	1.0418E-01	3.0353E-05	7.5847E+19	2.0416E+13
Cm-242	2.6431E+01	7.9749E-06	1.9846E+19	5.1810E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.4247E+14

DW Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8191E+25	0.0000E+00	
Elemental I (atoms)	8.9461E+20	4.8074E+22	
Organic I (atoms)	1.4880E+21	0.0000E+00	
Aerosols (kg)	8.8765E-01	4.8455E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3585E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6880E-04
Total I (Ci)			2.7024E+06

DW to RB Transport Group Inventory:

Time (h) = 2.0000	Leakage Transport
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5764E+18
Organic I (atoms)	8.6218E+17
Aerosols (kg)	1.6620E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3236E+17
Organic I (atoms)	0.0000E+00	4.5523E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3236E+17
Organic I (atoms)	0.0000E+00	4.5523E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.5907E-02	5.0025E-10	5.1941E+15	1.7496E+12
Co-60	1.9053E-02	1.6856E-08	1.6918E+17	2.0952E+12
Kr-85	5.7203E+02	1.4580E-03	1.0330E+22	4.6145E+16
Kr-85m	6.9191E+03	8.4076E-07	5.9567E+18	5.9712E+17
Kr-87	6.3610E+03	2.2457E-07	1.5545E+18	6.5901E+17
Kr-88	1.5752E+04	1.2562E-06	8.5968E+18	1.4152E+18
Rb-86	9.7796E-01	1.2019E-08	8.4164E+16	1.9457E+14
Sr-89	2.6957E+01	9.2788E-07	6.2784E+18	2.9652E+15
Sr-90	3.5484E+00	2.6013E-05	1.7406E+20	3.9020E+14
Sr-91	2.9010E+01	8.0029E-09	5.2961E+16	3.3126E+15
Sr-92	2.0975E+01	1.6688E-09	1.0923E+16	2.6401E+15
Y-90	6.4720E-02	1.1896E-10	7.9598E+14	5.8594E+12
Y-91	3.4671E-01	1.4138E-08	9.3560E+16	3.7934E+13
Y-92	3.4598E+00	3.5956E-10	2.3536E+15	2.6130E+14
Y-93	3.3692E-01	1.0099E-10	6.5393E+14	3.8386E+13
Zr-95	4.1777E-01	1.9446E-08	1.2327E+17	4.5950E+13
Zr-97	3.7294E-01	1.9508E-10	1.2112E+15	4.1885E+13
Nb-95	4.1897E-01	1.0714E-08	6.7920E+16	4.6070E+13
Mo-99	5.2405E+00	1.0926E-08	6.6465E+16	5.7938E+14
Tc-99m	4.7160E+00	8.9688E-10	5.4557E+15	5.1648E+14
Ru-103	4.6369E+00	1.4367E-07	8.4002E+17	5.1009E+14
Ru-105	2.4230E+00	3.6046E-10	2.0674E+15	2.8906E+14
Ru-106	2.0196E+00	6.0366E-07	3.4296E+18	2.2209E+14
Rh-105	3.0928E+00	3.6642E-09	2.1015E+16	3.4043E+14
Sb-127	5.2515E+00	1.9665E-08	9.3248E+16	5.7971E+14
Sb-129	1.1950E+01	2.1251E-09	9.9205E+15	1.4289E+15
Te-127	5.2637E+00	1.9945E-09	9.4577E+15	5.7717E+14
Te-127m	9.0378E-01	9.5815E-08	4.5434E+17	9.9383E+13
Te-129	1.3523E+01	6.4572E-10	3.0144E+15	1.5176E+15
Te-129m	2.9780E+00	9.8855E-08	4.6149E+17	3.2748E+14
Te-131m	1.0697E+01	1.3415E-08	6.1670E+16	1.1904E+15
Te-132	7.8968E+01	2.6011E-07	1.1867E+18	8.7232E+15
I-131	4.7020E+02	3.7927E-06	1.7435E+19	8.7118E+16
I-132	5.0947E+02	4.9357E-08	2.2518E+17	1.0381E+17
I-133	9.2161E+02	8.1357E-07	3.6838E+18	1.7490E+17
I-134	2.3103E+02	8.6603E-09	3.8921E+16	8.6766E+16
I-135	7.5485E+02	2.1494E-07	9.5883E+17	1.5183E+17
Xe-133	6.0860E+04	3.2514E-04	1.4722E+21	4.9178E+18
Xe-135	2.4617E+04	9.6396E-06	4.3001E+19	2.0167E+18
Cs-134	1.0731E+02	8.2937E-05	3.7273E+20	2.1322E+16
Cs-136	3.1964E+01	4.3613E-07	1.9312E+18	6.3627E+15
Cs-137	8.6357E+01	9.9282E-04	4.3641E+21	1.7159E+16
Ba-139	1.5690E+01	9.5923E-10	4.1558E+15	2.2681E+15
Ba-140	4.1459E+01	5.6632E-07	2.4360E+18	4.5644E+15
La-140	9.5656E-01	1.7210E-09	7.4027E+15	8.1926E+13
La-141	2.7512E-01	4.8648E-11	2.0778E+14	3.3177E+13
La-142	1.5590E-01	1.0891E-11	4.6187E+13	2.1859E+13
Ce-141	9.8231E-01	3.4475E-08	1.4724E+17	1.0804E+14
Ce-143	9.1051E-01	1.3711E-09	5.7740E+15	1.0121E+14
Ce-144	7.8907E-01	2.4740E-07	1.0346E+18	8.6774E+13
Pr-143	3.6988E-01	5.4929E-09	2.3132E+16	4.0632E+13
Nd-147	1.5329E-01	1.8948E-09	7.7625E+15	1.6879E+13

Np-239	1.0912E+01	4.7034E-08	1.1851E+17	1.2075E+15
Pu-238	3.1861E-03	1.8611E-07	4.7091E+17	3.5036E+11
Pu-239	2.7911E-04	4.4905E-06	1.1315E+19	3.0690E+10
Pu-240	5.2268E-04	2.2938E-06	5.7557E+18	5.7476E+10
Pu-241	1.1266E-01	1.0936E-06	2.7327E+18	1.2388E+13
Am-241	7.5492E-05	2.1995E-08	5.4962E+16	8.3005E+09
Cm-242	1.9151E-02	5.7784E-09	1.4379E+16	2.1062E+12
Cm-244	1.2661E-03	1.5649E-08	3.8624E+16	1.3922E+11

RB Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1861E+22	0.0000E+00	
Elemental I (atoms)	1.0512E+18	0.0000E+00	
Organic I (atoms)	6.9992E+17	0.0000E+00	
Aerosols (kg)	1.1180E-03	0.0000E+00	
Dose Effective (Ci/cc) I-131 (Thyroid)			1.9333E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)			2.3890E-08
Total I (Ci)			2.8872E+03

DW to RB Transport Group Inventory:

Time (h) = 2.0000 Leakage Transport	
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5764E+18
Organic I (atoms)	8.6218E+17
Aerosols (kg)	1.6620E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.2367E+21
Elemental I (atoms)	4.6173E+17	3.5028E+16
Organic I (atoms)	1.4832E+17	5.2288E+15
Aerosols (kg)	5.0479E-04	3.9180E-05

Environment Integral Nuclide Release:

Time (h) = 2.0000	Ci	kg	Atoms	Bq
Co-58	1.2654E-04	3.9797E-12	4.1321E+13	4.6822E+06
Co-60	1.5155E-04	1.3407E-10	1.3456E+15	5.6073E+06
Kr-85	1.0782E+02	2.7482E-04	1.9470E+21	3.9894E+12
Kr-85m	1.3851E+03	1.6831E-07	1.1925E+18	5.1249E+13
Kr-87	1.5019E+03	5.3023E-08	3.6703E+17	5.5571E+13
Kr-88	3.2692E+03	2.6072E-07	1.7842E+18	1.2096E+14
Rb-86	3.5272E-02	4.3349E-10	3.0355E+15	1.3051E+09
Sr-89	2.1447E-01	7.3822E-09	4.9951E+16	7.9353E+09
Sr-90	2.8223E-02	2.0690E-07	1.3845E+18	1.0443E+09
Sr-91	2.3881E-01	6.5879E-11	4.3597E+14	8.8360E+09
Sr-92	1.8877E-01	1.5018E-11	9.8307E+13	6.9845E+09
Y-90	4.5712E-04	8.4019E-13	5.6219E+12	1.6913E+07
Y-91	2.7491E-03	1.1210E-10	7.4185E+14	1.0172E+08
Y-92	2.2768E-02	2.3662E-12	1.5489E+13	8.4243E+08
Y-93	2.7678E-03	8.2960E-13	5.3720E+12	1.0241E+08
Zr-95	3.3235E-03	1.5471E-10	9.8070E+14	1.2297E+08
Zr-97	3.0239E-03	1.5818E-12	9.8204E+12	1.1188E+08
Nb-95	3.3324E-03	8.5221E-11	5.4023E+14	1.2330E+08
Mo-99	4.1887E-02	8.7335E-11	5.3125E+14	1.5498E+09
Tc-99m	3.7538E-02	7.1389E-12	4.3426E+13	1.3889E+09
Ru-103	3.6894E-02	1.1431E-09	6.6837E+15	1.3651E+09
Ru-105	2.0760E-02	3.0884E-12	1.7713E+13	7.6814E+08
Ru-106	1.6064E-02	4.8016E-09	2.7279E+16	5.9437E+08
Rh-105	2.4637E-02	2.9189E-11	1.6741E+14	9.1158E+08
Sb-127	4.1916E-02	1.5696E-10	7.4428E+14	1.5509E+09
Sb-129	1.0260E-01	1.8246E-11	8.5178E+13	3.7964E+09
Te-127	4.1879E-02	1.5869E-11	7.5246E+13	1.5495E+09
Te-127m	7.1885E-03	7.6209E-10	3.6137E+15	2.6597E+08
Te-129	1.1182E-01	5.3393E-12	2.4926E+13	4.1373E+09
Te-129m	2.3687E-02	7.8629E-10	3.6707E+15	8.7643E+08
Te-131m	8.6009E-02	1.0786E-10	4.9584E+14	3.1823E+09
Te-132	6.3070E-01	2.0775E-09	9.4778E+15	2.3336E+10
I-131	1.4999E+01	1.2098E-07	5.5616E+17	5.5495E+11

I-132	1.9442E+01	1.8835E-09	8.5930E+15	7.1935E+11
I-133	3.0592E+01	2.7005E-08	1.2228E+17	1.1319E+12
I-134	2.2889E+01	8.5800E-10	3.8559E+15	8.4687E+11
I-135	2.7585E+01	7.8548E-09	3.5039E+16	1.0206E+12
Xe-133	1.1487E+04	6.1368E-05	2.7787E+20	4.2502E+14
Xe-135	4.6875E+03	1.8355E-06	8.1881E+18	1.7344E+14
Cs-134	3.8623E+00	2.9852E-06	1.3416E+19	1.4290E+11
Cs-136	1.1539E+00	1.5744E-08	6.9713E+16	4.2693E+10
Cs-137	3.1081E+00	3.5733E-05	1.5707E+20	1.1500E+11
Ba-139	1.6045E-01	9.8090E-12	4.2497E+13	5.9365E+09
Ba-140	3.3011E-01	4.5092E-09	1.9396E+16	1.2214E+10
La-140	6.5437E-03	1.1773E-11	5.0641E+13	2.4212E+08
La-141	2.3806E-03	4.2095E-13	1.7979E+12	8.8084E+07
La-142	1.5498E-03	1.0827E-13	4.5915E+11	5.7344E+07
Ce-141	7.8145E-03	2.7426E-10	1.1714E+15	2.8914E+08
Ce-143	7.3135E-03	1.1013E-11	4.6379E+13	2.7060E+08
Ce-144	6.2764E-03	1.9678E-09	8.2296E+15	2.3223E+08
Pr-143	2.9402E-03	4.3663E-11	1.8388E+14	1.0879E+08
Nd-147	1.2207E-03	1.5090E-11	6.1817E+13	4.5167E+07
Np-239	8.7287E-02	3.7625E-10	9.4805E+14	3.2296E+09
Pu-238	2.5342E-05	1.4803E-09	3.7455E+15	9.3764E+05
Pu-239	2.2199E-06	3.5714E-08	8.9990E+16	8.2136E+04
Pu-240	4.1573E-06	1.8244E-08	4.5780E+16	1.5382E+05
Pu-241	8.9605E-04	8.6984E-09	2.1736E+16	3.3154E+07
Am-241	6.0040E-07	1.7493E-10	4.3712E+14	2.2215E+04
Cm-242	1.5234E-04	4.5964E-11	1.1438E+14	5.6365E+06
Cm-244	1.0070E-05	1.2447E-10	3.0721E+14	3.7260E+05

Environment Transport Group Inventory:

Time (h) = 2.0000	Total Release	Release Rate/s	
Noble gases (atoms)	2.2364E+21	3.1062E+17	
Elemental I (atoms)	3.5006E+16	4.8620E+12	
Organic I (atoms)	5.2217E+15	7.2524E+11	
Aerosols (kg)	3.9180E-05	5.4417E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.1028E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.6562E+01
Total I (Ci)			1.1551E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.2367E+21
Elemental I (atoms)	4.6173E+17	3.5028E+16
Organic I (atoms)	1.4832E+17	5.2288E+15
Aerosols (kg)	5.0479E-04	3.9180E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2826E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2523E+12
Aerosols (kg)	0.0000E+00	8.2695E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	8.7510E+14
Elemental I (atoms)	5.0367E+09	1.5577E+08
Organic I (atoms)	1.7330E+09	5.3599E+07
Aerosols (kg)	5.4872E-12	1.6971E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	9.8953E+15	0.0000E+00

Elemental I (atoms)	5.5383E+13	0.0000E+00
Organic I (atoms)	1.7131E+12	0.0000E+00
Aerosols (kg)	6.3667E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.6508E-11	5.1916E-19	5.3904E+06	1.3182E+03
Co-60	1.9773E-11	1.7493E-17	1.7557E+08	1.5787E+03
Kr-85	1.8322E-04	4.6701E-10	3.3087E+15	7.1025E+10
Kr-85m	2.2162E-03	2.6930E-13	1.9080E+12	1.0146E+12
Kr-87	2.0375E-03	7.1930E-14	4.9790E+11	1.4558E+12
Kr-88	5.0455E-03	4.0237E-13	2.7536E+12	2.5496E+12
Rb-86	1.7223E-05	2.1167E-13	1.4822E+12	8.5249E+09
Sr-89	2.7976E-08	9.6295E-16	6.5158E+09	2.2340E+06
Sr-90	3.6825E-09	2.6996E-14	1.8064E+11	2.9400E+05
Sr-91	3.0107E-08	8.3054E-18	5.4963E+07	2.4760E+06
Sr-92	2.1768E-08	1.7318E-18	1.1336E+07	1.9325E+06
Y-90	7.6109E-11	1.3989E-19	9.3604E+05	5.1004E+03
Y-91	3.6131E-10	1.4733E-17	9.7498E+07	2.8695E+04
Y-92	4.6059E-09	4.7866E-19	3.1332E+06	2.7743E+05
Y-93	3.4966E-10	1.0480E-19	6.7865E+05	2.8705E+04
Zr-95	4.3356E-10	2.0182E-17	1.2793E+08	3.4620E+04
Zr-97	3.8703E-10	2.0246E-19	1.2569E+06	3.1417E+04
Nb-95	4.3480E-10	1.1119E-17	7.0487E+07	3.4712E+04
Mo-99	5.4386E-09	1.1339E-17	6.8978E+07	4.3604E+05
Tc-99m	4.8943E-09	9.3078E-19	5.6619E+06	3.8897E+05
Ru-103	4.8122E-09	1.4910E-16	8.7177E+08	3.8430E+05
Ru-105	2.5146E-09	3.7409E-19	2.1455E+06	2.1404E+05
Ru-106	2.0959E-09	6.2648E-16	3.5592E+09	1.6734E+05
Rh-105	3.2097E-09	3.8027E-18	2.1810E+07	2.5642E+05
Sb-127	5.4500E-09	2.0408E-17	9.6772E+07	4.3643E+05
Sb-129	1.2402E-08	2.2054E-18	1.0296E+07	1.0575E+06
Te-127	5.4627E-09	2.0699E-18	9.8152E+06	4.3477E+05
Te-127m	9.3794E-10	9.9437E-17	4.7151E+08	7.4881E+04
Te-129	1.4034E-08	6.7012E-19	3.1284E+06	1.1324E+06
Te-129m	3.0906E-09	1.0259E-16	4.7893E+08	2.4674E+05
Te-131m	1.1102E-08	1.3922E-17	6.4001E+07	8.9464E+05
Te-132	8.1953E-08	2.6994E-16	1.2315E+09	6.5663E+06
I-131	7.0434E-03	5.6813E-11	2.6117E+14	3.4940E+12
I-132	5.8108E-03	5.6295E-13	2.5683E+12	4.0234E+12
I-133	1.3812E-02	1.2192E-11	5.5207E+13	7.0774E+12
I-134	3.4623E-03	1.2979E-13	5.8328E+11	4.3287E+12
I-135	1.1313E-02	3.2212E-12	1.4369E+13	6.2725E+12
Xe-133	1.9569E-02	1.0454E-10	4.7337E+14	7.5978E+12
Xe-135	8.6331E-03	3.3806E-12	1.5080E+13	3.2765E+12
Cs-134	1.8898E-03	1.4606E-09	6.5642E+15	9.3386E+11
Cs-136	5.6292E-04	7.6807E-12	3.4010E+13	2.7883E+11
Cs-137	1.5208E-03	1.7485E-08	7.6858E+16	7.5151E+11
Ba-139	1.6283E-08	9.9549E-19	4.3129E+06	1.6109E+06
Ba-140	4.3027E-08	5.8772E-16	2.5281E+09	3.4382E+06
La-140	1.1583E-09	2.0839E-18	8.9638E+06	7.4433E+04
La-141	2.8552E-10	5.0487E-20	2.1563E+05	2.4510E+04
La-142	1.6180E-10	1.1303E-20	4.7933E+04	1.5630E+04
Ce-141	1.0193E-09	3.5775E-17	1.5279E+08	8.1395E+04
Ce-143	9.4492E-10	1.4229E-18	5.9922E+06	7.6083E+04
Ce-144	8.1889E-10	2.5675E-16	1.0737E+09	6.5380E+04
Pr-143	3.8414E-10	5.7047E-18	2.4024E+07	3.0636E+04
Nd-147	1.5908E-10	1.9664E-18	8.0559E+06	1.2714E+04
Np-239	1.1324E-08	4.8812E-17	1.2299E+08	9.0855E+05
Pu-238	3.3065E-12	1.9314E-16	4.8871E+08	2.6398E+02
Pu-239	2.8966E-13	4.6602E-15	1.1742E+10	2.3124E+01
Pu-240	5.4244E-13	2.3805E-15	5.9732E+09	4.3306E+01
Pu-241	1.1691E-10	1.1350E-15	2.8360E+09	9.3341E+03
Am-241	7.8348E-14	2.2828E-17	5.7042E+07	6.2544E+00
Cm-242	1.9875E-11	5.9968E-18	1.4923E+07	1.5869E+03
Cm-244	1.3139E-12	1.6241E-17	4.0084E+07	1.0490E+02

CR Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump
Noble gases (atoms)	3.8023E+15	0.0000E+00
Elemental I (atoms)	1.6194E+13	0.0000E+00

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Organic I (atoms)      5.0141E+11  0.0000E+00
Aerosols (kg)          1.9022E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         3.3944E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   4.1765E-12
Total I (Ci)                                   4.1441E-02

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2826E+16
Elemental I (atoms)    0.0000E+00  7.2800E+13
Organic I (atoms)      0.0000E+00  2.2523E+12
Aerosols (kg)          0.0000E+00  8.2695E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.7510E+14
Elemental I (atoms)    5.0367E+09  1.5577E+08
Organic I (atoms)      1.7330E+09  5.3599E+07
Aerosols (kg)          5.4872E-12  1.6971E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    9.8953E+15  0.0000E+00
Elemental I (atoms)    5.5383E+13  0.0000E+00
Organic I (atoms)      1.7131E+12  0.0000E+00
Aerosols (kg)          6.3667E-08  0.0000E+00

EAB Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5852E-02  1.3347E-02  1.6598E-02
Accumulated dose (rem)  1.1268E-01  4.3787E-01  1.3340E-01

LPZ Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1713E-03  5.1960E-03  6.4620E-03
Accumulated dose (rem)  4.3868E-02  1.7047E-01  5.1933E-02

CR Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.7429E-05  4.5026E-01  1.9971E-02
Accumulated dose (rem)  3.4920E-03  1.8325E+01  8.1182E-01

DW Compartment Nuclide Inventory:

Time (h) =   2.1000       Ci           kg          Atoms       Decay
Co-58                  1.0928E+00  3.4368E-08  3.5684E+17  4.3186E+15
Co-60                  1.3091E+00  1.1581E-06  1.1623E+19  5.1714E+15
Kr-85                  1.3591E+06  3.4642E+00  2.4543E+25  1.6887E+20
Kr-85m                 1.6187E+07  1.9669E-03  1.3936E+22  2.2045E+21
Kr-87                  1.4312E+07  5.0526E-04  3.4974E+21  2.5043E+21
Kr-88                  3.6524E+07  2.9128E-03  1.9933E+22  5.2547E+21
Rb-86                  3.7648E+01  4.6269E-07  3.2400E+18  3.1336E+17
Sr-89                  1.8520E+03  6.3746E-05  4.3133E+20  7.3195E+18
Sr-90                  2.4379E+02  1.7872E-03  1.1959E+22  9.6308E+17
Sr-91                  1.9787E+03  5.4584E-07  3.6122E+18  8.3106E+18
Sr-92                  1.4047E+03  1.1176E-07  7.3154E+17  6.9087E+18
Y-90                   3.0477E+00  5.6018E-09  3.7483E+16  1.0071E+16
Y-91                   2.3589E+01  9.6188E-07  6.3654E+18  9.2903E+16
Y-92                   7.8596E+01  8.1681E-09  5.3467E+16  1.1012E+17
Y-93                   2.2990E+01  6.8908E-09  4.4621E+16  9.6207E+16
Zr-95                  2.8701E+01  1.3360E-06  8.4691E+18  1.1342E+17
Zr-97                  2.5518E+01  1.3348E-08  8.2871E+16  1.0433E+17
Nb-95                  2.8785E+01  7.3613E-07  4.6664E+18  1.1371E+17
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Mo-99	3.5967E+02	7.4991E-07	4.5617E+18	1.4334E+18
Tc-99m	3.2395E+02	6.1608E-08	3.7476E+17	1.2764E+18
Ru-103	3.1855E+02	9.8703E-06	5.7709E+19	1.2592E+18
Ru-105	1.6390E+02	2.4382E-08	1.3984E+17	7.3906E+17
Ru-106	1.3876E+02	4.1474E-05	2.3563E+20	5.4818E+17
Rh-105	2.1239E+02	2.5164E-07	1.4432E+18	8.4078E+17
Sb-127	3.6054E+02	1.3501E-06	6.4017E+18	1.4332E+18
Sb-129	8.0796E+02	1.4368E-07	6.7074E+17	3.6570E+18
Te-127	3.6162E+02	1.3702E-07	6.4974E+17	1.4256E+18
Te-127m	6.2094E+01	6.5830E-06	3.1215E+19	2.4529E+17
Te-129	9.2061E+02	4.3959E-08	2.0522E+17	3.8247E+18
Te-129m	2.0460E+02	6.7917E-06	3.1706E+19	8.0827E+17
Te-131m	7.3326E+02	9.1956E-07	4.2273E+18	2.9532E+18
Te-132	5.4207E+03	1.7855E-05	8.1459E+19	2.1573E+19
I-131	5.0440E+04	4.0686E-04	1.8703E+21	1.4793E+20
I-132	6.9462E+04	6.7294E-06	3.0701E+19	2.1052E+20
I-133	9.8517E+04	8.6967E-05	3.9378E+20	3.0045E+20
I-134	2.2895E+04	8.5824E-07	3.8570E+18	2.0512E+20
I-135	8.0115E+04	2.2813E-05	1.0176E+20	2.6838E+20
Xe-133	1.4469E+08	7.7298E-01	3.5000E+24	1.8015E+22
Xe-135	5.9695E+07	2.3376E-02	1.0428E+23	7.5386E+21
Cs-134	4.1315E+03	3.1933E-03	1.4351E+22	3.4318E+19
Cs-136	1.2304E+03	1.6788E-05	7.4338E+19	1.0251E+19
Cs-137	3.3249E+03	3.8226E-02	1.6803E+23	2.7617E+19
Ba-139	1.0251E+03	6.2672E-08	2.7152E+17	6.3011E+18
Ba-140	2.8478E+03	3.8900E-05	1.6733E+20	1.1271E+19
La-140	3.9802E+01	7.1609E-08	3.0803E+17	1.2072E+17
La-141	1.8572E+01	3.2839E-09	1.4026E+16	8.5225E+16
La-142	1.0240E+01	7.1536E-10	3.0338E+15	5.9934E+16
Ce-141	6.7503E+01	2.3691E-06	1.0118E+19	2.6673E+17
Ce-143	6.2425E+01	9.4002E-08	3.9587E+17	2.5097E+17
Ce-144	5.4212E+01	1.6997E-05	7.1082E+19	2.1418E+17
Pr-143	2.5369E+01	3.7674E-07	1.5866E+18	1.0015E+17
Nd-147	1.0529E+01	1.3015E-07	5.3318E+17	4.1685E+16
Np-239	7.4875E+02	3.2275E-06	8.1324E+18	2.9883E+18
Pu-238	2.1890E-01	1.2787E-05	3.2354E+19	8.6475E+14
Pu-239	1.9177E-02	3.0852E-04	7.7739E+20	7.5747E+13
Pu-240	3.5911E-02	1.5759E-04	3.9544E+20	1.4186E+14
Pu-241	7.7400E+00	7.5136E-05	1.8775E+20	3.0576E+16
Am-241	5.1862E-03	1.5111E-06	3.7759E+18	2.0485E+13
Cm-242	1.3158E+00	3.9699E-07	9.8792E+17	5.1986E+15
Cm-244	8.6986E-02	1.0752E-06	2.6537E+18	3.4363E+14

DW Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	2.8185E+25	0.0000E+00	
Elemental I (atoms)	4.4456E+19	4.8566E+22	
Organic I (atoms)	1.4852E+21	0.0000E+00	
Aerosols (kg)	4.4188E-02	4.8943E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.6385E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.0325E-05
Total I (Ci)			3.2143E+05

DW to RB Transport Group Inventory:

Time (h) = 2.1000 Leakage Transport

Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5517E+17
Aerosols (kg)	1.6722E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.1000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3549E+17
Organic I (atoms)	0.0000E+00	4.8368E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.1000	Pipe Walls	Transported

Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3549E+17
Organic I (atoms)	0.0000E+00	4.8368E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.5808E-02	4.9713E-10	5.1617E+15	1.9601E+12
Co-60	1.8935E-02	1.6751E-08	1.6813E+17	2.3474E+12
Kr-85	6.3677E+02	1.6230E-03	1.1499E+22	5.4627E+16
Kr-85m	7.5840E+03	9.2156E-07	6.5291E+18	6.9892E+17
Kr-87	6.7053E+03	2.3672E-07	1.6386E+18	7.5081E+17
Kr-88	1.7112E+04	1.3647E-06	9.3390E+18	1.6459E+18
Rb-86	9.6029E-01	1.1802E-08	8.2643E+16	2.0736E+14
Sr-89	2.6788E+01	9.2208E-07	6.2392E+18	3.3220E+15
Sr-90	3.5264E+00	2.5852E-05	1.7298E+20	4.3717E+14
Sr-91	2.8621E+01	7.8955E-09	5.2250E+16	3.6953E+15
Sr-92	2.0319E+01	1.6165E-09	1.0582E+16	2.9142E+15
Y-90	6.7426E-02	1.2393E-10	8.2925E+14	6.7071E+12
Y-91	3.4504E-01	1.4070E-08	9.3108E+16	4.2522E+13
Y-92	3.7039E+00	3.8493E-10	2.5196E+15	3.0571E+14
Y-93	3.3255E-01	9.9675E-11	6.4543E+14	4.2831E+13
Zr-95	4.1516E-01	1.9325E-08	1.2250E+17	5.1480E+13
Zr-97	3.6911E-01	1.9308E-10	1.1987E+15	4.6811E+13
Nb-95	4.1637E-01	1.0648E-08	6.7499E+16	5.1616E+13
Mo-99	5.2026E+00	1.0847E-08	6.5985E+16	6.4872E+14
Tc-99m	4.6859E+00	8.9115E-10	5.4209E+15	5.7855E+14
Ru-103	4.6079E+00	1.4277E-07	8.3476E+17	5.7147E+14
Ru-105	2.3707E+00	3.5268E-10	2.0228E+15	3.2089E+14
Ru-106	2.0071E+00	5.9992E-07	3.4083E+18	2.4883E+14
Rh-105	3.0723E+00	3.6399E-09	2.0876E+16	3.8133E+14
Sb-127	5.2151E+00	1.9528E-08	9.2601E+16	6.4920E+14
Sb-129	1.1687E+01	2.0783E-09	9.7022E+15	1.5858E+15
Te-127	5.2307E+00	1.9820E-09	9.3984E+15	6.4659E+14
Te-127m	8.9819E-01	9.5222E-08	4.5153E+17	1.1135E+14
Te-129	1.3317E+01	6.3587E-10	2.9684E+15	1.6913E+15
Te-129m	2.9596E+00	9.8241E-08	4.5862E+17	3.6690E+14
Te-131m	1.0607E+01	1.3301E-08	6.1147E+16	1.3318E+15
Te-132	7.8409E+01	2.5827E-07	1.1783E+18	9.7681E+15
I-131	4.6397E+02	3.7425E-06	1.7204E+19	9.3299E+16
I-132	4.9335E+02	4.7796E-08	2.1805E+17	1.1045E+17
I-133	9.0669E+02	8.0039E-07	3.6241E+18	1.8700E+17
I-134	2.1071E+02	7.8986E-09	3.5497E+16	8.9687E+16
I-135	7.3733E+02	2.0995E-07	9.3657E+17	1.6170E+17
Xe-133	6.7722E+04	3.6180E-04	1.6382E+21	5.8201E+18
Xe-135	2.7301E+04	1.0691E-05	4.7690E+19	2.3817E+18
Cs-134	1.0538E+02	8.1451E-05	3.6605E+20	2.2726E+16
Cs-136	3.1384E+01	4.2822E-07	1.8962E+18	6.7808E+15
Cs-137	8.4810E+01	9.7503E-04	4.2859E+21	1.8289E+16
Ba-139	1.4828E+01	9.0654E-10	3.9276E+15	2.4706E+15
Ba-140	4.1193E+01	5.6268E-07	2.4204E+18	5.1131E+15
La-140	1.0080E+00	1.8135E-09	7.8007E+15	9.4418E+13
La-141	2.6864E-01	4.7501E-11	2.0288E+14	3.6787E+13
La-142	1.4813E-01	1.0348E-11	4.3883E+13	2.3877E+13
Ce-141	9.7617E-01	3.4260E-08	1.4632E+17	1.2104E+14
Ce-143	9.0297E-01	1.3597E-09	5.7262E+15	1.1325E+14
Ce-144	7.8417E-01	2.4586E-07	1.0282E+18	9.7219E+13
Pr-143	3.6769E-01	5.4603E-09	2.2995E+16	4.5528E+13
Nd-147	1.5230E-01	1.8826E-09	7.7124E+15	1.8908E+13
Np-239	1.0831E+01	4.6686E-08	1.1763E+17	1.3518E+15
Pu-238	3.1664E-03	1.8496E-07	4.6800E+17	3.9254E+11
Pu-239	2.7739E-04	4.4627E-06	1.1245E+19	3.4385E+10
Pu-240	5.1944E-04	2.2796E-06	5.7200E+18	6.4395E+10
Pu-241	1.1196E-01	1.0868E-06	2.7158E+18	1.3880E+13
Am-241	7.5026E-05	2.1860E-08	5.4623E+16	9.2998E+09
Cm-242	1.9032E-02	5.7425E-09	1.4290E+16	2.3597E+12
Cm-244	1.2582E-03	1.5553E-08	3.8385E+16	1.5598E+11

RB Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump
Noble gases (atoms)	1.3202E+22	0.0000E+00

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Elemental I (atoms)    1.0322E+18  0.0000E+00
Organic I (atoms)      7.6710E+17  0.0000E+00
Aerosols (kg)          1.0984E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.9055E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    2.3515E-08
Total I (Ci)                                    2.8121E+03

DW to  RB Transport Group Inventory:
Time (h) =   2.1000  Leakage Transport

Noble gases (atoms)      1.5869E+22
Elemental I (atoms)      1.5867E+18
Organic I (atoms)        9.5517E+17
Aerosols (kg)            1.6722E-03

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.1000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.6556E+21
Elemental I (atoms)    4.9573E+17  3.6080E+16
Organic I (atoms)      1.7212E+17  5.9650E+15
Aerosols (kg)          5.4091E-04  4.0298E-05

Environment Integral Nuclide Release:

Time (h) =   2.1000       Ci           kg          Atoms         Bq
Co-58                  1.4254E-04  4.4826E-12  4.6543E+13  5.2739E+06
Co-60                  1.7070E-04  1.5101E-10  1.5157E+15  6.3160E+06
Kr-85                  1.2802E+02  3.2631E-04  2.3119E+21  4.7369E+12
Kr-85m                 1.6257E+03  1.9755E-07  1.3996E+18  6.0152E+13
Kr-87                  1.7147E+03  6.0534E-08  4.1902E+17  6.3443E+13
Kr-88                  3.8121E+03  3.0402E-07  2.0805E+18  1.4105E+14
Rb-86                  3.6246E-02  4.4547E-10  3.1194E+15  1.3411E+09
Sr-89                  2.4157E-01  8.3150E-09  5.6263E+16  8.9381E+09
Sr-90                  3.1791E-02  2.3306E-07  1.5595E+18  1.1763E+09
Sr-91                  2.6777E-01  7.3866E-11  4.8883E+14  9.9073E+09
Sr-92                  2.0933E-01  1.6654E-11  1.0901E+14  7.7451E+09
Y-90                   5.2551E-04  9.6590E-13  6.4631E+12  1.9444E+07
Y-91                   3.0982E-03  1.2634E-10  8.3606E+14  1.1464E+08
Y-92                   2.6535E-02  2.7577E-12  1.8051E+13  9.8181E+08
Y-93                   3.1042E-03  9.3044E-13  6.0250E+12  1.1486E+08
Zr-95                  3.7435E-03  1.7426E-10  1.1046E+15  1.3851E+08
Zr-97                  3.3973E-03  1.7771E-12  1.1033E+13  1.2570E+08
Nb-95                  3.7537E-03  9.5994E-11  6.0851E+14  1.3889E+08
Mo-99                  4.7150E-02  9.8309E-11  5.9801E+14  1.7446E+09
Tc-99m                 4.2279E-02  8.0405E-12  4.8910E+13  1.5643E+09
Ru-103                 4.1555E-02  1.2876E-09  7.5282E+15  1.5376E+09
Ru-105                 2.3159E-02  3.4452E-12  1.9760E+13  8.5688E+08
Ru-106                 1.8095E-02  5.4085E-09  3.0727E+16  6.6950E+08
Rh-105                 2.7745E-02  3.2872E-11  1.8853E+14  1.0266E+09
Sb-127                 4.7192E-02  1.7672E-10  8.3796E+14  1.7461E+09
Sb-129                 1.1443E-01  2.0349E-11  9.4994E+13  4.2338E+09
Te-127                 4.7171E-02  1.7874E-11  8.4754E+13  1.7453E+09
Te-127m                8.0972E-03  8.5843E-10  4.0705E+15  2.9960E+08
Te-129                 1.2529E-01  5.9826E-12  2.7929E+13  4.6357E+09
Te-129m                2.6681E-02  8.8568E-10  4.1346E+15  9.8721E+08
Te-131m                9.6740E-02  1.2132E-10  5.5771E+14  3.5794E+09
Te-132                 7.1003E-01  2.3387E-09  1.0670E+16  2.6271E+10
I-131                  1.5468E+01  1.2477E-07  5.7358E+17  5.7233E+11
I-132                  1.9941E+01  1.9318E-09  8.8134E+15  7.3780E+11
I-133                  3.1510E+01  2.7816E-08  1.2595E+17  1.1659E+12
I-134                  2.3102E+01  8.6599E-10  3.8919E+15  8.5477E+11
I-135                  2.8331E+01  8.0674E-09  3.5987E+16  1.0483E+12
Xe-133                 1.3635E+04  7.2846E-05  3.2984E+20  5.0451E+14
Xe-135                 5.5520E+03  2.1741E-06  9.6983E+18  2.0543E+14
Cs-134                 3.9693E+00  3.0678E-06  1.3787E+19  1.4686E+11
Cs-136                 1.1857E+00  1.6178E-08  7.1638E+16  4.3871E+10
Cs-137                 3.1942E+00  3.6722E-05  1.6142E+20  1.1818E+11
Ba-139                 1.7545E-01  1.0726E-11  4.6471E+13  6.4915E+09
Ba-140                 3.7178E-01  5.0784E-09  2.1845E+16  1.3756E+10
La-140                 7.5668E-03  1.3614E-11  5.8559E+13  2.7997E+08
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La-141	2.6524E-03	4.6901E-13	2.0031E+12	9.8139E+07
La-142	1.6997E-03	1.1873E-13	5.0355E+11	6.2888E+07
Ce-141	8.8020E-03	3.0891E-10	1.3194E+15	3.2568E+08
Ce-143	8.2270E-03	1.2389E-11	5.2172E+13	3.0440E+08
Ce-144	7.0697E-03	2.2166E-09	9.2698E+15	2.6158E+08
Pr-143	3.3122E-03	4.9187E-11	2.0714E+14	1.2255E+08
Nd-147	1.3748E-03	1.6994E-11	6.9620E+13	5.0868E+07
Np-239	9.8244E-02	4.2348E-10	1.0671E+15	3.6350E+09
Pu-238	2.8545E-05	1.6674E-09	4.2190E+15	1.0562E+06
Pu-239	2.5005E-06	4.0229E-08	1.0137E+17	9.2519E+04
Pu-240	4.6828E-06	2.0551E-08	5.1566E+16	1.7326E+05
Pu-241	1.0093E-03	9.7980E-09	2.4483E+16	3.7345E+07
Am-241	6.7630E-07	1.9705E-10	4.9238E+14	2.5023E+04
Cm-242	1.7159E-04	5.1773E-11	1.2884E+14	6.3489E+06
Cm-244	1.1343E-05	1.4021E-10	3.4604E+14	4.1970E+05

Environment Transport Group Inventory:

Time (h) = 2.1000	Total Release	Release Rate/s	
Noble gases (atoms)	2.6553E+21	3.5123E+17	
Elemental I (atoms)	3.6054E+16	4.7690E+12	
Organic I (atoms)	5.9567E+15	7.8793E+11	
Aerosols (kg)	4.0295E-05	5.3300E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.1675E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.7361E+01
Total I (Ci)			1.1835E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.6556E+21
Elemental I (atoms)	4.9573E+17	3.6080E+16
Organic I (atoms)	1.7212E+17	5.9650E+15
Aerosols (kg)	5.4091E-04	4.0298E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2899E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2524E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0399E+15
Elemental I (atoms)	5.4369E+09	1.6815E+08
Organic I (atoms)	2.0139E+09	6.2286E+07
Aerosols (kg)	5.9125E-12	1.8286E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	1.0187E+16	0.0000E+00
Elemental I (atoms)	5.6587E+13	0.0000E+00
Organic I (atoms)	1.7504E+12	0.0000E+00
Aerosols (kg)	6.5081E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.8152E-11	5.7087E-19	5.9273E+06	1.5600E+03
Co-60	2.1744E-11	1.9236E-17	1.9307E+08	1.8683E+03
Kr-85	1.8066E-04	4.6047E-10	3.2624E+15	7.3431E+10
Kr-85m	2.1517E-03	2.6146E-13	1.8524E+12	1.0435E+12
Kr-87	1.9024E-03	6.7161E-14	4.6489E+11	1.4818E+12

Kr-88	4.8549E-03	3.8718E-13	2.6496E+12	2.6150E+12
Rb-86	1.5941E-05	1.9591E-13	1.3719E+12	8.7372E+09
Sr-89	3.0762E-08	1.0588E-15	7.1646E+09	2.6438E+06
Sr-90	4.0494E-09	2.9687E-14	1.9864E+11	3.4794E+05
Sr-91	3.2866E-08	9.0666E-18	6.0000E+07	2.9154E+06
Sr-92	2.3333E-08	1.8563E-18	1.2151E+07	2.2473E+06
Y-90	8.6349E-11	1.5871E-19	1.0620E+06	6.1927E+03
Y-91	3.9770E-10	1.6217E-17	1.0732E+08	3.3983E+04
Y-92	5.2468E-09	5.4528E-19	3.5693E+06	3.4178E+05
Y-93	3.8187E-10	1.1446E-19	7.4117E+05	3.3809E+04
Zr-95	4.7674E-10	2.2192E-17	1.4067E+08	4.0970E+04
Zr-97	4.2386E-10	2.2172E-19	1.3765E+06	3.7075E+04
Nb-95	4.7813E-10	1.2227E-17	7.7511E+07	4.1081E+04
Mo-99	5.9743E-09	1.2456E-17	7.5772E+07	5.1566E+05
Tc-99m	5.3809E-09	1.0233E-18	6.2249E+06	4.6025E+05
Ru-103	5.2913E-09	1.6395E-16	9.5857E+08	4.5478E+05
Ru-105	2.7224E-09	4.0499E-19	2.3228E+06	2.5059E+05
Ru-106	2.3048E-09	6.8890E-16	3.9138E+09	1.9804E+05
Rh-105	3.5280E-09	4.1798E-18	2.3973E+07	3.0338E+05
Sb-127	5.9886E-09	2.2425E-17	1.0634E+08	5.1623E+05
Sb-129	1.3421E-08	2.3866E-18	1.1141E+07	1.2378E+06
Te-127	6.0066E-09	2.2760E-18	1.0792E+07	5.1449E+05
Te-127m	1.0314E-09	1.0935E-16	5.1850E+08	8.8619E+04
Te-129	1.5292E-08	7.3018E-19	3.4087E+06	1.3319E+06
Te-129m	3.3985E-09	1.1281E-16	5.2665E+08	2.9201E+05
Te-131m	1.2180E-08	1.5274E-17	7.0216E+07	1.0571E+06
Te-132	9.0039E-08	2.9658E-16	1.3531E+09	7.7661E+06
I-131	6.5177E-03	5.2573E-11	2.4168E+14	3.5808E+12
I-132	5.2194E-03	5.0565E-13	2.3069E+12	4.0940E+12
I-133	1.2743E-02	1.1249E-11	5.0934E+13	7.2474E+12
I-134	2.9614E-03	1.1101E-13	4.9889E+11	4.3698E+12
I-135	1.0363E-02	2.9508E-12	1.3163E+13	6.4113E+12
Xe-133	1.9287E-02	1.0304E-10	4.6655E+14	7.8547E+12
Xe-135	8.4713E-03	3.3172E-12	1.4798E+13	3.3889E+12
Cs-134	1.7494E-03	1.3521E-09	6.0764E+15	9.5716E+11
Cs-136	5.2098E-04	7.1084E-12	3.1476E+13	2.8577E+11
Cs-137	1.4078E-03	1.6185E-08	7.1146E+16	7.7026E+11
Ba-139	1.7028E-08	1.0410E-18	4.5101E+06	1.8435E+06
Ba-140	4.7303E-08	6.4614E-16	2.7794E+09	4.0684E+06
La-140	1.3226E-09	2.3795E-18	1.0236E+07	9.0980E+04
La-141	3.0848E-10	5.4547E-20	2.3297E+05	2.8656E+04
La-142	1.7010E-10	1.1882E-20	5.0392E+04	1.7947E+04
Ce-141	1.1209E-09	3.9338E-17	1.6801E+08	9.6326E+04
Ce-143	1.0369E-09	1.5614E-18	6.5755E+06	8.9909E+04
Ce-144	9.0048E-10	2.8233E-16	1.1807E+09	7.7375E+04
Pr-143	4.2250E-10	6.2743E-18	2.6423E+07	3.6261E+04
Nd-147	1.7489E-10	2.1618E-18	8.8563E+06	1.5044E+04
Np-239	1.2437E-08	5.3610E-17	1.3508E+08	1.0743E+06
Pu-238	3.6360E-12	2.1239E-16	5.3741E+08	3.1241E+02
Pu-239	3.1853E-13	5.1247E-15	1.2913E+10	2.7367E+01
Pu-240	5.9649E-13	2.6177E-15	6.5684E+09	5.1252E+01
Pu-241	1.2856E-10	1.2480E-15	3.1186E+09	1.1047E+04
Am-241	8.6157E-14	2.5103E-17	6.2727E+07	7.4020E+00
Cm-242	2.1855E-11	6.5942E-18	1.6410E+07	1.8780E+03
Cm-244	1.4449E-12	1.7859E-17	4.4079E+07	1.2415E+02

CR Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump		
Noble gases (atoms)	3.7487E+15	0.0000E+00		
Elemental I (atoms)	1.4966E+13	0.0000E+00		
Organic I (atoms)	4.6352E+11	0.0000E+00		
Aerosols (kg)	1.7609E-08	0.0000E+00		
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.1374E-12	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.8547E-12	
Total I (Ci)			3.7804E-02	

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2899E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13

Organic I (atoms)	0.0000E+00	2.2524E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0399E+15
Elemental I (atoms)	5.4369E+09	1.6815E+08
Organic I (atoms)	2.0139E+09	6.2286E+07
Aerosols (kg)	5.9125E-12	1.8286E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	1.0187E+16	0.0000E+00
Elemental I (atoms)	5.6587E+13	0.0000E+00
Organic I (atoms)	1.7504E+12	0.0000E+00
Aerosols (kg)	6.5081E-08	0.0000E+00

EAB Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.5333E-02	2.5666E-02	3.6767E-02
Accumulated dose (rem)	1.4801E-01	4.6353E-01	1.7016E-01

LPZ Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3756E-02	9.9923E-03	1.4314E-02
Accumulated dose (rem)	5.7624E-02	1.8046E-01	6.6247E-02

CR Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.1884E-04	8.0083E-01	3.5532E-02
Accumulated dose (rem)	3.6108E-03	1.9126E+01	8.4735E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	5.9959E-01	1.8856E-08	1.9578E+17	4.3374E+15
Co-60	7.1828E-01	6.3543E-07	6.3777E+18	5.1938E+15
Kr-85	1.3588E+06	3.4635E+00	2.4538E+25	2.0507E+20
Kr-85m	1.5691E+07	1.9066E-03	1.3508E+22	2.6290E+21
Kr-87	1.2831E+07	4.5298E-04	3.1355E+21	2.8655E+21
Kr-88	3.4777E+07	2.7734E-03	1.8980E+22	6.2042E+21
Rb-86	2.0651E+01	2.5380E-07	1.7772E+18	3.1401E+17
Sr-89	1.0161E+03	3.4974E-05	2.3665E+20	7.3513E+18
Sr-90	1.3377E+02	9.8065E-04	6.5618E+21	9.6726E+17
Sr-91	1.0700E+03	2.9516E-07	1.9533E+18	8.3444E+18
Sr-92	7.3233E+02	5.8263E-08	3.8138E+17	6.9323E+18
Y-90	1.9583E+00	3.5993E-09	2.4084E+16	1.0125E+16
Y-91	1.2987E+01	5.2955E-07	3.5044E+18	9.3308E+16
Y-92	7.0606E+01	7.3377E-09	4.8031E+16	1.1165E+17
Y-93	1.2443E+01	3.7294E-09	2.4150E+16	9.6599E+16
Zr-95	1.5747E+01	7.3300E-07	4.6466E+18	1.1392E+17
Zr-97	1.3887E+01	7.2644E-09	4.5100E+16	1.0476E+17
Nb-95	1.5794E+01	4.0392E-07	2.5605E+18	1.1421E+17
Mo-99	1.9694E+02	4.1062E-07	2.4978E+18	1.4395E+18
Tc-99m	1.7768E+02	3.3790E-08	2.0554E+17	1.2819E+18
Ru-103	1.7477E+02	5.4151E-06	3.1660E+19	1.2647E+18
Ru-105	8.7165E+01	1.2967E-08	7.4371E+16	7.4184E+17
Ru-106	7.6134E+01	2.2757E-05	1.2929E+20	5.5056E+17
Rh-105	1.1643E+02	1.3794E-07	7.9116E+17	8.4443E+17
Sb-127	1.9753E+02	7.3967E-07	3.5074E+18	1.4394E+18
Sb-129	4.2933E+02	7.6347E-08	3.5641E+17	3.6707E+18
Te-127	1.9839E+02	7.5172E-08	3.5645E+17	1.4318E+18
Te-127m	3.4071E+01	3.6121E-06	1.7128E+19	2.4636E+17
Te-129	4.9568E+02	2.3669E-08	1.1049E+17	3.8400E+18
Te-129m	1.1226E+02	3.7265E-06	1.7397E+19	8.1179E+17

Te-131m	4.0049E+02	5.0224E-07	2.3088E+18	2.9657E+18
Te-132	2.9691E+03	9.7797E-06	4.4617E+19	2.1666E+19
I-131	4.2146E+04	3.3995E-04	1.5628E+21	1.4910E+20
I-132	5.4881E+04	5.3168E-06	2.4257E+19	2.1209E+20
I-133	8.1829E+04	7.2235E-05	3.2708E+20	3.0273E+20
I-134	1.6344E+04	6.1266E-07	2.7534E+18	2.0561E+20
I-135	6.5599E+04	1.8679E-05	8.3325E+19	2.7022E+20
Xe-133	1.4450E+08	7.7198E-01	3.4955E+24	2.1867E+22
Xe-135	5.8781E+07	2.3018E-02	1.0268E+23	9.1166E+21
Cs-134	2.2670E+03	1.7521E-03	7.8743E+21	3.4389E+19
Cs-136	6.7483E+02	9.2076E-06	4.0772E+19	1.0272E+19
Cs-137	1.8244E+03	2.0974E-02	9.2198E+22	2.7674E+19
Ba-139	5.0866E+02	3.1098E-08	1.3473E+17	6.3179E+18
Ba-140	1.5619E+03	2.1335E-05	9.1772E+19	1.1320E+19
La-140	2.7138E+01	4.8824E-08	2.1002E+17	1.2144E+17
La-141	9.8371E+00	1.7394E-09	7.4291E+15	8.5538E+16
La-142	5.1357E+00	3.5876E-10	1.5215E+15	6.0103E+16
Ce-141	3.7034E+01	1.2997E-06	5.5512E+18	2.6788E+17
Ce-143	3.4109E+01	5.1363E-08	2.1630E+17	2.5204E+17
Ce-144	2.9746E+01	9.3261E-06	3.9002E+19	2.1511E+17
Pr-143	1.3929E+01	2.0685E-07	8.7108E+17	1.0059E+17
Nd-147	5.7742E+00	7.1375E-08	2.9240E+17	4.1866E+16
Np-239	4.0984E+02	1.7666E-06	4.4513E+18	3.0012E+18
Pu-238	1.2011E-01	7.0160E-06	1.7753E+19	8.6851E+14
Pu-239	1.0523E-02	1.6929E-04	4.2657E+20	7.6077E+13
Pu-240	1.9704E-02	8.6473E-05	2.1698E+20	1.4248E+14
Pu-241	4.2469E+00	4.1227E-05	1.0302E+20	3.0709E+16
Am-241	2.8458E-03	8.2917E-07	2.0719E+18	2.0574E+13
Cm-242	7.2193E-01	2.1782E-07	5.4205E+17	5.2212E+15
Cm-244	4.7729E-02	5.8996E-07	1.4561E+18	3.4513E+14

DW Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	2.8172E+25	0.0000E+00	
Elemental I (atoms)	4.4293E+19	4.8566E+22	
Organic I (atoms)	1.4797E+21	0.0000E+00	
Aerosols (kg)	2.4245E-02	4.8963E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3657E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6888E-05
Total I (Ci)			2.6080E+05

DW to RB Transport Group Inventory:

Time (h) = 2.3000 Leakage Transport

Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5922E+18
Organic I (atoms)	1.1406E+18
Aerosols (kg)	1.6764E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.3000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3719E+17
Organic I (atoms)	0.0000E+00	5.4042E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.3000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3719E+17
Organic I (atoms)	0.0000E+00	5.4042E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	1.4884E-02	4.6807E-10	4.8599E+15	2.3628E+12
Co-60	1.7830E-02	1.5773E-08	1.5831E+17	2.8298E+12
Kr-85	7.5993E+02	1.9369E-03	1.3723E+22	7.4065E+16
Kr-85m	8.7749E+03	1.0663E-06	7.5544E+18	9.2681E+17

Kr-87	7.1757E+03	2.5333E-07	1.7535E+18	9.4451E+17
Kr-88	1.9449E+04	1.5510E-06	1.0614E+19	2.1555E+18
Rb-86	9.0134E-01	1.1077E-08	7.7569E+16	2.3176E+14
Sr-89	2.5222E+01	8.6814E-07	5.8743E+18	4.0044E+15
Sr-90	3.3205E+00	2.4343E-05	1.6288E+20	5.2700E+14
Sr-91	2.6560E+01	7.3268E-09	4.8487E+16	4.4191E+15
Sr-92	1.8179E+01	1.4463E-09	9.4669E+15	3.4189E+15
Y-90	7.0394E-02	1.2939E-10	8.6576E+14	8.4676E+12
Y-91	3.2595E-01	1.3291E-08	8.7956E+16	5.1317E+13
Y-92	4.0615E+00	4.2209E-10	2.7629E+15	4.0279E+14
Y-93	3.0886E-01	9.2576E-11	5.9947E+14	5.1244E+13
Zr-95	3.9089E-01	1.8195E-08	1.1534E+17	6.2055E+13
Zr-97	3.4472E-01	1.8032E-10	1.1195E+15	5.6175E+13
Nb-95	3.9206E-01	1.0026E-08	6.3558E+16	6.2222E+13
Mo-99	4.8885E+00	1.0193E-08	6.2002E+16	7.8111E+14
Tc-99m	4.4105E+00	8.3877E-10	5.1022E+15	6.9721E+14
Ru-103	4.3382E+00	1.3442E-07	7.8590E+17	6.8884E+14
Ru-105	2.1637E+00	3.2188E-10	1.8461E+15	3.8035E+14
Ru-106	1.8899E+00	5.6488E-07	3.2093E+18	2.9996E+14
Rh-105	2.8902E+00	3.4242E-09	1.9639E+16	4.5950E+14
Sb-127	4.9033E+00	1.8361E-08	8.7063E+16	7.8195E+14
Sb-129	1.0657E+01	1.8952E-09	8.8472E+15	1.8789E+15
Te-127	4.9245E+00	1.8660E-09	8.8482E+15	7.7934E+14
Te-127m	8.4575E-01	8.9662E-08	4.2516E+17	1.3423E+14
Te-129	1.2304E+01	5.8753E-10	2.7428E+15	2.0191E+15
Te-129m	2.7867E+00	9.2503E-08	4.3183E+17	4.4228E+14
Te-131m	9.9412E+00	1.2467E-08	5.7311E+16	1.6014E+15
Te-132	7.3701E+01	2.4276E-07	1.1075E+18	1.1764E+16
I-131	4.3921E+02	3.5428E-06	1.6286E+19	1.0517E+17
I-132	4.4603E+02	4.3211E-08	1.9714E+17	1.2276E+17
I-133	8.5319E+02	7.5317E-07	3.4103E+18	2.1012E+17
I-134	1.7041E+02	6.3879E-09	2.8708E+16	9.4676E+16
I-135	6.8397E+02	1.9476E-07	8.6880E+17	1.8037E+17
Xe-133	8.0749E+04	4.3139E-04	1.9533E+21	7.8866E+18
Xe-135	3.2267E+04	1.2635E-05	5.6363E+19	3.2121E+18
Cs-134	9.8944E+01	7.6474E-05	3.4368E+20	2.5404E+16
Cs-136	2.9454E+01	4.0188E-07	1.7795E+18	7.5783E+15
Cs-137	7.9628E+01	9.1545E-04	4.0241E+21	2.0444E+16
Ba-139	1.2626E+01	7.7193E-10	3.3444E+15	2.8301E+15
Ba-140	3.8771E+01	5.2959E-07	2.2780E+18	6.1622E+15
La-140	1.0765E+00	1.9368E-09	8.3314E+15	1.2088E+14
La-141	2.4419E-01	4.3178E-11	1.8441E+14	4.3512E+13
La-142	1.2748E-01	8.9055E-12	3.7768E+13	2.7487E+13
Ce-141	9.1906E-01	3.2255E-08	1.3776E+17	1.4591E+14
Ce-143	8.4668E-01	1.2750E-09	5.3693E+15	1.3620E+14
Ce-144	7.3837E-01	2.3150E-07	9.6815E+17	1.1719E+14
Pr-143	3.4643E-01	5.1446E-09	2.1665E+16	5.4894E+13
Nd-147	1.4333E-01	1.7717E-09	7.2583E+15	2.2787E+13
Np-239	1.0173E+01	4.3852E-08	1.1049E+17	1.6274E+15
Pu-238	2.9815E-03	1.7416E-07	4.4067E+17	4.7319E+11
Pu-239	2.6120E-04	4.2023E-06	1.0589E+19	4.1451E+10
Pu-240	4.8912E-04	2.1465E-06	5.3860E+18	7.7627E+10
Pu-241	1.0542E-01	1.0234E-06	2.5572E+18	1.6732E+13
Am-241	7.0649E-05	2.0584E-08	5.1437E+16	1.1211E+10
Cm-242	1.7920E-02	5.4070E-09	1.3455E+16	2.8445E+12
Cm-244	1.1848E-03	1.4644E-08	3.6144E+16	1.8804E+11

RB Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	1.5753E+22	0.0000E+00	
Elemental I (atoms)	9.6773E+17	0.0000E+00	
Organic I (atoms)	8.9415E+17	0.0000E+00	
Aerosols (kg)	1.0314E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7996E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2147E-08
Total I (Ci)			2.5928E+03

DW to RB Transport Group Inventory:

Time (h) = 2.3000	Leakage Transport
Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5922E+18

Organic I (atoms) 1.1406E+18
Aerosols (kg) 1.6764E-03

RB to Environment Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.6243E+21
Elemental I (atoms)	5.6059E+17	3.8086E+16
Organic I (atoms)	2.2607E+17	7.6334E+15
Aerosols (kg)	6.0994E-04	4.2433E-05

Environment Integral Nuclide Release:

Time (h) = 2.3000	Ci	kg	Atoms	Bq
Co-58	1.7331E-04	5.4502E-12	5.6589E+13	6.4123E+06
Co-60	2.0756E-04	1.8362E-10	1.8430E+15	7.6798E+06
Kr-85	1.7474E+02	4.4540E-04	3.1556E+21	6.4656E+12
Kr-85m	2.1692E+03	2.6359E-07	1.8675E+18	8.0262E+13
Kr-87	2.1676E+03	7.6526E-08	5.2971E+17	8.0203E+13
Kr-88	5.0220E+03	4.0050E-07	2.7408E+18	1.8581E+14
Rb-86	3.8112E-02	4.6840E-10	3.2800E+15	1.4102E+09
Sr-89	2.9371E-01	1.0110E-08	6.8407E+16	1.0867E+10
Sr-90	3.8655E-02	2.8338E-07	1.8962E+18	1.4302E+09
Sr-91	3.2287E-01	8.9069E-11	5.8943E+14	1.1946E+10
Sr-92	2.4740E-01	1.9683E-11	1.2884E+14	9.1538E+09
Y-90	6.6747E-04	1.2268E-12	8.2091E+12	2.4697E+07
Y-91	3.7715E-03	1.5379E-10	1.0177E+15	1.3955E+08
Y-92	3.4645E-02	3.6004E-12	2.3568E+13	1.2819E+09
Y-93	3.7450E-03	1.1225E-12	7.2685E+12	1.3856E+08
Zr-95	4.5516E-03	2.1187E-10	1.3431E+15	1.6841E+08
Zr-97	4.1114E-03	2.1507E-12	1.3352E+13	1.5212E+08
Nb-95	4.5641E-03	1.1672E-10	7.3990E+14	1.6887E+08
Mo-99	5.7261E-02	1.1939E-10	7.2625E+14	2.1187E+09
Tc-99m	5.1397E-02	9.7746E-12	5.9458E+13	1.9017E+09
Ru-103	5.0524E-02	1.5655E-09	9.1529E+15	1.8694E+09
Ru-105	2.7667E-02	4.1159E-12	2.3606E+13	1.0237E+09
Ru-106	2.2001E-02	6.5763E-09	3.7362E+16	8.1405E+08
Rh-105	3.3722E-02	3.9952E-11	2.2914E+14	1.2477E+09
Sb-127	5.7332E-02	2.1469E-10	1.0180E+15	2.1213E+09
Sb-129	1.3664E-01	2.4298E-11	1.1343E+14	5.0557E+09
Te-127	5.7351E-02	2.1731E-11	1.0305E+14	2.1220E+09
Te-127m	9.8455E-03	1.0438E-09	4.9494E+15	3.6428E+08
Te-129	1.5085E-01	7.2031E-12	3.3626E+13	5.5814E+09
Te-129m	3.2442E-02	1.0769E-09	5.0273E+15	1.2004E+09
Te-131m	1.1731E-01	1.4712E-10	6.7632E+14	4.3406E+09
Te-132	8.6245E-01	2.8408E-09	1.2960E+16	3.1911E+10
I-131	1.6374E+01	1.3207E-07	6.0714E+17	6.0583E+11
I-132	2.0870E+01	2.0218E-09	9.2241E+15	7.7218E+11
I-133	3.3271E+01	2.9370E-08	1.3299E+17	1.2310E+12
I-134	2.3468E+01	8.7971E-10	3.9535E+15	8.6830E+11
I-135	2.9748E+01	8.4708E-09	3.7787E+16	1.1007E+12
Xe-133	1.8601E+04	9.9373E-05	4.4995E+20	6.8823E+14
Xe-135	7.5380E+03	2.9517E-06	1.3167E+19	2.7890E+14
Cs-134	4.1741E+00	3.2261E-06	1.4499E+19	1.5444E+11
Cs-136	1.2467E+00	1.7010E-08	7.5322E+16	4.6127E+10
Cs-137	3.3590E+00	3.8617E-05	1.6975E+20	1.2428E+11
Ba-139	2.0223E-01	1.2364E-11	5.3565E+13	7.4826E+09
Ba-140	4.5194E-01	6.1733E-09	2.6555E+16	1.6722E+10
La-140	9.7267E-03	1.7499E-11	7.5274E+13	3.5989E+08
La-141	3.1618E-03	5.5907E-13	2.3878E+12	1.1699E+08
La-142	1.9694E-03	1.3757E-13	5.8344E+11	7.2867E+07
Ce-141	1.0702E-02	3.7560E-10	1.6042E+15	3.9597E+08
Ce-143	9.9791E-03	1.5027E-11	6.3283E+13	3.6923E+08
Ce-144	8.5961E-03	2.6951E-09	1.1271E+16	3.1806E+08
Pr-143	4.0283E-03	5.9821E-11	2.5192E+14	1.4905E+08
Nd-147	1.6711E-03	2.0657E-11	8.4626E+13	6.1832E+07
Np-239	1.1929E-01	5.1419E-10	1.2956E+15	4.4136E+09
Pu-238	3.4709E-05	2.0274E-09	5.1300E+15	1.2842E+06
Pu-239	3.0405E-06	4.8916E-08	1.2326E+17	1.1250E+05
Pu-240	5.6939E-06	2.4988E-08	6.2700E+16	2.1068E+05
Pu-241	1.2272E-03	1.1914E-08	2.9770E+16	4.5408E+07

Am-241	8.2234E-07	2.3960E-10	5.9871E+14	3.0427E+04
Cm-242	2.0864E-04	6.2951E-11	1.5665E+14	7.7196E+06
Cm-244	1.3792E-05	1.7048E-10	4.2076E+14	5.1032E+05

Environment Transport Group Inventory:

Time (h) = 2.3000	Total Release	Release Rate/s		
Noble gases (atoms)	3.6238E+21	4.3766E+17		
Elemental I (atoms)	3.8056E+16	4.5962E+12		
Organic I (atoms)	7.6224E+15	9.2058E+11		
Aerosols (kg)	4.2430E-05	5.1244E-09		
Dose Effective (Ci) I-131 (Thyroid)			2.2921E+01	
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.8895E+01	
Total I (Ci)			1.2373E+02	

RB to Environment Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.6243E+21
Elemental I (atoms)	5.6059E+17	3.8086E+16
Organic I (atoms)	2.2607E+17	7.6334E+15
Aerosols (kg)	6.0994E-04	4.2433E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3069E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2527E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4209E+15
Elemental I (atoms)	6.2022E+09	1.9182E+08
Organic I (atoms)	2.6505E+09	8.1973E+07
Aerosols (kg)	6.7270E-12	2.0805E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	1.0762E+16	0.0000E+00
Elemental I (atoms)	5.8727E+13	0.0000E+00
Organic I (atoms)	1.8167E+12	0.0000E+00
Aerosols (kg)	6.7601E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	2.0869E-11	6.5630E-19	6.8144E+06	2.0991E+03
Co-60	2.5000E-11	2.2116E-17	2.2198E+08	2.5141E+03
Kr-85	1.7946E-04	4.5740E-10	3.2406E+15	7.8212E+10
Kr-85m	2.0722E-03	2.5180E-13	1.7840E+12	1.0996E+12
Kr-87	1.6945E-03	5.9823E-14	4.1409E+11	1.5295E+12
Kr-88	4.5928E-03	3.6627E-13	2.5065E+12	2.7404E+12
Rb-86	1.3655E-05	1.6782E-13	1.1752E+12	9.1157E+09
Sr-89	3.5365E-08	1.2173E-15	8.2366E+09	3.5574E+06
Sr-90	4.6559E-09	3.4132E-14	2.2839E+11	4.6822E+05
Sr-91	3.7241E-08	1.0273E-17	6.7986E+07	3.8844E+06
Sr-92	2.5489E-08	2.0279E-18	1.3274E+07	2.9226E+06
Y-90	1.0651E-10	1.9577E-19	1.3099E+06	8.7682E+03
Y-91	4.5833E-10	1.8689E-17	1.2368E+08	4.5797E+04
Y-92	6.5321E-09	6.7885E-19	4.4436E+06	4.9556E+05
Y-93	4.3307E-10	1.2981E-19	8.4055E+05	4.5073E+04
Zr-95	5.4808E-10	2.5513E-17	1.6173E+08	5.5130E+04
Zr-97	4.8335E-10	2.5284E-19	1.5697E+06	4.9612E+04

Nb-95	5.4973E-10	1.4059E-17	8.9119E+07	5.5282E+04
Mo-99	6.8545E-09	1.4292E-17	8.6936E+07	6.9292E+05
Tc-99m	6.1842E-09	1.1761E-18	7.1541E+06	6.1914E+05
Ru-103	6.0828E-09	1.8847E-16	1.1020E+09	6.1194E+05
Ru-105	3.0338E-09	4.5133E-19	2.5885E+06	3.3018E+05
Ru-106	2.6499E-09	7.9206E-16	4.4999E+09	2.6649E+05
Rh-105	4.0525E-09	4.8012E-18	2.7537E+07	4.0804E+05
Sb-127	6.8751E-09	2.5745E-17	1.2208E+08	6.9397E+05
Sb-129	1.4943E-08	2.6573E-18	1.2405E+07	1.6299E+06
Te-127	6.9050E-09	2.6164E-18	1.2407E+07	6.9223E+05
Te-127m	1.1859E-09	1.2572E-16	5.9615E+08	1.1925E+05
Te-129	1.7253E-08	8.2381E-19	3.8458E+06	1.7707E+06
Te-129m	3.9074E-09	1.2970E-16	6.0550E+08	3.9295E+05
Te-131m	1.3939E-08	1.7481E-17	8.0360E+07	1.4180E+06
Te-132	1.0334E-07	3.4039E-16	1.5529E+09	1.0438E+07
I-131	5.5810E-03	4.5018E-11	2.0695E+14	3.7355E+12
I-132	4.2109E-03	4.0795E-13	1.8612E+12	4.2143E+12
I-133	1.0847E-02	9.5752E-12	4.3356E+13	7.5490E+12
I-134	2.1665E-03	8.1212E-14	3.6498E+11	4.4349E+12
I-135	8.6955E-03	2.4760E-12	1.1045E+13	6.6548E+12
Xe-133	1.9139E-02	1.0225E-10	4.6297E+14	8.3647E+12
Xe-135	8.3066E-03	3.2527E-12	1.4510E+13	3.6102E+12
Cs-134	1.4990E-03	1.1586E-09	5.2069E+15	9.9869E+11
Cs-136	4.4623E-04	6.0885E-12	2.6960E+13	2.9814E+11
Cs-137	1.2064E-03	1.3869E-08	6.0965E+16	8.0369E+11
Ba-139	1.7704E-08	1.0824E-18	4.6893E+06	2.3243E+06
Ba-140	5.4363E-08	7.4257E-16	3.1942E+09	5.4731E+06
La-140	1.6537E-09	2.9753E-18	1.2798E+07	1.3045E+05
La-141	3.4239E-10	6.0542E-20	2.5858E+05	3.7656E+04
La-142	1.7875E-10	1.2487E-20	5.2956E+04	2.2775E+04
Ce-141	1.2886E-09	4.5224E-17	1.9315E+08	1.2962E+05
Ce-143	1.1872E-09	1.7877E-18	7.5286E+06	1.2064E+05
Ce-144	1.0353E-09	3.2460E-16	1.3575E+09	1.0412E+05
Pr-143	4.8599E-10	7.2171E-18	3.0393E+07	4.8810E+04
Nd-147	2.0097E-10	2.4843E-18	1.0177E+07	2.0237E+04
Np-239	1.4265E-08	6.1488E-17	1.5493E+08	1.4433E+06
Pu-238	4.1806E-12	2.4420E-16	6.1789E+08	4.2041E+02
Pu-239	3.6624E-13	5.8923E-15	1.4847E+10	3.6828E+01
Pu-240	6.8582E-13	3.0097E-15	7.5521E+09	6.8969E+01
Pu-241	1.4782E-10	1.4349E-15	3.5857E+09	1.4865E+04
Am-241	9.9064E-14	2.8863E-17	7.2124E+07	9.9611E+00
Cm-242	2.5127E-11	7.5815E-18	1.8866E+07	2.5271E+03
Cm-244	1.6612E-12	2.0534E-17	5.0680E+07	1.6706E+02

CR Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	3.7228E+15	0.0000E+00	
Elemental I (atoms)	1.2783E+13	0.0000E+00	
Organic I (atoms)	3.9619E+11	0.0000E+00	
Aerosols (kg)	1.5089E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.6803E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.2841E-12
Total I (Ci)			3.1501E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3069E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2527E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4209E+15
Elemental I (atoms)	6.2022E+09	1.9182E+08
Organic I (atoms)	2.6505E+09	8.1973E+07
Aerosols (kg)	6.7270E-12	2.0805E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	1.0762E+16	0.0000E+00
Elemental I (atoms)	5.8727E+13	0.0000E+00
Organic I (atoms)	1.8167E+12	0.0000E+00
Aerosols (kg)	6.7601E-08	0.0000E+00

EAB Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.9252E-02	1.2287E-02	1.9937E-02
Accumulated dose (rem)	1.6727E-01	4.7582E-01	1.9010E-01

LPZ Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	7.4950E-03	4.7835E-03	7.7619E-03
Accumulated dose (rem)	6.5119E-02	1.8524E-01	7.4008E-02

CR Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2589E-05	3.5555E-01	1.5781E-02
Accumulated dose (rem)	3.6634E-03	1.9481E+01	8.6314E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	4.4412E-01	1.3967E-08	1.4502E+17	4.3433E+15
Co-60	5.3206E-01	4.7069E-07	4.7242E+18	5.2009E+15
Kr-85	1.3587E+06	3.4631E+00	2.4536E+25	2.2317E+20
Kr-85m	1.5448E+07	1.8772E-03	1.3299E+22	2.8364E+21
Kr-87	1.2149E+07	4.2891E-04	2.9689E+21	3.0318E+21
Kr-88	3.3935E+07	2.7063E-03	1.8520E+22	6.6617E+21
Rb-86	1.5295E+01	1.8797E-07	1.3163E+18	3.1422E+17
Sr-89	7.5260E+02	2.5905E-05	1.7528E+20	7.3614E+18
Sr-90	9.9088E+01	7.2641E-04	4.8606E+21	9.6858E+17
Sr-91	7.8681E+02	2.1705E-07	1.4364E+18	8.3549E+18
Sr-92	5.2877E+02	4.2068E-08	2.7537E+17	6.9394E+18
Y-90	1.5563E+00	2.8606E-09	1.9141E+16	1.0145E+16
Y-91	9.6357E+00	3.9291E-07	2.6002E+18	9.3437E+16
Y-92	6.1774E+01	6.4198E-09	4.2023E+16	1.1234E+17
Y-93	9.1537E+00	2.7437E-09	1.7766E+16	9.6722E+16
Zr-95	1.1664E+01	5.4294E-07	3.4418E+18	1.1407E+17
Zr-97	1.0245E+01	5.3590E-09	3.3271E+16	1.0490E+17
Nb-95	1.1700E+01	2.9920E-07	1.8966E+18	1.1436E+17
Mo-99	1.4573E+02	3.0384E-07	1.8483E+18	1.4415E+18
Tc-99m	1.3158E+02	2.5024E-08	1.5222E+17	1.2836E+18
Ru-103	1.2945E+02	4.0109E-06	2.3451E+19	1.2664E+18
Ru-105	6.3567E+01	9.4565E-09	5.4237E+16	7.4269E+17
Ru-106	5.6395E+01	1.6857E-05	9.5767E+19	5.5131E+17
Rh-105	8.6203E+01	1.0213E-07	5.8575E+17	8.4557E+17
Sb-127	1.4621E+02	5.4749E-07	2.5961E+18	1.4413E+18
Sb-129	3.1296E+02	5.5653E-08	2.5981E+17	3.6749E+18
Te-127	1.4694E+02	5.5678E-08	2.6402E+17	1.4338E+18
Te-127m	2.5238E+01	2.6756E-06	1.2687E+19	2.4670E+17
Te-129	3.6362E+02	1.7363E-08	8.1056E+16	3.8447E+18
Te-129m	8.3157E+01	2.7604E-06	1.2886E+19	8.1289E+17
Te-131m	2.9597E+02	3.7117E-07	1.7063E+18	2.9697E+18
Te-132	2.1974E+03	7.2379E-06	3.3021E+19	2.1695E+19
I-131	3.9527E+04	3.1883E-04	1.4657E+21	1.4962E+20
I-132	5.0028E+04	4.8466E-06	2.2111E+19	2.1276E+20
I-133	7.6517E+04	6.7546E-05	3.0584E+20	3.0375E+20
I-134	1.4168E+04	5.3110E-07	2.3868E+18	2.0581E+20
I-135	6.0903E+04	1.7342E-05	7.7361E+19	2.7103E+20
Xe-133	1.4441E+08	7.7148E-01	3.4932E+24	2.3791E+22
Xe-135	5.8329E+07	2.2841E-02	1.0189E+23	9.8965E+21
Cs-134	1.6792E+03	1.2979E-03	5.8328E+21	3.4412E+19
Cs-136	4.9977E+02	6.8190E-06	3.0195E+19	1.0278E+19
Cs-137	1.3514E+03	1.5537E-02	6.8295E+22	2.7692E+19

Ba-139	3.5831E+02	2.1906E-08	9.4905E+16	6.3228E+18
Ba-140	1.1567E+03	1.5800E-05	6.7964E+19	1.1336E+19
La-140	2.2059E+01	3.9686E-08	1.7071E+17	1.2171E+17
La-141	7.1594E+00	1.2659E-09	5.4069E+15	8.5635E+16
La-142	3.6370E+00	2.5407E-10	1.0775E+15	6.0153E+16
Ce-141	2.7431E+01	9.6271E-07	4.1118E+18	2.6825E+17
Ce-143	2.5213E+01	3.7967E-08	1.5989E+17	2.5238E+17
Ce-144	2.2034E+01	6.9082E-06	2.8890E+19	2.1540E+17
Pr-143	1.0321E+01	1.5327E-07	6.4545E+17	1.0072E+17
Nd-147	4.2761E+00	5.2857E-08	2.1654E+17	4.1923E+16
Np-239	3.0321E+02	1.3070E-06	3.2933E+18	3.0052E+18
Pu-238	8.8972E-02	5.1971E-06	1.3150E+19	8.6969E+14
Pu-239	7.7946E-03	1.2540E-04	3.1598E+20	7.6180E+13
Pu-240	1.4596E-02	6.4054E-05	1.6073E+20	1.4267E+14
Pu-241	3.1459E+00	3.0539E-05	7.6311E+19	3.0751E+16
Am-241	2.1081E-03	6.1422E-07	1.5348E+18	2.0602E+13
Cm-242	5.3476E-01	1.6135E-07	4.0151E+17	5.2283E+15
Cm-244	3.5355E-02	4.3701E-07	1.0786E+18	3.4560E+14

DW Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.8166E+25	0.0000E+00	
Elemental I (atoms)	4.4213E+19	4.8566E+22	
Organic I (atoms)	1.4771E+21	0.0000E+00	
Aerosols (kg)	1.7959E-02	4.8970E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.2793E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5795E-05
Total I (Ci)			2.4114E+05

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport
Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5950E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6777E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.4000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.6037E+21
Elemental I (atoms)	0.0000E+00	8.3804E+17
Organic I (atoms)	0.0000E+00	5.6871E+17
Aerosols (kg)	0.0000E+00	8.8234E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.4000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.6037E+21
Elemental I (atoms)	0.0000E+00	8.3804E+17
Organic I (atoms)	0.0000E+00	5.6871E+17
Aerosols (kg)	0.0000E+00	8.8234E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	1.4426E-02	4.5367E-10	4.7104E+15	2.5549E+12
Co-60	1.7282E-02	1.5288E-08	1.5345E+17	3.0600E+12
Kr-85	8.1847E+02	2.0862E-03	1.4780E+22	8.4967E+16
Kr-85m	9.3059E+03	1.1308E-06	8.0115E+18	1.0517E+18
Kr-87	7.3185E+03	2.5837E-07	1.7884E+18	1.0447E+18
Kr-88	2.0442E+04	1.6302E-06	1.1156E+19	2.4311E+18
Rb-86	8.7268E-01	1.0725E-08	7.5103E+16	2.4339E+14
Sr-89	2.4445E+01	8.4142E-07	5.6934E+18	4.3300E+15
Sr-90	3.2185E+00	2.3595E-05	1.5788E+20	5.6987E+14
Sr-91	2.5556E+01	7.0500E-09	4.6655E+16	4.7608E+15
Sr-92	1.7175E+01	1.3664E-09	8.9443E+15	3.6506E+15
Y-90	7.1596E-02	1.3160E-10	8.8054E+14	9.3754E+12
Y-91	3.1644E-01	1.2903E-08	8.5391E+16	5.5525E+13
Y-92	4.1961E+00	4.3608E-10	2.8545E+15	4.5465E+14
Y-93	2.9732E-01	8.9117E-11	5.7707E+14	5.5218E+13
Zr-95	3.7886E-01	1.7635E-08	1.1179E+17	6.7102E+13

Zr-97	3.3276E-01	1.7407E-10	1.0807E+15	6.0617E+13
Nb-95	3.8001E-01	9.7183E-09	6.1605E+16	6.7284E+13
Mo-99	4.7334E+00	9.8691E-09	6.0033E+16	8.4419E+14
Tc-99m	4.2740E+00	8.1282E-10	4.9443E+15	7.5383E+14
Ru-103	4.2046E+00	1.3028E-07	7.6170E+17	7.4484E+14
Ru-105	2.0647E+00	3.0716E-10	1.7617E+15	4.0807E+14
Ru-106	1.8318E+00	5.4752E-07	3.1106E+18	3.2435E+14
Rh-105	2.8000E+00	3.3173E-09	1.9026E+16	4.9677E+14
Sb-127	4.7490E+00	1.7783E-08	8.4325E+16	8.4523E+14
Sb-129	1.0165E+01	1.8077E-09	8.4388E+15	2.0153E+15
Te-127	4.7728E+00	1.8085E-09	8.5756E+15	8.4268E+14
Te-127m	8.1976E-01	8.6907E-08	4.1210E+17	1.4514E+14
Te-129	1.1811E+01	5.6397E-10	2.6328E+15	2.1733E+15
Te-129m	2.7010E+00	8.9659E-08	4.1856E+17	4.7826E+14
Te-131m	9.6135E+00	1.2056E-08	5.5422E+16	1.7296E+15
Te-132	7.1373E+01	2.3509E-07	1.0725E+18	1.2715E+16
I-131	4.2713E+02	3.4453E-06	1.5838E+19	1.1086E+17
I-132	4.2389E+02	4.1066E-08	1.8735E+17	1.2847E+17
I-133	8.2726E+02	7.3027E-07	3.3066E+18	2.2116E+17
I-134	1.5318E+02	5.7420E-09	2.5805E+16	9.6799E+16
I-135	6.5845E+02	1.8749E-07	8.3638E+17	1.8919E+17
Xe-133	8.6929E+04	4.6441E-04	2.1028E+21	9.0448E+18
Xe-135	3.4559E+04	1.3533E-05	6.0367E+19	3.6741E+18
Cs-134	9.5812E+01	7.4053E-05	3.3280E+20	2.6681E+16
Cs-136	2.8515E+01	3.8907E-07	1.7228E+18	7.9582E+15
Cs-137	7.7108E+01	8.8648E-04	3.8967E+21	2.1471E+16
Ba-139	1.1638E+01	7.1151E-10	3.0826E+15	2.9891E+15
Ba-140	3.7571E+01	5.1320E-07	2.2075E+18	6.6627E+15
La-140	1.1055E+00	1.9889E-09	8.5553E+15	1.3476E+14
La-141	2.3254E-01	4.1119E-11	1.7562E+14	4.6637E+13
La-142	1.1813E-01	8.2523E-12	3.4998E+13	2.9096E+13
Ce-141	8.9076E-01	3.1262E-08	1.3352E+17	1.5777E+14
Ce-143	8.1894E-01	1.2332E-09	5.1933E+15	1.4712E+14
Ce-144	7.1568E-01	2.2439E-07	9.3839E+17	1.2673E+14
Pr-143	3.3589E-01	4.9880E-09	2.1006E+16	5.9366E+13
Nd-147	1.3889E-01	1.7168E-09	7.0334E+15	2.4637E+13
Np-239	9.8486E+00	4.2452E-08	1.0697E+17	1.7586E+15
Pu-238	2.8899E-03	1.6881E-07	4.2713E+17	5.1169E+11
Pu-239	2.5318E-04	4.0732E-06	1.0263E+19	4.4824E+10
Pu-240	4.7409E-04	2.0805E-06	5.2205E+18	8.3942E+10
Pu-241	1.0218E-01	9.9194E-07	2.4787E+18	1.8093E+13
Am-241	6.8480E-05	1.9952E-08	4.9857E+16	1.2123E+10
Cm-242	1.7369E-02	5.2408E-09	1.3042E+16	3.0758E+12
Cm-244	1.1484E-03	1.4194E-08	3.5033E+16	2.0333E+11

RB Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	1.6964E+22	0.0000E+00	
Elemental I (atoms)	9.3715E+17	0.0000E+00	
Organic I (atoms)	9.5418E+17	0.0000E+00	
Aerosols (kg)	9.9874E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7481E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.1485E-08
Total I (Ci)			2.4899E+03

DW to RB Transport Group Inventory:

Time (h) = 2.4000 Leakage Transport

Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5950E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6777E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.1711E+21
Elemental I (atoms)	5.9148E+17	3.9041E+16
Organic I (atoms)	2.5605E+17	8.5609E+15
Aerosols (kg)	6.4284E-04	4.3450E-05

Environment Integral Nuclide Release:

Time (h) = 2.4000	Ci	kg	Atoms	Bq
Co-58	1.8800E-04	5.9122E-12	6.1386E+13	6.9559E+06
Co-60	2.2516E-04	1.9919E-10	1.9993E+15	8.3310E+06
Kr-85	2.0112E+02	5.1263E-04	3.6319E+21	7.4416E+12
Kr-85m	2.4692E+03	3.0004E-07	2.1257E+18	9.1359E+13
Kr-87	2.4035E+03	8.4853E-08	5.8735E+17	8.8930E+13
Kr-88	5.6808E+03	4.5304E-07	3.1003E+18	2.1019E+14
Rb-86	3.9002E-02	4.7933E-10	3.3565E+15	1.4431E+09
Sr-89	3.1860E-01	1.0967E-08	7.4205E+16	1.1788E+10
Sr-90	4.1933E-02	3.0741E-07	2.0569E+18	1.5515E+09
Sr-91	3.4890E-01	9.6249E-11	6.3695E+14	1.2909E+10
Sr-92	2.6489E-01	2.1074E-11	1.3795E+14	9.8010E+09
Y-90	7.4041E-04	1.3609E-12	9.1061E+12	2.7395E+07
Y-91	4.0938E-03	1.6693E-10	1.1047E+15	1.5147E+08
Y-92	3.8920E-02	4.0448E-12	2.6476E+13	1.4401E+09
Y-93	4.0477E-03	1.2132E-12	7.8562E+12	1.4977E+08
Zr-95	4.9374E-03	2.2983E-10	1.4569E+15	1.8269E+08
Zr-97	4.4503E-03	2.3279E-12	1.4453E+13	1.6466E+08
Nb-95	4.9511E-03	1.2662E-10	8.0264E+14	1.8319E+08
Mo-99	6.2082E-02	1.2944E-10	7.8738E+14	2.2970E+09
Tc-99m	5.5750E-02	1.0602E-11	6.4494E+13	2.0627E+09
Ru-103	5.4806E-02	1.6981E-09	9.9286E+15	2.0278E+09
Ru-105	2.9770E-02	4.4287E-12	2.5400E+13	1.1015E+09
Ru-106	2.3867E-02	7.1339E-09	4.0529E+16	8.8308E+08
Rh-105	3.6573E-02	4.3330E-11	2.4851E+14	1.3532E+09
Sb-127	6.2169E-02	2.3280E-10	1.1039E+15	2.3002E+09
Sb-129	1.4699E-01	2.6139E-11	1.2203E+14	5.4387E+09
Te-127	6.2212E-02	2.3573E-11	1.1178E+14	2.3018E+09
Te-127m	1.0680E-02	1.1323E-09	5.3691E+15	3.9517E+08
Te-129	1.6288E-01	7.7774E-12	3.6308E+13	6.0265E+09
Te-129m	3.5193E-02	1.1682E-09	5.4536E+15	1.3021E+09
Te-131m	1.2710E-01	1.5940E-10	7.3276E+14	4.7029E+09
Te-132	9.3513E-01	3.0802E-09	1.4053E+16	3.4600E+10
I-131	1.6808E+01	1.3557E-07	6.2324E+17	6.2189E+11
I-132	2.1300E+01	2.0636E-09	9.4144E+15	7.8811E+11
I-133	3.4112E+01	3.0113E-08	1.3635E+17	1.2621E+12
I-134	2.3623E+01	8.8554E-10	3.9797E+15	8.7406E+11
I-135	3.0418E+01	8.6614E-09	3.8637E+16	1.1255E+12
Xe-133	2.1402E+04	1.1434E-04	5.1772E+20	7.9188E+14
Xe-135	8.6506E+03	3.3874E-06	1.5111E+19	3.2007E+14
Cs-134	4.2717E+00	3.3016E-06	1.4838E+19	1.5805E+11
Cs-136	1.2757E+00	1.7407E-08	7.7077E+16	4.7202E+10
Cs-137	3.4376E+00	3.9521E-05	1.7372E+20	1.2719E+11
Ba-139	2.1408E-01	1.3088E-11	5.6705E+13	7.9211E+09
Ba-140	4.9020E-01	6.6960E-09	2.8803E+16	1.8137E+10
La-140	1.0853E-02	1.9526E-11	8.3990E+13	4.0156E+08
La-141	3.3986E-03	6.0095E-13	2.5667E+12	1.2575E+08
La-142	2.0897E-03	1.4598E-13	6.1908E+11	7.7318E+07
Ce-141	1.1609E-02	4.0743E-10	1.7402E+15	4.2954E+08
Ce-143	1.0813E-02	1.6283E-11	6.8572E+13	4.0009E+08
Ce-144	9.3249E-03	2.9236E-09	1.2227E+16	3.4502E+08
Pr-143	4.3703E-03	6.4901E-11	2.7331E+14	1.6170E+08
Nd-147	1.8126E-03	2.2406E-11	9.1789E+13	6.7066E+07
Np-239	1.2932E-01	5.5742E-10	1.4045E+15	4.7847E+09
Pu-238	3.7652E-05	2.1993E-09	5.5649E+15	1.3931E+06
Pu-239	3.2983E-06	5.3064E-08	1.3371E+17	1.2204E+05
Pu-240	6.1767E-06	2.7107E-08	6.8017E+16	2.2854E+05
Pu-241	1.3313E-03	1.2924E-08	3.2294E+16	4.9258E+07
Am-241	8.9208E-07	2.5992E-10	6.4949E+14	3.3007E+04
Cm-242	2.2633E-04	6.8288E-11	1.6993E+14	8.3741E+06
Cm-244	1.4962E-05	1.8494E-10	4.5644E+14	5.5359E+05

Environment Transport Group Inventory:

Time (h) = 2.4000	Total Release	Release Rate/s
Noble gases (atoms)	4.1706E+21	4.8271E+17
Elemental I (atoms)	3.9010E+16	4.5151E+12
Organic I (atoms)	8.5484E+15	9.8940E+11
Aerosols (kg)	4.3448E-05	5.0286E-09

Dose Effective (Ci) I-131 (Thyroid) 2.3517E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid) 2.9627E+01
Total I (Ci) 1.2626E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.1711E+21
Elemental I (atoms)	5.9148E+17	3.9041E+16
Organic I (atoms)	2.5605E+17	8.5609E+15
Aerosols (kg)	6.4284E-04	4.3450E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3164E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2528E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6359E+15
Elemental I (atoms)	6.5668E+09	2.0310E+08
Organic I (atoms)	3.0043E+09	9.2916E+07
Aerosols (kg)	7.1152E-12	2.2006E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	1.1051E+16	0.0000E+00
Elemental I (atoms)	5.9677E+13	0.0000E+00
Organic I (atoms)	1.8461E+12	0.0000E+00
Aerosols (kg)	6.8723E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	2.1955E-11	6.9046E-19	7.1690E+06	2.3916E+03
Co-60	2.6302E-11	2.3268E-17	2.3354E+08	2.8645E+03
Kr-85	1.8055E-04	4.6019E-10	3.2604E+15	8.0617E+10
Kr-85m	2.0528E-03	2.4944E-13	1.7673E+12	1.1271E+12
Kr-87	1.6144E-03	5.6994E-14	3.9451E+11	1.5516E+12
Kr-88	4.5093E-03	3.5962E-13	2.4610E+12	2.8012E+12
Rb-86	1.2639E-05	1.5533E-13	1.0877E+12	9.2840E+09
Sr-89	3.7204E-08	1.2806E-15	8.6651E+09	4.0530E+06
Sr-90	4.8984E-09	3.5910E-14	2.4028E+11	5.3346E+05
Sr-91	3.8895E-08	1.0730E-17	7.1007E+07	4.4044E+06
Sr-92	2.6140E-08	2.0796E-18	1.3613E+07	3.2753E+06
Y-90	1.1625E-10	2.1367E-19	1.4297E+06	1.0247E+04
Y-91	4.8282E-10	1.9688E-17	1.3029E+08	5.2217E+04
Y-92	7.1532E-09	7.4340E-19	4.8661E+06	5.8481E+05
Y-93	4.5251E-10	1.3563E-19	8.7827E+05	5.1121E+04
Zr-95	5.7660E-10	2.6840E-17	1.7014E+08	6.2811E+04
Zr-97	5.0644E-10	2.6492E-19	1.6447E+06	5.6371E+04
Nb-95	5.7836E-10	1.4791E-17	9.3760E+07	6.2985E+04
Mo-99	7.2039E-09	1.5020E-17	9.1368E+07	7.8893E+05
Tc-99m	6.5048E-09	1.2371E-18	7.5250E+06	7.0531E+05
Ru-103	6.3991E-09	1.9828E-16	1.1593E+09	6.9718E+05
Ru-105	3.1424E-09	4.6748E-19	2.6812E+06	3.7237E+05
Ru-106	2.7879E-09	8.3330E-16	4.7342E+09	3.0363E+05
Rh-105	4.2614E-09	5.0487E-18	2.8956E+07	4.6478E+05
Sb-127	7.2278E-09	2.7065E-17	1.2834E+08	7.9028E+05
Sb-129	1.5471E-08	2.7512E-18	1.2843E+07	1.8377E+06
Te-127	7.2639E-09	2.7524E-18	1.3052E+07	7.8863E+05
Te-127m	1.2476E-09	1.3227E-16	6.2720E+08	1.3587E+05
Te-129	1.7975E-08	8.5833E-19	4.0070E+06	2.0054E+06

Te-129m	4.1108E-09	1.3646E-16	6.3703E+08	4.4770E+05
Te-131m	1.4631E-08	1.8349E-17	8.4350E+07	1.6131E+06
Te-132	1.0863E-07	3.5780E-16	1.6324E+09	1.1886E+07
I-131	5.1645E-03	4.1657E-11	1.9150E+14	3.8043E+12
I-132	3.7823E-03	3.6643E-13	1.6717E+12	4.2655E+12
I-133	1.0008E-02	8.8342E-12	4.0001E+13	7.6825E+12
I-134	1.8530E-03	6.9462E-14	3.1217E+11	4.4606E+12
I-135	7.9654E-03	2.2682E-12	1.0118E+13	6.7615E+12
Xe-133	1.9245E-02	1.0281E-10	4.6553E+14	8.6210E+12
Xe-135	8.2914E-03	3.2468E-12	1.4483E+13	3.7204E+12
Cs-134	1.3876E-03	1.0725E-09	4.8199E+15	1.0172E+12
Cs-136	4.1298E-04	5.6348E-12	2.4951E+13	3.0364E+11
Cs-137	1.1167E-03	1.2839E-08	5.6435E+16	8.1856E+11
Ba-139	1.7713E-08	1.0829E-18	4.6916E+06	2.5663E+06
Ba-140	5.7181E-08	7.8106E-16	3.3598E+09	6.2348E+06
La-140	1.8170E-09	3.2690E-18	1.4062E+07	1.5336E+05
La-141	3.5392E-10	6.2581E-20	2.6729E+05	4.2412E+04
La-142	1.7979E-10	1.2560E-20	5.3265E+04	2.5225E+04
Ce-141	1.3556E-09	4.7576E-17	2.0320E+08	1.4767E+05
Ce-143	1.2464E-09	1.8769E-18	7.9040E+06	1.3726E+05
Ce-144	1.0892E-09	3.4150E-16	1.4282E+09	1.1863E+05
Pr-143	5.1143E-10	7.5949E-18	3.1984E+07	5.5619E+04
Nd-147	2.1138E-10	2.6130E-18	1.0704E+07	2.3053E+04
Np-239	1.4989E-08	6.4610E-17	1.6280E+08	1.6430E+06
Pu-238	4.3983E-12	2.5691E-16	6.5007E+08	4.7900E+02
Pu-239	3.8532E-13	6.1992E-15	1.5620E+10	4.1961E+01
Pu-240	7.2153E-13	3.1665E-15	7.9454E+09	7.8580E+01
Pu-241	1.5552E-10	1.5097E-15	3.7724E+09	1.6937E+04
Am-241	1.0423E-13	3.0367E-17	7.5882E+07	1.1349E+01
Cm-242	2.6435E-11	7.9762E-18	1.9849E+07	2.8792E+03
Cm-244	1.7478E-12	2.1603E-17	5.3319E+07	1.9034E+02

CR Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	3.7450E+15	0.0000E+00	
Elemental I (atoms)	1.1815E+13	0.0000E+00	
Organic I (atoms)	3.6633E+11	0.0000E+00	
Aerosols (kg)	1.3967E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.4774E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.0315E-12
Total I (Ci)			2.8773E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3164E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2528E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6359E+15
Elemental I (atoms)	6.5668E+09	2.0310E+08
Organic I (atoms)	3.0043E+09	9.2916E+07
Aerosols (kg)	7.1152E-12	2.2006E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	1.1051E+16	0.0000E+00
Elemental I (atoms)	5.9677E+13	0.0000E+00
Organic I (atoms)	1.8461E+12	0.0000E+00
Aerosols (kg)	6.8723E-08	0.0000E+00

EAB Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE

Delta dose (rem)	1.3169E-01	6.6603E-02	1.3539E-01
Accumulated dose (rem)	2.9896E-01	5.4242E-01	3.2549E-01

LPZ Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.1269E-02	2.5930E-02	5.2709E-02
Accumulated dose (rem)	1.1639E-01	2.1117E-01	1.2672E-01

CR Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.4752E-04	1.6344E+00	7.2610E-02
Accumulated dose (rem)	3.9109E-03	2.1116E+01	9.3575E-01

DW Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	7.3351E-02	2.3068E-09	2.3951E+16	4.3574E+15
Co-60	8.7895E-02	7.7756E-08	7.8043E+17	5.2178E+15
Kr-85	1.3579E+06	3.4611E+00	2.4521E+25	3.3172E+20
Kr-85m	1.4070E+07	1.7097E-03	1.2113E+22	4.0150E+21
Kr-87	8.7549E+06	3.0908E-04	2.1394E+21	3.8597E+21
Kr-88	2.9294E+07	2.3362E-03	1.5988E+22	9.1837E+21
Rb-86	2.5243E+00	3.1024E-08	2.1724E+17	3.1470E+17
Sr-89	1.2429E+02	4.2780E-06	2.8947E+19	7.3853E+18
Sr-90	1.6369E+01	1.2000E-04	8.0297E+20	9.7173E+17
Sr-91	1.2441E+02	3.4321E-08	2.2713E+17	8.3795E+18
Sr-92	7.4925E+01	5.9609E-09	3.9019E+16	6.9553E+18
Y-90	3.6152E-01	6.6448E-10	4.4462E+15	1.0200E+16
Y-91	1.6072E+00	6.5534E-08	4.3369E+17	9.3743E+16
Y-92	1.8125E+01	1.8836E-09	1.2330E+16	1.1473E+17
Y-93	1.4512E+00	4.3497E-10	2.8166E+15	9.7008E+16
Zr-95	1.9264E+00	8.9669E-08	5.6842E+17	1.1444E+17
Zr-97	1.6513E+00	8.6379E-10	5.3627E+15	1.0522E+17
Nb-95	1.9327E+00	4.9427E-08	3.1332E+17	1.1473E+17
Mo-99	2.3923E+01	4.9879E-08	3.0341E+17	1.4461E+18
Tc-99m	2.1704E+01	4.1277E-09	2.5108E+16	1.2878E+18
Ru-103	2.1375E+01	6.6230E-07	3.8723E+18	1.2705E+18
Ru-105	9.5622E+00	1.4225E-09	8.1587E+15	7.4464E+17
Ru-106	9.3160E+00	2.7846E-06	1.5820E+19	5.5310E+17
Rh-105	1.4191E+01	1.6813E-08	9.6431E+16	8.4831E+17
Sb-127	2.4045E+01	9.0039E-08	4.2695E+17	1.4460E+18
Sb-129	4.6956E+01	8.3501E-09	3.8981E+16	3.6845E+18
Te-127	2.4260E+01	9.1924E-09	4.3589E+16	1.4384E+18
Te-127m	4.1693E+00	4.4201E-07	2.0960E+18	2.4750E+17
Te-129	5.6490E+01	2.6974E-09	1.2592E+16	3.8558E+18
Te-129m	1.3736E+01	4.5596E-07	2.1286E+18	8.1554E+17
Te-131m	4.8221E+01	6.0473E-08	2.7800E+17	2.9790E+18
Te-132	3.6108E+02	1.1893E-06	5.4261E+18	2.1765E+19
I-131	3.3234E+04	2.6807E-04	1.2324E+21	1.5242E+20
I-132	3.5314E+04	3.4212E-06	1.5608E+19	2.1602E+20
I-133	6.3197E+04	5.5788E-05	2.5261E+20	3.0912E+20
I-134	7.4286E+03	2.7847E-07	1.2515E+18	2.0661E+20
I-135	4.8188E+04	1.3722E-05	6.1210E+19	2.7522E+20
Xe-133	1.4384E+08	7.6847E-01	3.4796E+24	3.5308E+22
Xe-135	5.5688E+07	2.1807E-02	9.7276E+22	1.4452E+22
Cs-134	2.7740E+02	2.1440E-04	9.6355E+20	3.4465E+19
Cs-136	8.2452E+01	1.1250E-06	4.9815E+18	1.0294E+19
Cs-137	2.2325E+02	2.5666E-03	1.1282E+22	2.7735E+19
Ba-139	4.3775E+01	2.6762E-09	1.1595E+16	6.3330E+18
Ba-140	1.9083E+02	2.6066E-06	1.1212E+19	1.1372E+19
La-140	5.5701E+00	1.0021E-08	4.3107E+16	1.2251E+17
La-141	1.0640E+00	1.8813E-10	8.0352E+14	8.5854E+16
La-142	4.5876E-01	3.2048E-11	1.3591E+14	6.0258E+16
Ce-141	4.5298E+00	1.5898E-07	6.7899E+17	2.6912E+17
Ce-143	4.1130E+00	6.1935E-09	2.6083E+16	2.5317E+17
Ce-144	3.6397E+00	1.1412E-06	4.7724E+18	2.1610E+17
Pr-143	1.7081E+00	2.5366E-08	1.0682E+17	1.0105E+17
Nd-147	7.0529E-01	8.7181E-09	3.5716E+16	4.2058E+16
Np-239	4.9723E+01	2.1433E-07	5.4005E+17	3.0148E+18
Pu-238	1.4698E-02	8.5856E-07	2.1724E+18	8.7252E+14

Pu-239	1.2878E-03	2.0718E-05	5.2203E+19	7.6428E+13
Pu-240	2.4112E-03	1.0582E-05	2.6552E+19	1.4314E+14
Pu-241	5.1970E-01	5.0450E-06	1.2606E+19	3.0851E+16
Am-241	3.4831E-04	1.0148E-07	2.5359E+17	2.0669E+13
Cm-242	8.8332E-02	2.6652E-08	6.6323E+16	5.2453E+15
Cm-244	5.8406E-03	7.2193E-08	1.7818E+17	3.4672E+14

DW Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8128E+25	0.0000E+00	
Elemental I (atoms)	4.3753E+19	4.8566E+22	
Organic I (atoms)	1.4617E+21	0.0000E+00	
Aerosols (kg)	2.9667E-03	4.8985E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0681E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3075E-05
Total I (Ci)			1.8736E+05

DW to RB Transport Group Inventory:

Time (h) = 3.0000 Leakage Transport

Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 3.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4309E+17
Organic I (atoms)	0.0000E+00	7.3740E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 3.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4309E+17
Organic I (atoms)	0.0000E+00	7.3740E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

RB Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	1.1870E-02	3.7329E-10	3.8759E+15	3.5862E+12
Co-60	1.4223E-02	1.2583E-08	1.2629E+17	4.2956E+12
Kr-85	1.1313E+03	2.8835E-03	2.0430E+22	1.6537E+17
Kr-85m	1.1722E+04	1.4244E-06	1.0092E+19	1.9228E+18
Kr-87	7.2940E+03	2.5751E-07	1.7825E+18	1.6530E+18
Kr-88	2.4406E+04	1.9464E-06	1.3320E+19	4.2924E+18
Rb-86	7.1580E-01	8.7972E-09	6.1602E+16	3.0565E+14
Sr-89	2.0112E+01	6.9227E-07	4.6842E+18	6.0775E+15
Sr-90	2.6489E+00	1.9419E-05	1.2994E+20	7.9999E+14
Sr-91	2.0133E+01	5.5538E-09	3.6754E+16	6.5498E+15
Sr-92	1.2124E+01	9.6460E-10	6.3141E+15	4.7918E+15
Y-90	7.5612E-02	1.3898E-10	9.2993E+14	1.5071E+13
Y-91	2.6291E-01	1.0720E-08	7.0945E+16	7.8236E+13
Y-92	4.5262E+00	4.7039E-10	3.0791E+15	7.9098E+14
Y-93	2.3483E-01	7.0387E-11	4.5579E+14	7.6058E+13
Zr-95	3.1173E-01	1.4510E-08	9.1983E+16	9.4186E+13
Zr-97	2.6721E-01	1.3978E-10	8.6781E+14	8.4128E+13
Nb-95	3.1276E-01	7.9984E-09	5.0702E+16	9.4453E+13
Mo-99	3.8712E+00	8.0715E-09	4.9099E+16	1.1816E+15
Tc-99m	3.5122E+00	6.6795E-10	4.0631E+15	1.0575E+15
Ru-103	3.4590E+00	1.0717E-07	6.2662E+17	1.0454E+15
Ru-105	1.5474E+00	2.3020E-10	1.3203E+15	5.4920E+14
Ru-106	1.5075E+00	4.5061E-07	2.5600E+18	4.5532E+14
Rh-105	2.2965E+00	2.7208E-09	1.5605E+16	6.9651E+14
Sb-127	3.8910E+00	1.4570E-08	6.9090E+16	1.1840E+15
Sb-129	7.5985E+00	1.3512E-09	6.3080E+15	2.7093E+15
Te-127	3.9258E+00	1.4875E-09	7.0536E+15	1.1826E+15
Te-127m	6.7469E-01	7.1528E-08	3.3917E+17	2.0376E+14

Te-129	9.1413E+00	4.3650E-10	2.0377E+15	2.9735E+15
Te-129m	2.2228E+00	7.3784E-08	3.4445E+17	6.7136E+14
Te-131m	7.8033E+00	9.7858E-09	4.4986E+16	2.4123E+15
Te-132	5.8430E+01	1.9246E-07	8.7806E+17	1.7805E+16
I-131	3.6080E+02	2.9103E-06	1.3379E+19	1.4183E+17
I-132	3.1206E+02	3.0232E-08	1.3793E+17	1.5718E+17
I-133	6.8640E+02	6.0593E-07	2.7436E+18	2.8064E+17
I-134	8.0684E+01	3.0245E-09	1.3593E+16	1.0571E+17
I-135	5.2338E+02	1.4903E-07	6.6482E+17	2.3556E+17
Xe-133	1.1979E+05	6.3999E-04	2.8978E+21	1.7571E+19
Xe-135	4.5964E+04	1.7999E-05	8.0289E+19	7.0047E+18
Cs-134	7.8660E+01	6.0796E-05	2.7323E+20	3.3519E+16
Cs-136	2.3380E+01	3.1900E-07	1.4126E+18	9.9922E+15
Cs-137	6.3305E+01	7.2780E-04	3.1992E+21	2.6975E+16
Ba-139	7.0837E+00	4.3307E-10	1.8763E+15	3.7109E+15
Ba-140	3.0880E+01	4.2180E-07	1.8144E+18	9.3472E+15
La-140	1.2164E+00	2.1885E-09	9.4139E+15	2.2438E+14
La-141	1.7217E-01	3.0444E-11	1.3003E+14	6.2441E+13
La-142	7.4238E-02	5.1860E-12	2.1994E+13	3.6531E+13
Ce-141	7.3283E-01	2.5719E-08	1.0985E+17	2.2145E+14
Ce-143	6.6557E-01	1.0022E-09	4.2207E+15	2.0532E+14
Ce-144	5.8899E-01	1.8466E-07	7.7227E+17	1.7790E+14
Pr-143	2.7694E-01	4.1127E-09	1.7320E+16	8.3397E+13
Nd-147	1.1413E-01	1.4108E-09	5.7796E+15	3.4560E+13
Np-239	8.0463E+00	3.4683E-08	8.7393E+16	2.4603E+15
Pu-238	2.3785E-03	1.3893E-07	3.5154E+17	7.1831E+11
Pu-239	2.0839E-04	3.3526E-06	8.4477E+18	6.2926E+10
Pu-240	3.9019E-04	1.7123E-06	4.2967E+18	1.1784E+11
Pu-241	8.4098E-02	8.1639E-07	2.0400E+18	2.5398E+13
Am-241	5.6370E-05	1.6424E-08	4.1041E+16	1.7020E+10
Cm-242	1.4294E-02	4.3128E-09	1.0732E+16	4.3177E+12
Cm-244	9.4514E-04	1.1682E-08	2.8833E+16	2.8544E+11

RB Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	2.3433E+22	0.0000E+00	
Elemental I (atoms)	7.7471E+17	0.0000E+00	
Organic I (atoms)	1.2706E+18	0.0000E+00	
Aerosols (kg)	8.2000E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.4667E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.7894E-08
Total I (Ci)			1.9633E+03

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	8.2432E+21
Elemental I (atoms)	7.5752E+17	4.4177E+16
Organic I (atoms)	4.7374E+17	1.5293E+16
Aerosols (kg)	8.1921E-04	4.8905E-05

Environment Integral Nuclide Release:

Time (h) = 3.0000	Ci	kg	Atoms	Bq
Co-58	2.6689E-04	8.3933E-12	8.7147E+13	9.8749E+06
Co-60	3.1969E-04	2.8281E-10	2.8386E+15	1.1828E+07
Kr-85	3.9765E+02	1.0135E-03	7.1808E+21	1.4713E+13
Kr-85m	4.5815E+03	5.5671E-07	3.9442E+18	1.6951E+14
Kr-87	3.8495E+03	1.3590E-07	9.4072E+17	1.4243E+14
Kr-88	1.0174E+04	8.1138E-07	5.5526E+18	3.7644E+14
Rb-86	4.3765E-02	5.3787E-10	3.7664E+15	1.6193E+09
Sr-89	4.5229E-01	1.5568E-08	1.0534E+17	1.6735E+10
Sr-90	5.9537E-02	4.3646E-07	2.9205E+18	2.2029E+09

Sr-91	4.8527E-01	1.3387E-10	8.8590E+14	1.7955E+10
Sr-92	3.5108E-01	2.7931E-11	1.8283E+14	1.2990E+10
Y-90	1.1950E-03	2.1964E-12	1.4697E+13	4.4215E+07
Y-91	5.8340E-03	2.3789E-10	1.5743E+15	2.1586E+08
Y-92	6.6114E-02	6.8709E-12	4.4975E+13	2.4462E+09
Y-93	5.6366E-03	1.6895E-12	1.0940E+13	2.0855E+08
Zr-95	7.0094E-03	3.2628E-10	2.0683E+15	2.5935E+08
Zr-97	6.2452E-03	3.2669E-12	2.0282E+13	2.3107E+08
Nb-95	7.0297E-03	1.7977E-10	1.1396E+15	2.6010E+08
Mo-99	8.7880E-02	1.8323E-10	1.1146E+15	3.2515E+09
Tc-99m	7.9107E-02	1.5044E-11	9.1515E+13	2.9270E+09
Ru-103	7.7798E-02	2.4105E-09	1.4094E+16	2.8785E+09
Ru-105	4.0483E-02	6.0224E-12	3.4541E+13	1.4979E+09
Ru-106	3.3886E-02	1.0129E-08	5.7543E+16	1.2538E+09
Rh-105	5.1859E-02	6.1440E-11	3.5238E+14	1.9188E+09
Sb-127	8.8078E-02	3.2982E-10	1.5639E+15	3.2589E+09
Sb-129	1.9966E-01	3.5505E-11	1.6575E+14	7.3873E+09
Te-127	8.8309E-02	3.3462E-11	1.5867E+14	3.2674E+09
Te-127m	1.5164E-02	1.6076E-09	7.6232E+15	5.6108E+08
Te-129	2.2530E-01	1.0758E-11	5.0222E+13	8.3361E+09
Te-129m	4.9966E-02	1.6586E-09	7.7429E+15	1.8487E+09
Te-131m	1.7928E-01	2.2482E-10	1.0335E+15	6.6332E+09
Te-132	1.3243E+00	4.3622E-09	1.9902E+16	4.9001E+10
I-131	1.9172E+01	1.5464E-07	7.1089E+17	7.0935E+11
I-132	2.3469E+01	2.2737E-09	1.0373E+16	8.6836E+11
I-133	3.8644E+01	3.4113E-08	1.5446E+17	1.4298E+12
I-134	2.4277E+01	9.1004E-10	4.0898E+15	8.9825E+11
I-135	3.3938E+01	9.6638E-09	4.3109E+16	1.2557E+12
Xe-133	4.2237E+04	2.2565E-04	1.0217E+21	1.5628E+15
Xe-135	1.6756E+04	6.5613E-06	2.9269E+19	6.1996E+14
Cs-134	4.7950E+00	3.7060E-06	1.6655E+19	1.7741E+11
Cs-136	1.4314E+00	1.9530E-08	8.6479E+16	5.2960E+10
Cs-137	3.8587E+00	4.4362E-05	1.9500E+20	1.4277E+11
Ba-139	2.6792E-01	1.6380E-11	7.0964E+13	9.9130E+09
Ba-140	6.9555E-01	9.5008E-09	4.0868E+16	2.5735E+10
La-140	1.8057E-02	3.2487E-11	1.3975E+14	6.6812E+08
La-141	4.5969E-03	8.1284E-13	3.4717E+12	1.7009E+08
La-142	2.6457E-03	1.8482E-13	7.8382E+11	9.7892E+07
Ce-141	1.6480E-02	5.7839E-10	2.4703E+15	6.0977E+08
Ce-143	1.5261E-02	2.2980E-11	9.6776E+13	5.6464E+08
Ce-144	1.3239E-02	4.1509E-09	1.7359E+16	4.8986E+08
Pr-143	6.2094E-03	9.2212E-11	3.8833E+14	2.2975E+08
Nd-147	2.5716E-03	3.1788E-11	1.3023E+14	9.5149E+07
Np-239	1.8296E-01	7.8866E-10	1.9872E+15	6.7696E+09
Pu-238	5.3459E-05	3.1226E-09	7.9012E+15	1.9780E+06
Pu-239	4.6832E-06	7.5345E-08	1.8985E+17	1.7328E+05
Pu-240	8.7698E-06	3.8487E-08	9.6572E+16	3.2448E+05
Pu-241	1.8902E-03	1.8349E-08	4.5851E+16	6.9938E+07
Am-241	1.2667E-06	3.6906E-10	9.2222E+14	4.6867E+04
Cm-242	3.2133E-04	9.6952E-11	2.4126E+14	1.1889E+07
Cm-244	2.1243E-05	2.6258E-10	6.4806E+14	7.8599E+05

Environment Transport Group Inventory:

Time (h) = 3.0000	Total Release	Release Rate/s	
Noble gases (atoms)	8.2422E+21	7.6317E+17	
Elemental I (atoms)	4.4138E+16	4.0868E+12	
Organic I (atoms)	1.5270E+16	1.4139E+12	
Aerosols (kg)	4.8902E-05	4.5280E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.6750E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			3.3585E+01
Total I (Ci)			1.3950E+02

RB to Environment Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	8.2432E+21
Elemental I (atoms)	7.5752E+17	4.4177E+16
Organic I (atoms)	4.7374E+17	1.5293E+16
Aerosols (kg)	8.1921E-04	4.8905E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3876E+16
Elemental I (atoms)	0.0000E+00	7.2801E+13
Organic I (atoms)	0.0000E+00	2.2540E+12
Aerosols (kg)	0.0000E+00	8.2697E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.2376E+15
Elemental I (atoms)	8.5260E+09	2.6369E+08
Organic I (atoms)	5.5729E+09	1.7236E+08
Aerosols (kg)	9.1963E-12	2.8442E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	1.2878E+16	0.0000E+00
Elemental I (atoms)	6.4044E+13	0.0000E+00
Organic I (atoms)	1.9817E+12	0.0000E+00
Aerosols (kg)	7.3902E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.5503E-11	8.0203E-19	8.3274E+06	4.3408E+03
Co-60	3.0559E-11	2.7034E-17	2.7134E+08	5.1999E+03
Kr-85	2.0405E-04	5.2008E-10	3.6847E+15	9.5982E+10
Kr-85m	2.1143E-03	2.5691E-13	1.8202E+12	1.2938E+12
Kr-87	1.3156E-03	4.6444E-14	3.2149E+11	1.6684E+12
Kr-88	4.4020E-03	3.5106E-13	2.4024E+12	3.1577E+12
Rb-86	7.9451E-06	9.7645E-14	6.8376E+11	1.0061E+10
Sr-89	4.3212E-08	1.4874E-15	1.0064E+10	7.3559E+06
Sr-90	5.6913E-09	4.1723E-14	2.7918E+11	9.6840E+05
Sr-91	4.3256E-08	1.1933E-17	7.8967E+07	7.7820E+06
Sr-92	2.6050E-08	2.0725E-18	1.3566E+07	5.4235E+06
Y-90	1.6716E-10	3.0724E-19	2.0558E+06	2.1539E+04
Y-91	5.6565E-10	2.3065E-17	1.5264E+08	9.5229E+04
Y-92	1.0168E-08	1.0567E-18	6.9168E+06	1.2708E+06
Y-93	5.0455E-10	1.5123E-19	9.7928E+05	9.0468E+04
Zr-95	6.6976E-10	3.1176E-17	1.9763E+08	1.1400E+05
Zr-97	5.7412E-10	3.0032E-19	1.8645E+06	1.0078E+05
Nb-95	6.7198E-10	1.7185E-17	1.0894E+08	1.1434E+05
Mo-99	8.3175E-09	1.7342E-17	1.0549E+08	1.4265E+06
Tc-99m	7.5462E-09	1.4351E-18	8.7298E+06	1.2792E+06
Ru-103	7.4317E-09	2.3027E-16	1.3463E+09	1.2652E+06
Ru-105	3.3246E-09	4.9459E-19	2.8366E+06	6.3846E+05
Ru-106	3.2390E-09	9.6815E-16	5.5003E+09	5.5117E+05
Rh-105	4.9341E-09	5.8457E-18	3.3527E+07	8.4225E+05
Sb-127	8.3600E-09	3.1305E-17	1.4844E+08	1.4306E+06
Sb-129	1.6326E-08	2.9032E-18	1.3553E+07	3.1460E+06
Te-127	8.4347E-09	3.1960E-18	1.5155E+07	1.4311E+06
Te-127m	1.4496E-09	1.5368E-16	7.2873E+08	2.4665E+05
Te-129	1.9640E-08	9.3784E-19	4.3781E+06	3.5154E+06
Te-129m	4.7757E-09	1.5853E-16	7.4006E+08	8.1268E+05
Te-131m	1.6766E-08	2.1025E-17	9.6654E+07	2.9031E+06
Te-132	1.2554E-07	4.1351E-16	1.8865E+09	2.1505E+07
I-131	3.2426E-03	2.6156E-11	1.2024E+14	4.1218E+12
I-132	1.9864E-03	1.9244E-13	8.7795E+11	4.4798E+12
I-133	6.1724E-03	5.4487E-12	2.4671E+13	8.2926E+12
I-134	7.2554E-04	2.7197E-14	1.2223E+11	4.5530E+12
I-135	4.7064E-03	1.3402E-12	5.9782E+12	7.2376E+12
Xe-133	2.1665E-02	1.1574E-10	5.2407E+14	1.0255E+13
Xe-135	8.8337E-03	3.4591E-12	1.5431E+13	4.4021E+12
Cs-134	8.7310E-04	6.7482E-10	3.0327E+15	1.1026E+12
Cs-136	2.5951E-04	3.5408E-12	1.5679E+13	3.2903E+11

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Cs-137                 7.0266E-04  8.0783E-09  3.5510E+16  8.8727E+11
Ba-139                 1.5220E-08  9.3047E-19  4.0312E+06  3.9196E+06
Ba-140                 6.6347E-08  9.0627E-16  3.8983E+09  1.1309E+07
La-140                 2.7001E-09  4.8577E-18  2.0896E+07  3.3247E+05
La-141                 3.6992E-10  6.5410E-20  2.7937E+05  7.2199E+04
La-142                 1.5950E-10  1.1142E-20  4.7254E+04  3.9177E+04
Ce-141                 1.5745E-09  5.5257E-17  2.3600E+08  2.6802E+05
Ce-143                 1.4300E-09  2.1534E-18  9.0685E+06  2.4722E+05
Ce-144                 1.2655E-09  3.9676E-16  1.6593E+09  2.1534E+05
Pr-143                 5.9517E-10  8.8385E-18  3.7221E+07  1.0105E+05
Nd-147                 2.4522E-10  3.0311E-18  1.2418E+07  4.1807E+04
Np-239                 1.7288E-08  7.4519E-17  1.8777E+08  2.9690E+06
Pu-238                 5.1103E-12  2.9850E-16  7.5530E+08  8.6953E+02
Pu-239                 4.4773E-13  7.2033E-15  1.8150E+10  7.6175E+01
Pu-240                 8.3833E-13  3.6790E-15  9.2316E+09  1.4265E+02
Pu-241                 1.8069E-10  1.7540E-15  4.3830E+09  3.0745E+04
Am-241                 1.2112E-13  3.5288E-17  8.8179E+07  2.0604E+01
Cm-242                 3.0711E-11  9.2663E-18  2.3059E+07  5.2264E+03
Cm-244                 2.0307E-12  2.5100E-17  6.1950E+07  3.4553E+02

CR Transport Group Inventory:
Time (h) =   3.0000    Atmosphere     Sump
Noble gases (atoms)    4.2288E+15  0.0000E+00
Elemental I (atoms)    7.3665E+12  0.0000E+00
Organic I (atoms)      2.2940E+11  0.0000E+00
Aerosols (kg)          8.7883E-09  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.5451E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.8769E-12
Total I (Ci)                                   1.6833E-02

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   3.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.3876E+16
Elemental I (atoms)    0.0000E+00  7.2801E+13
Organic I (atoms)      0.0000E+00  2.2540E+12
Aerosols (kg)          0.0000E+00  8.2697E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   3.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.2376E+15
Elemental I (atoms)    8.5260E+09  2.6369E+08
Organic I (atoms)      5.5729E+09  1.7236E+08
Aerosols (kg)          9.1963E-12  2.8442E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   3.0000     Filtered   Transported
Noble gases (atoms)    1.2878E+16  0.0000E+00
Elemental I (atoms)    6.4044E+13  0.0000E+00
Organic I (atoms)      1.9817E+12  0.0000E+00
Aerosols (kg)          7.3902E-08  0.0000E+00

EAB Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5042E-01  8.8164E-02  2.5524E-01
Accumulated dose (rem)  5.4937E-01  6.3059E-01  5.8073E-01

LPZ Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.7491E-02  3.4324E-02  9.9368E-02
Accumulated dose (rem)  2.1388E-01  2.4550E-01  2.2609E-01

CR Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
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Delta dose (rem)	2.6999E-04	1.4760E+00	6.5757E-02
Accumulated dose (rem)	4.1809E-03	2.2592E+01	1.0015E+00

DW Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	3.6468E-03	1.1469E-10	1.1908E+15	4.3601E+15
Co-60	4.3715E-03	3.8673E-09	3.8816E+16	5.2210E+15
Kr-85	1.3565E+06	3.4576E+00	2.4497E+25	5.1249E+20
Kr-85m	1.2041E+07	1.4632E-03	1.0366E+22	5.7504E+21
Kr-87	5.0710E+06	1.7902E-04	1.2392E+21	4.7582E+21
Kr-88	2.2927E+07	1.8284E-03	1.2513E+22	1.2644E+22
Rb-86	1.2536E-01	1.5406E-09	1.0788E+16	3.1479E+17
Sr-89	6.1780E+00	2.1265E-07	1.4389E+18	7.3898E+18
Sr-90	8.1415E-01	5.9685E-06	3.9937E+19	9.7232E+17
Sr-91	5.7525E+00	1.5869E-09	1.0502E+16	8.3839E+18
Sr-92	2.8855E+00	2.2957E-10	1.5027E+15	6.9579E+18
Y-90	2.6562E-02	4.8822E-11	3.2668E+14	1.0214E+16
Y-91	8.1132E-02	3.3083E-09	2.1893E+16	9.3802E+16
Y-92	1.3292E+00	1.3814E-10	9.0421E+14	1.1546E+17
Y-93	6.7390E-02	2.0199E-11	1.3080E+14	9.7060E+16
Zr-95	9.5768E-02	4.4579E-09	2.8259E+16	1.1451E+17
Zr-97	7.8829E-02	4.1236E-11	2.5601E+14	1.0528E+17
Nb-95	9.6128E-02	2.4583E-09	1.5583E+16	1.1480E+17
Mo-99	1.1774E+00	2.4549E-09	1.4933E+16	1.4469E+18
Tc-99m	1.0760E+00	2.0464E-10	1.2448E+15	1.2886E+18
Ru-103	1.0623E+00	3.2917E-08	1.9245E+17	1.2713E+18
Ru-105	4.0685E-01	6.0526E-11	3.4714E+14	7.4498E+17
Ru-106	4.6331E-01	1.3849E-07	7.8677E+17	5.5344E+17
Rh-105	7.0069E-01	8.3015E-10	4.7612E+15	8.4882E+17
Sb-127	1.1870E+00	4.4448E-09	2.1076E+16	1.4468E+18
Sb-129	1.9892E+00	3.5374E-10	1.6514E+15	3.6861E+18
Te-127	1.2050E+00	4.5660E-10	2.1651E+15	1.4393E+18
Te-127m	2.0737E-01	2.1985E-08	1.0425E+17	2.4765E+17
Te-129	2.5154E+00	1.2011E-10	5.6071E+14	3.8577E+18
Te-129m	6.8300E-01	2.2672E-08	1.0584E+17	8.1603E+17
Te-131m	2.3436E+00	2.9390E-09	1.3511E+16	2.9808E+18
Te-132	1.7800E+01	5.8632E-08	2.6749E+17	2.1778E+19
I-131	3.1924E+04	2.5750E-04	1.1837E+21	1.5672E+20
I-132	2.5209E+04	2.4423E-06	1.1142E+19	2.1997E+20
I-133	5.8927E+04	5.2018E-05	2.3553E+20	3.1717E+20
I-134	3.2480E+03	1.2175E-07	5.4717E+17	2.0728E+20
I-135	4.1830E+04	1.1911E-05	5.3133E+19	2.8114E+20
Xe-133	1.4291E+08	7.6348E-01	3.4570E+24	5.4405E+22
Xe-135	5.1551E+07	2.0186E-02	9.0048E+22	2.1590E+22
Cs-134	1.3797E+01	1.0663E-05	4.7922E+19	3.4475E+19
Cs-136	4.0919E+00	5.5831E-08	2.4722E+17	1.0297E+19
Cs-137	1.1104E+01	1.2766E-04	5.6114E+20	2.7743E+19
Ba-139	1.3167E+00	8.0500E-11	3.4877E+14	6.3344E+18
Ba-140	9.4696E+00	1.2935E-07	5.5640E+17	1.1379E+19
La-140	4.3423E-01	7.8123E-10	3.3605E+15	1.2274E+17
La-141	4.4361E-02	7.8441E-12	3.3502E+13	8.5890E+16
La-142	1.4555E-02	1.0167E-12	4.3120E+12	6.0273E+16
Ce-141	2.2514E-01	7.9014E-09	3.3747E+16	2.6928E+17
Ce-143	2.0032E-01	3.0164E-10	1.2703E+15	2.5332E+17
Ce-144	1.8101E-01	5.6752E-08	2.3734E+17	2.1623E+17
Pr-143	8.5205E-02	1.2653E-09	5.3286E+15	1.0111E+17
Nd-147	3.4987E-02	4.3247E-10	1.7717E+15	4.2084E+16
Np-239	2.4429E+00	1.0530E-08	2.6533E+16	3.0166E+18
Pu-238	7.3105E-04	4.2702E-08	1.0805E+17	8.7305E+14
Pu-239	6.4057E-05	1.0306E-06	2.5968E+18	7.6475E+13
Pu-240	1.1993E-04	5.2630E-07	1.3206E+18	1.4322E+14
Pu-241	2.5848E-02	2.5092E-07	6.2700E+17	3.0870E+16
Am-241	1.7329E-05	5.0489E-09	1.2616E+16	2.0682E+13
Cm-242	4.3926E-03	1.3253E-09	3.2981E+15	5.2485E+15
Cm-244	2.9049E-04	3.5906E-09	8.8620E+15	3.4693E+14

DW Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump
Noble gases (atoms)	2.8068E+25	0.0000E+00
Elemental I (atoms)	4.3051E+19	4.8566E+22
Organic I (atoms)	1.4382E+21	0.0000E+00

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Aerosols (kg)          1.4754E-04  4.8987E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          1.0146E-05
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2270E-05
Total I (Ci)                                    1.6114E+05

DW to  RB Transport Group Inventory:
Time (h) =   4.0000  Leakage Transport

Noble gases (atoms)      4.9270E+22
Elemental I (atoms)      1.6387E+18
Organic I (atoms)        2.6913E+18
Aerosols (kg)            1.6814E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   4.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.8206E+22
Elemental I (atoms)    0.0000E+00  8.5139E+17
Organic I (atoms)      0.0000E+00  1.0148E+18
Aerosols (kg)          0.0000E+00  8.8348E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   4.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.8206E+22
Elemental I (atoms)    0.0000E+00  8.5139E+17
Organic I (atoms)      0.0000E+00  1.0148E+18
Aerosols (kg)          0.0000E+00  8.8348E-04

RB Compartment Nuclide Inventory:

Time (h) =   4.0000       Ci           kg          Atoms       Decay
Co-58                  8.5059E-03  2.6750E-10  2.7774E+15  4.9090E+12
Co-60                  1.0196E-02  9.0203E-09  9.0536E+16  5.8809E+12
Kr-85                  1.5310E+03  3.9023E-03  2.7647E+22  3.4682E+17
Kr-85m                 1.3590E+04  1.6513E-06  1.1700E+19  3.6582E+18
Kr-87                  5.7232E+03  2.0205E-07  1.3986E+18  2.5432E+18
Kr-88                  2.5876E+04  2.0636E-06  1.4122E+19  7.7456E+18
Rb-86                  5.1206E-01  6.2932E-09  4.4068E+16  3.8534E+14
Sr-89                  1.4410E+01  4.9600E-07  3.3562E+18  8.3185E+15
Sr-90                  1.8990E+00  1.3921E-05  9.3151E+19  1.0952E+15
Sr-91                  1.3417E+01  3.7014E-09  2.4495E+16  8.7182E+15
Sr-92                  6.7303E+00  5.3545E-10  3.5050E+15  5.9925E+15
Y-90                   7.4072E-02  1.3615E-10  9.1099E+14  2.4800E+13
Y-91                   1.9126E-01  7.7991E-09  5.1612E+16  1.0772E+14
Y-92                   4.0381E+00  4.1966E-10  2.7470E+15  1.3489E+15
Y-93                   1.5718E-01  4.7113E-11  3.0508E+14  1.0140E+14
Zr-95                  2.2337E-01  1.0398E-08  6.5912E+16  1.2892E+14
Zr-97                  1.8386E-01  9.6180E-11  5.9712E+14  1.1334E+14
Nb-95                  2.2421E-01  5.7339E-09  3.6348E+16  1.2931E+14
Mo-99                  2.7463E+00  5.7260E-09  3.4831E+16  1.6109E+15
Tc-99m                 2.5098E+00  4.7730E-10  2.9034E+15  1.4462E+15
Ru-103                 2.4779E+00  7.6776E-08  4.4889E+17  1.4308E+15
Ru-105                 9.4897E-01  1.4117E-10  8.0968E+14  7.0956E+14
Ru-106                 1.0807E+00  3.2301E-07  1.8351E+18  6.2334E+14
Rh-105                 1.6343E+00  1.9363E-09  1.1105E+16  9.5146E+14
Sb-127                 2.7686E+00  1.0367E-08  4.9160E+16  1.6162E+15
Sb-129                 4.6398E+00  8.2508E-10  3.8518E+15  3.4952E+15
Te-127                 2.8107E+00  1.0650E-09  5.0501E+15  1.6183E+15
Te-127m                4.8368E-01  5.1278E-08  2.4315E+17  2.7895E+14
Te-129                 5.8670E+00  2.8015E-10  1.3078E+15  3.9184E+15
Te-129m                1.5931E+00  5.2882E-08  2.4687E+17  9.1907E+14
Te-131m                5.4663E+00  6.8552E-09  3.1513E+16  3.2726E+15
Te-132                 4.1518E+01  1.3676E-07  6.2392E+17  2.4290E+16
I-131                  2.7453E+02  2.2144E-06  1.0180E+19  1.8327E+17
I-132                  1.8981E+02  1.8389E-08  8.3894E+16  1.8935E+17
I-133                  5.0692E+02  4.4749E-07  2.0262E+18  3.5835E+17
I-134                  2.7941E+01  1.0474E-09  4.7071E+15  1.1224E+17
I-135                  3.5984E+02  1.0247E-07  4.5708E+17  2.9285E+17
Xe-133                 1.6126E+05  8.6151E-04  3.9008E+21  3.6732E+19
Xe-135                 5.7914E+04  2.2678E-05  1.0116E+20  1.4111E+19
Cs-134                 5.6356E+01  4.3557E-05  1.9575E+20  4.2283E+16
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Cs-136	1.6714E+01	2.2806E-07	1.0098E+18	1.2594E+16
Cs-137	4.5357E+01	5.2145E-04	2.2921E+21	3.4028E+16
Ba-139	3.0712E+00	1.8776E-10	8.1348E+14	4.3399E+15
Ba-140	2.2087E+01	3.0170E-07	1.2978E+18	1.2785E+16
La-140	1.2345E+00	2.2211E-09	9.5539E+15	3.8371E+14
La-141	1.0347E-01	1.8296E-11	7.8143E+13	8.0118E+13
La-142	3.3948E-02	2.3715E-12	1.0057E+13	4.3277E+13
Ce-141	5.2499E-01	1.8425E-08	7.8694E+16	3.0310E+14
Ce-143	4.6723E-01	7.0357E-10	2.9629E+15	2.7877E+14
Ce-144	4.2220E-01	1.3237E-07	5.5358E+17	2.4354E+14
Pr-143	1.9912E-01	2.9570E-09	1.2453E+16	1.1430E+14
Nd-147	8.1604E-02	1.0087E-09	4.1324E+15	4.7265E+13
Np-239	5.6980E+00	2.4561E-08	6.1887E+16	3.3519E+15
Pu-238	1.7051E-03	9.9600E-08	2.5202E+17	9.8341E+11
Pu-239	1.4941E-04	2.4038E-06	6.0568E+18	8.6153E+10
Pu-240	2.7972E-04	1.2276E-06	3.0802E+18	1.6133E+11
Pu-241	6.0289E-02	5.8526E-07	1.4625E+18	3.4772E+13
Am-241	4.0422E-05	1.1778E-08	2.9430E+16	2.3303E+10
Cm-242	1.0245E-02	3.0913E-09	7.6926E+15	5.9107E+12
Cm-244	6.7756E-04	8.3750E-09	2.0670E+16	3.9078E+11

RB Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	3.1676E+22	0.0000E+00	
Elemental I (atoms)	5.6966E+17	0.0000E+00	
Organic I (atoms)	1.6616E+18	0.0000E+00	
Aerosols (kg)	5.8748E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.1041E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3330E-08
Total I (Ci)			1.3590E+03

DW to RB Transport Group Inventory:

Time (h) = 4.0000	Leakage Transport
Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.6387E+18
Organic I (atoms)	2.6913E+18
Aerosols (kg)	1.6814E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7530E+22
Elemental I (atoms)	9.7363E+17	5.0860E+16
Organic I (atoms)	9.5334E+17	3.0127E+16
Aerosols (kg)	1.0453E-03	5.5897E-05

Environment Integral Nuclide Release:

Time (h) = 4.0000	Ci	kg	Atoms	Bq
Co-58	3.6812E-04	1.1577E-11	1.2020E+14	1.3620E+07
Co-60	4.4101E-04	3.9014E-10	3.9158E+15	1.6317E+07
Kr-85	8.4623E+02	2.1569E-03	1.5281E+22	3.1310E+13
Kr-85m	8.8384E+03	1.0740E-06	7.6090E+18	3.2702E+14
Kr-87	5.9900E+03	2.1147E-07	1.4638E+18	2.2163E+14
Kr-88	1.8606E+04	1.4838E-06	1.0154E+19	6.8842E+14
Rb-86	4.9864E-02	6.1282E-10	4.2913E+15	1.8450E+09
Sr-89	6.2379E-01	2.1471E-08	1.4528E+17	2.3080E+10
Sr-90	8.2132E-02	6.0211E-07	4.0289E+18	3.0389E+09
Sr-91	6.5061E-01	1.7948E-10	1.1877E+15	2.4072E+10
Sr-92	4.4180E-01	3.5149E-11	2.3008E+14	1.6347E+10
Y-90	1.9637E-03	3.6093E-12	2.4151E+13	7.2656E+07
Y-91	8.0941E-03	3.3005E-10	2.1842E+15	2.9948E+08
Y-92	1.1019E-01	1.1452E-11	7.4961E+13	4.0771E+09
Y-93	7.5695E-03	2.2688E-12	1.4692E+13	2.8007E+08
Zr-95	9.6677E-03	4.5002E-10	2.8527E+15	3.5771E+08
Zr-97	8.4763E-03	4.4340E-12	2.7528E+13	3.1362E+08
Nb-95	9.6975E-03	2.4800E-10	1.5721E+15	3.5881E+08
Mo-99	1.2072E-01	2.5170E-10	1.5311E+15	4.4666E+09
Tc-99m	1.0902E-01	2.0733E-11	1.2612E+14	4.0337E+09
Ru-103	1.0729E-01	3.3244E-09	1.9437E+16	3.9698E+09

Ru-105	5.2660E-02	7.8339E-12	4.4930E+13	1.9484E+09
Ru-106	4.6745E-02	1.3972E-08	7.9379E+16	1.7296E+09
Rh-105	7.1376E-02	8.4563E-11	4.8500E+14	2.6409E+09
Sb-127	1.2114E-01	4.5361E-10	2.1510E+15	4.4821E+09
Sb-129	2.5932E-01	4.6115E-11	2.1528E+14	9.5949E+09
Te-127	1.2177E-01	4.6142E-11	2.1880E+14	4.5056E+09
Te-127m	2.0919E-02	2.2178E-09	1.0516E+16	7.7401E+08
Te-129	2.9898E-01	1.4276E-11	6.6647E+13	1.1062E+10
Te-129m	6.8923E-02	2.2879E-09	1.0681E+16	2.5502E+09
Te-131m	2.4504E-01	3.0730E-10	1.4127E+15	9.0665E+09
Te-132	1.8205E+00	5.9964E-09	2.7357E+16	6.7357E+10
I-131	2.2332E+01	1.8013E-07	8.2808E+17	8.2629E+11
I-132	2.5900E+01	2.5092E-09	1.1448E+16	9.5831E+11
I-133	4.4562E+01	3.9338E-08	1.7812E+17	1.6488E+12
I-134	2.4755E+01	9.2798E-10	4.1705E+15	9.1595E+11
I-135	3.8286E+01	1.0902E-08	4.8631E+16	1.4166E+12
Xe-133	8.9592E+04	4.7864E-04	2.1672E+21	3.3149E+15
Xe-135	3.4254E+04	1.3413E-05	5.9834E+19	1.2674E+15
Cs-134	5.4656E+00	4.2244E-06	1.8985E+19	2.0223E+11
Cs-136	1.6305E+00	2.2247E-08	9.8509E+16	6.0328E+10
Cs-137	4.3985E+00	5.0568E-05	2.2228E+20	1.6274E+11
Ba-139	3.1486E-01	1.9249E-11	8.3397E+13	1.1650E+10
Ba-140	9.5864E-01	1.3095E-08	5.6327E+16	3.5470E+10
La-140	3.0694E-02	5.5222E-11	2.3754E+14	1.1357E+09
La-141	5.9379E-03	1.0500E-12	4.4844E+12	2.1970E+08
La-142	3.1505E-03	2.2008E-13	9.3337E+11	1.1657E+08
Ce-141	2.2729E-02	7.9769E-10	3.4070E+15	8.4097E+08
Ce-143	2.0876E-02	3.1436E-11	1.3239E+14	7.7242E+08
Ce-144	1.8263E-02	5.7260E-09	2.3946E+16	6.7573E+08
Pr-143	8.5754E-03	1.2735E-10	5.3629E+14	3.1729E+08
Nd-147	3.5438E-03	4.3805E-11	1.7946E+14	1.3112E+08
Np-239	2.5116E-01	1.0826E-09	2.7279E+15	9.2928E+09
Pu-238	7.3747E-05	4.3077E-09	1.0900E+16	2.7286E+06
Pu-239	6.4608E-06	1.0394E-07	2.6191E+17	2.3905E+05
Pu-240	1.2098E-05	5.3093E-08	1.3322E+17	4.4763E+05
Pu-241	2.6076E-03	2.5313E-08	6.3252E+16	9.6480E+07
Am-241	1.7476E-06	5.0918E-10	1.2723E+15	6.4661E+04
Cm-242	4.4324E-04	1.3374E-10	3.3280E+14	1.6400E+07
Cm-244	2.9305E-05	3.6223E-10	8.9401E+14	1.0843E+06

Environment Transport Group Inventory:

Time (h) = 4.0000	Total Release	Release Rate/s	
Noble gases (atoms)	1.7528E+22	1.2172E+18	
Elemental I (atoms)	5.0812E+16	3.5286E+12	
Organic I (atoms)	3.0083E+16	2.0891E+12	
Aerosols (kg)	5.5894E-05	3.8815E-09	
Dose Effective (Ci) I-131 (Thyroid)			3.1037E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			3.8785E+01
Total I (Ci)			1.5584E+02

RB to Environment Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7530E+22
Elemental I (atoms)	9.7363E+17	5.0860E+16
Organic I (atoms)	9.5334E+17	3.0127E+16
Aerosols (kg)	1.0453E-03	5.5897E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5499E+16
Elemental I (atoms)	0.0000E+00	7.2802E+13
Organic I (atoms)	0.0000E+00	2.2566E+12
Aerosols (kg)	0.0000E+00	8.2698E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.8902E+15
Elemental I (atoms)	1.1076E+10	3.4256E+08
Organic I (atoms)	1.1232E+10	3.4738E+08
Aerosols (kg)	1.1864E-11	3.6692E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	1.6684E+16	0.0000E+00
Elemental I (atoms)	6.7986E+13	0.0000E+00
Organic I (atoms)	2.1053E+12	0.0000E+00
Aerosols (kg)	7.8631E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	2.4657E-11	7.7542E-19	8.0512E+06	7.7368E+03
Co-60	2.9557E-11	2.6148E-17	2.6244E+08	9.2701E+03
Kr-85	2.7516E-04	7.0135E-10	4.9690E+15	1.2815E+11
Kr-85m	2.4425E-03	2.9679E-13	2.1027E+12	1.6014E+12
Kr-87	1.0286E-03	3.6314E-14	2.5136E+11	1.8261E+12
Kr-88	4.6506E-03	3.7089E-13	2.5381E+12	3.7697E+12
Rb-86	3.6654E-06	4.5048E-14	3.1545E+11	1.0770E+10
Sr-89	4.1772E-08	1.4378E-15	9.7289E+09	1.3110E+07
Sr-90	5.5047E-09	4.0355E-14	2.7003E+11	1.7264E+06
Sr-91	3.8894E-08	1.0729E-17	7.1005E+07	1.3340E+07
Sr-92	1.9510E-08	1.5522E-18	1.0160E+07	8.4880E+06
Y-90	2.1690E-10	3.9866E-19	2.6676E+06	4.7127E+04
Y-91	5.5480E-10	2.2623E-17	1.4971E+08	1.7104E+05
Y-92	1.1876E-08	1.2342E-18	8.0789E+06	2.7475E+06
Y-93	4.5565E-10	1.3657E-19	8.8436E+05	1.5543E+05
Zr-95	6.4751E-10	3.0141E-17	1.9107E+08	2.0319E+05
Zr-97	5.3299E-10	2.7881E-19	1.7309E+06	1.7571E+05
Nb-95	6.4995E-10	1.6621E-17	1.0536E+08	2.0383E+05
Mo-99	7.9608E-09	1.6598E-17	1.0097E+08	2.5286E+06
Tc-99m	7.2753E-09	1.3836E-18	8.4164E+06	2.2772E+06
Ru-103	7.1829E-09	2.2256E-16	1.3012E+09	2.2547E+06
Ru-105	2.7509E-09	4.0923E-19	2.3471E+06	1.0487E+06
Ru-106	3.1326E-09	9.3634E-16	5.3196E+09	9.8255E+05
Rh-105	4.7376E-09	5.6129E-18	3.2192E+07	1.4967E+06
Sb-127	8.0256E-09	3.0053E-17	1.4250E+08	2.5399E+06
Sb-129	1.3450E-08	2.3918E-18	1.1165E+07	5.1562E+06
Te-127	8.1476E-09	3.0872E-18	1.4639E+07	2.5497E+06
Te-127m	1.4021E-09	1.4864E-16	7.0485E+08	4.3972E+05
Te-129	1.7007E-08	8.1210E-19	3.7912E+06	5.9352E+06
Te-129m	4.6180E-09	1.5329E-16	7.1562E+08	1.4487E+06
Te-131m	1.5846E-08	1.9872E-17	9.1351E+07	5.1107E+06
Te-132	1.2035E-07	3.9643E-16	1.8086E+09	3.8152E+07
I-131	1.4930E-03	1.2043E-11	5.5361E+13	4.4108E+12
I-132	6.7916E-04	6.5796E-14	3.0018E+11	4.6359E+12
I-133	2.7587E-03	2.4353E-12	1.1027E+13	8.8357E+12
I-134	1.5206E-04	5.6999E-15	2.5616E+10	4.6000E+12
I-135	1.9583E-03	5.5762E-13	2.4874E+12	7.6391E+12
Xe-133	2.9021E-02	1.5504E-10	7.0202E+14	1.3658E+13
Xe-135	1.0742E-02	4.2065E-12	1.8765E+13	5.7161E+12
Cs-134	4.0340E-04	3.1179E-10	1.4012E+15	1.1805E+12
Cs-136	1.1964E-04	1.6325E-12	7.2286E+12	3.5218E+11
Cs-137	3.2467E-04	3.7326E-09	1.6408E+16	9.5000E+11
Ba-139	8.9029E-09	5.4429E-19	2.3581E+06	5.5158E+06
Ba-140	6.4027E-08	8.7458E-16	3.7620E+09	2.0135E+07
La-140	3.6185E-09	6.5100E-18	2.8003E+07	7.5269E+05
La-141	2.9994E-10	5.3037E-20	2.2652E+05	1.1740E+05
La-142	9.8409E-11	6.8745E-21	2.9155E+04	5.6317E+04
Ce-141	1.5218E-09	5.3410E-17	2.2811E+08	4.7765E+05
Ce-143	1.3544E-09	2.0395E-18	8.5889E+06	4.3572E+05
Ce-144	1.2239E-09	3.8372E-16	1.6047E+09	3.8388E+05
Pr-143	5.7728E-10	8.5727E-18	3.6102E+07	1.8042E+05
Nd-147	2.3655E-10	2.9241E-18	1.1979E+07	7.4425E+04
Np-239	1.6517E-08	7.1198E-17	1.7940E+08	5.2576E+06

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Pu-238                 4.9428E-12  2.8872E-16  7.3055E+08  1.5502E+03
Pu-239                 4.3311E-13  6.9680E-15  1.7558E+10  1.3581E+02
Pu-240                 8.1085E-13  3.5585E-15  8.9290E+09  2.5430E+02
Pu-241                 1.7477E-10  1.6965E-15  4.2394E+09  5.4811E+04
Am-241                 1.1718E-13  3.4141E-17  8.5312E+07  3.6738E+01
Cm-242                 2.9699E-11  8.9610E-18  2.2299E+07  9.3165E+03
Cm-244                 1.9641E-12  2.4277E-17  5.9919E+07  6.1600E+02

CR Transport Group Inventory:
Time (h) =   4.0000    Atmosphere     Sump
Noble gases (atoms)    5.6946E+15  0.0000E+00
Elemental I (atoms)    3.3562E+12  0.0000E+00
Organic I (atoms)      1.0643E+11  0.0000E+00
Aerosols (kg)          4.0605E-09  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.0388E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   8.4628E-13
Total I (Ci)                                   7.0412E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.5499E+16
Elemental I (atoms)    0.0000E+00  7.2802E+13
Organic I (atoms)      0.0000E+00  2.2566E+12
Aerosols (kg)          0.0000E+00  8.2698E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.8902E+15
Elemental I (atoms)    1.1076E+10  3.4256E+08
Organic I (atoms)      1.1232E+10  3.4738E+08
Aerosols (kg)          1.1864E-11  3.6692E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    1.6684E+16  0.0000E+00
Elemental I (atoms)    6.7986E+13  0.0000E+00
Organic I (atoms)      2.1053E+12  0.0000E+00
Aerosols (kg)          7.8631E-08  0.0000E+00

EAB Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.9341E-01  1.9258E-01  9.0325E-01
Accumulated dose (rem)  1.4428E+00  8.2317E-01  1.4840E+00

LPZ Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6998E-02  7.9752E-03  3.7405E-02
Accumulated dose (rem)  2.5088E-01  2.5347E-01  2.6349E-01

CR Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3964E-04  1.1838E+00  5.3421E-02
Accumulated dose (rem)  4.8205E-03  2.3776E+01  1.0549E+00

DW Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg          Atoms      Decay
Co-58                  3.6262E-03  1.1404E-10  1.1841E+15  4.3620E+15
Co-60                  4.3537E-03  3.8515E-09  3.8657E+16  5.2233E+15
Kr-85                  1.3511E+06  3.4437E+00  2.4398E+25  1.2338E+21
Kr-85m                 6.4586E+06  7.8481E-04  5.5603E+21  1.0525E+22
Kr-87                  5.7076E+05  2.0150E-05  1.3948E+20  5.8558E+21
Kr-88                  8.6023E+06  6.8603E-04  4.6947E+21  2.0430E+22
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Rb-86	1.2408E-01	1.5250E-09	1.0679E+16	3.1486E+17
Sr-89	6.1391E+00	2.1131E-07	1.4298E+18	7.3930E+18
Sr-90	8.1087E-01	5.9445E-06	3.9776E+19	9.7276E+17
Sr-91	4.2791E+00	1.1805E-09	7.8119E+15	8.3866E+18
Sr-92	1.0331E+00	8.2193E-11	5.3802E+14	6.9588E+18
Y-90	5.9730E-02	1.0979E-10	7.3461E+14	1.0237E+16
Y-91	8.4763E-02	3.4563E-09	2.2873E+16	9.3846E+16
Y-92	1.5284E+00	1.5884E-10	1.0397E+15	1.1628E+17
Y-93	5.1007E-02	1.5288E-11	9.8998E+13	9.7091E+16
Zr-95	9.5210E-02	4.4319E-09	2.8094E+16	1.1456E+17
Zr-97	6.6632E-02	3.4856E-11	2.1640E+14	1.0532E+17
Nb-95	9.5737E-02	2.4483E-09	1.5520E+16	1.1485E+17
Mo-99	1.1244E+00	2.3445E-09	1.4261E+16	1.4476E+18
Tc-99m	1.0507E+00	1.9982E-10	1.2155E+15	1.2891E+18
Ru-103	1.0550E+00	3.2688E-08	1.9112E+17	1.2718E+18
Ru-105	2.1702E-01	3.2284E-11	1.8516E+14	7.4514E+17
Ru-106	4.6131E-01	1.3789E-07	7.8336E+17	5.5369E+17
Rh-105	6.6790E-01	7.9130E-10	4.5384E+15	8.4918E+17
Sb-127	1.1473E+00	4.2961E-09	2.0371E+16	1.4475E+18
Sb-129	1.0428E+00	1.8544E-10	8.6570E+14	3.6869E+18
Te-127	1.1901E+00	4.5096E-10	2.1384E+15	1.4399E+18
Te-127m	2.0654E-01	2.1897E-08	1.0383E+17	2.4776E+17
Te-129	1.5769E+00	7.5297E-11	3.5151E+14	3.8587E+18
Te-129m	6.7903E-01	2.2540E-08	1.0522E+17	8.1640E+17
Te-131m	2.1281E+00	2.6688E-09	1.2269E+16	2.9819E+18
Te-132	1.7111E+01	5.6362E-08	2.5714E+17	2.1787E+19
I-131	3.1342E+04	2.5281E-04	1.1622E+21	1.7357E+20
I-132	7.5334E+03	7.2983E-07	3.3297E+18	2.2777E+20
I-133	5.1365E+04	4.5343E-05	2.0531E+20	3.4651E+20
I-134	1.3688E+02	5.1311E-09	2.3060E+16	2.0780E+20
I-135	2.7388E+04	7.7988E-06	3.4789E+19	2.9931E+20
Xe-133	1.3924E+08	7.4385E-01	3.3681E+24	1.2956E+23
Xe-135	3.7853E+07	1.4823E-02	6.6122E+22	4.5218E+22
Cs-134	1.3739E+01	1.0619E-05	4.7722E+19	3.4482E+19
Cs-136	4.0396E+00	5.5118E-08	2.4406E+17	1.0299E+19
Cs-137	1.1059E+01	1.2714E-04	5.5888E+20	2.7749E+19
Ba-139	1.7545E-01	1.0726E-11	4.6471E+13	6.3347E+18
Ba-140	9.3464E+00	1.2767E-07	5.4916E+17	1.1384E+19
La-140	1.0289E+00	1.8510E-09	7.9623E+15	1.2313E+17
La-141	2.1820E-02	3.8584E-12	1.6479E+13	8.5907E+16
La-142	2.4000E-03	1.6765E-13	7.1101E+11	6.0276E+16
Ce-141	2.2355E-01	7.8457E-09	3.3509E+16	2.6940E+17
Ce-143	1.8343E-01	2.7622E-10	1.1632E+15	2.5342E+17
Ce-144	1.8021E-01	5.6501E-08	2.3629E+17	2.1633E+17
Pr-143	8.5766E-02	1.2736E-09	5.3637E+15	1.0116E+17
Nd-147	3.4481E-02	4.2623E-10	1.7461E+15	4.2102E+16
Np-239	2.3166E+00	9.9858E-09	2.5161E+16	3.0179E+18
Pu-238	7.2812E-04	4.2531E-08	1.0762E+17	8.7344E+14
Pu-239	6.3831E-05	1.0269E-06	2.5876E+18	7.6509E+13
Pu-240	1.1944E-04	5.2418E-07	1.3153E+18	1.4329E+14
Pu-241	2.5743E-02	2.4991E-07	6.2447E+17	3.0884E+16
Am-241	1.7278E-05	5.0341E-09	1.2579E+16	2.0691E+13
Cm-242	4.3718E-03	1.3191E-09	3.2825E+15	5.2508E+15
Cm-244	2.8932E-04	3.5761E-09	8.8263E+15	3.4709E+14

DW Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7843E+25	0.0000E+00	
Elemental I (atoms)	4.0774E+19	4.8566E+22	
Organic I (atoms)	1.3622E+21	0.0000E+00	
Aerosols (kg)	1.4691E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.5890E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1212E-05
Total I (Ci)			1.1777E+05

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1894E+18
Aerosols (kg)	1.6818E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 8.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8342E+17
Organic I (atoms)	0.0000E+00	2.0849E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 8.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8342E+17
Organic I (atoms)	0.0000E+00	2.0849E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

RB Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	2.2359E-03	7.0317E-11	7.3010E+14	7.3672E+12
Co-60	2.6845E-03	2.3749E-09	2.3836E+16	8.8295E+12
Kr-85	2.2682E+03	5.7813E-03	4.0960E+22	1.4069E+18
Kr-85m	1.0843E+04	1.3175E-06	9.3346E+18	1.0545E+19
Kr-87	9.5820E+02	3.3828E-08	2.3416E+17	4.0545E+18
Kr-88	1.4442E+04	1.1517E-06	7.8816E+18	1.8853E+19
Rb-86	1.3386E-01	1.6452E-09	1.1520E+16	5.3302E+14
Sr-89	3.7855E+00	1.3030E-07	8.8166E+17	1.2482E+16
Sr-90	4.9999E-01	3.6654E-06	2.4526E+19	1.6444E+15
Sr-91	2.6386E+00	7.2788E-10	4.8169E+15	1.2190E+16
Sr-92	6.3703E-01	5.0681E-11	3.3175E+14	7.3464E+15
Y-90	3.9879E-02	7.3298E-11	4.9046E+14	5.4776E+13
Y-91	5.2797E-02	2.1529E-09	1.4247E+16	1.6412E+14
Y-92	1.0550E+00	1.0964E-10	7.1768E+14	2.5789E+15
Y-93	3.1451E-02	9.4269E-12	6.1043E+13	1.4234E+14
Zr-95	5.8708E-02	2.7328E-09	1.7323E+16	1.9347E+14
Zr-97	4.1086E-02	2.1492E-11	1.3343E+14	1.6325E+14
Nb-95	5.9032E-02	1.5097E-09	9.5698E+15	1.9415E+14
Mo-99	6.9334E-01	1.4456E-09	8.7936E+15	2.3922E+15
Tc-99m	6.4787E-01	1.2321E-10	7.4948E+14	2.1630E+15
Ru-103	6.5050E-01	2.0156E-08	1.1785E+17	2.1465E+15
Ru-105	1.3381E-01	1.9907E-11	1.1417E+14	9.2754E+14
Ru-106	2.8445E-01	8.5021E-08	4.8303E+17	9.3582E+14
Rh-105	4.1184E-01	4.8793E-10	2.7984E+15	1.4166E+15
Sb-127	7.0742E-01	2.6490E-09	1.2561E+16	2.4075E+15
Sb-129	6.4300E-01	1.1434E-10	5.3380E+14	4.5546E+15
Te-127	7.3385E-01	2.7807E-10	1.3185E+15	2.4258E+15
Te-127m	1.2736E-01	1.3502E-08	6.4023E+16	4.1883E+14
Te-129	9.7233E-01	4.6429E-11	2.1675E+14	5.3102E+15
Te-129m	4.1869E-01	1.3898E-08	6.4882E+16	1.3795E+15
Te-131m	1.3122E+00	1.6456E-09	7.5650E+15	4.7977E+15
Te-132	1.0551E+01	3.4754E-08	1.5855E+17	3.6132E+16
I-131	1.1439E+02	9.2271E-07	4.2418E+18	2.7657E+17
I-132	3.2935E+01	3.1907E-09	1.4557E+16	2.3499E+17
I-133	1.8750E+02	1.6551E-07	7.4943E+17	5.2217E+17
I-134	4.9964E-01	1.8730E-11	8.4173E+13	1.1573E+17
I-135	9.9974E+01	2.8467E-08	1.2699E+17	3.9638E+17
Xe-133	2.3374E+05	1.2487E-03	5.6542E+21	1.4711E+20
Xe-135	6.3512E+04	2.4870E-05	1.1094E+20	4.8461E+19
Cs-134	1.4822E+01	1.1456E-05	5.1484E+19	5.8574E+16
Cs-136	4.3581E+00	5.9463E-08	2.6330E+17	1.7410E+16
Cs-137	1.1931E+01	1.3716E-04	6.0293E+20	4.7140E+16
Ba-139	1.0818E-01	6.6138E-12	2.8654E+13	4.8037E+15
Ba-140	5.7631E+00	7.8721E-08	3.3862E+17	1.9150E+16
La-140	6.8877E-01	1.2392E-09	5.3304E+15	8.9441E+14
La-141	1.3455E-02	2.3791E-12	1.0161E+13	1.0323E+14
La-142	1.4798E-03	1.0338E-13	4.3842E+11	4.8706E+13
Ce-141	1.3781E-01	4.8365E-09	2.0657E+16	4.5474E+14
Ce-143	1.1311E-01	1.7032E-10	7.1727E+14	4.0955E+14
Ce-144	1.1112E-01	3.4839E-08	1.4570E+17	3.6561E+14
Pr-143	5.2984E-02	7.8683E-10	3.3136E+15	1.7212E+14
Nd-147	2.1261E-02	2.6282E-10	1.0767E+15	7.0767E+13

Np-239	1.4285E+00	6.1574E-09	1.5515E+16	4.9685E+15
Pu-238	4.4896E-04	2.6225E-08	6.6357E+16	1.4765E+12
Pu-239	3.9359E-05	6.3322E-07	1.5955E+18	1.2937E+11
Pu-240	7.3650E-05	3.2322E-07	8.1102E+17	2.4222E+11
Pu-241	1.5874E-02	1.5409E-07	3.8505E+17	5.2207E+13
Am-241	1.0655E-05	3.1044E-09	7.7573E+15	3.4998E+10
Cm-242	2.6957E-03	8.1336E-10	2.0240E+15	8.8727E+12
Cm-244	1.7840E-04	2.2051E-09	5.4424E+15	5.8672E+11

RB Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	4.6743E+22	0.0000E+00	
Elemental I (atoms)	1.9888E+17	0.0000E+00	
Organic I (atoms)	2.2979E+18	0.0000E+00	
Aerosols (kg)	1.5451E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.4313E-09
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.1861E-09
Total I (Ci)			4.3530E+02

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1894E+18
Aerosols (kg)	1.6818E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.2187E+22
Elemental I (atoms)	1.4185E+18	6.4621E+16
Organic I (atoms)	3.6318E+18	1.1296E+17
Aerosols (kg)	1.4656E-03	6.8895E-05

Environment Integral Nuclide Release:

Time (h) = 8.0000	Ci	kg	Atoms	Bq
Co-58	5.5625E-04	1.7493E-11	1.8163E+14	2.0581E+07
Co-60	6.6668E-04	5.8978E-10	5.9196E+15	2.4667E+07
Kr-85	3.4936E+03	8.9046E-03	6.3088E+22	1.2926E+14
Kr-85m	2.5898E+04	3.1470E-06	2.2296E+19	9.5823E+14
Kr-87	9.6570E+03	3.4093E-07	2.3599E+18	3.5731E+14
Kr-88	4.5990E+04	3.6677E-06	2.5099E+19	1.7016E+15
Rb-86	6.1166E-02	7.5172E-10	5.2639E+15	2.2631E+09
Sr-89	9.4243E-01	3.2439E-08	2.1950E+17	3.4870E+10
Sr-90	1.2416E-01	9.1023E-07	6.0906E+18	4.5940E+09
Sr-91	9.1536E-01	2.5251E-10	1.6711E+15	3.3868E+10
Sr-92	5.4410E-01	4.3288E-11	2.8335E+14	2.0132E+10
Y-90	4.3022E-03	7.9075E-12	5.2911E+13	1.5918E+08
Y-91	1.2415E-02	5.0626E-10	3.3503E+15	4.5937E+08
Y-92	2.0545E-01	2.1351E-11	1.3976E+14	7.6015E+09
Y-93	1.0692E-02	3.2046E-12	2.0751E+13	3.9559E+08
Zr-95	1.4608E-02	6.7999E-10	4.3105E+15	5.4050E+08
Zr-97	1.2288E-02	6.4281E-12	3.9908E+13	4.5467E+08
Nb-95	1.4660E-02	3.7490E-10	2.3766E+15	5.4242E+08
Mo-99	1.8048E-01	3.7631E-10	2.2891E+15	6.6779E+09
Tc-99m	1.6417E-01	3.1221E-11	1.8992E+14	6.0743E+09
Ru-103	1.6207E-01	5.0217E-09	2.9360E+16	5.9966E+09
Ru-105	6.9213E-02	1.0296E-11	5.9054E+13	2.5609E+09
Ru-106	7.0660E-02	2.1120E-08	1.1999E+17	2.6144E+09
Rh-105	1.0697E-01	1.2674E-10	7.2689E+14	3.9580E+09
Sb-127	1.8168E-01	6.8031E-10	3.2259E+15	6.7221E+09
Sb-129	3.3975E-01	6.0417E-11	2.8205E+14	1.2571E+10
Te-127	1.8380E-01	6.9643E-11	3.3024E+14	6.8004E+09
Te-127m	3.1625E-02	3.3527E-09	1.5898E+16	1.1701E+09
Te-129	4.0745E-01	1.9456E-11	9.0826E+13	1.5076E+10
Te-129m	1.0416E-01	3.4576E-09	1.6141E+16	3.8539E+09
Te-131m	3.6163E-01	4.5350E-10	2.0848E+15	1.3380E+10
Te-132	2.7263E+00	8.9803E-09	4.0970E+16	1.0087E+11
I-131	2.9432E+01	2.3740E-07	1.0913E+18	1.0890E+12

I-132	2.9350E+01	2.8434E-09	1.2972E+16	1.0859E+12
I-133	5.7010E+01	5.0327E-08	2.2788E+17	2.1094E+12
I-134	2.5011E+01	9.3758E-10	4.2136E+15	9.2542E+11
I-135	4.6125E+01	1.3134E-08	5.8589E+16	1.7066E+12
Xe-133	3.6516E+05	1.9508E-03	8.8332E+21	1.3511E+16
Xe-135	1.1969E+05	4.6868E-05	2.0907E+20	4.4284E+15
Cs-134	6.7126E+00	5.1881E-06	2.3316E+19	2.4836E+11
Cs-136	1.9990E+00	2.7275E-08	1.2077E+17	7.3963E+10
Cs-137	5.4021E+00	6.2106E-05	2.7300E+20	1.9988E+11
Ba-139	3.4947E-01	2.1366E-11	9.2565E+13	1.2931E+10
Ba-140	1.4457E+00	1.9748E-08	8.4946E+16	5.3491E+10
La-140	7.0586E-02	1.2699E-10	5.4626E+14	2.6117E+09
La-141	7.6914E-03	1.3600E-12	5.8087E+12	2.8458E+08
La-142	3.5567E-03	2.4846E-13	1.0537E+12	1.3160E+08
Ce-141	3.4335E-02	1.2050E-09	5.1466E+15	1.2704E+09
Ce-143	3.0874E-02	4.6492E-11	1.9579E+14	1.1424E+09
Ce-144	2.7606E-02	8.6553E-09	3.6197E+16	1.0214E+09
Pr-143	1.3002E-02	1.9308E-10	8.1313E+14	4.8107E+08
Nd-147	5.3423E-03	6.6037E-11	2.7053E+14	1.9766E+08
Np-239	3.7481E-01	1.6156E-09	4.0709E+15	1.3868E+10
Pu-238	1.1149E-04	6.5122E-09	1.6478E+16	4.1250E+06
Pu-239	9.7684E-06	1.5716E-07	3.9599E+17	3.6143E+05
Pu-240	1.8289E-05	8.0263E-08	2.0140E+17	6.7670E+05
Pu-241	3.9419E-03	3.8267E-08	9.5621E+16	1.4585E+08
Am-241	2.6427E-06	7.6997E-10	1.9240E+15	9.7778E+04
Cm-242	6.6994E-04	2.0214E-10	5.0302E+14	2.4788E+07
Cm-244	4.4301E-05	5.4759E-10	1.3515E+15	1.6392E+06

Environment Transport Group Inventory:

Time (h) = 8.0000	Total Release	Release Rate/s	
Noble gases (atoms)	7.2180E+22	2.5062E+18	
Elemental I (atoms)	6.4555E+16	2.2415E+12	
Organic I (atoms)	1.1282E+17	3.9174E+12	
Aerosols (kg)	6.8892E-05	2.3921E-09	
Dose Effective (Ci) I-131 (Thyroid)			4.0456E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			4.9993E+01
Total I (Ci)			1.8693E+02

RB to Environment Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.2187E+22
Elemental I (atoms)	1.4185E+18	6.4621E+16
Organic I (atoms)	3.6318E+18	1.1296E+17
Aerosols (kg)	1.4656E-03	6.8895E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5054E+16
Elemental I (atoms)	0.0000E+00	7.2805E+13
Organic I (atoms)	0.0000E+00	2.2711E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.8388E+16
Elemental I (atoms)	1.6326E+10	5.0492E+08
Organic I (atoms)	4.2836E+10	1.3248E+09
Aerosols (kg)	1.6823E-11	5.2030E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	4.2836E+16	0.0000E+00

Elemental I (atoms)	7.1148E+13	0.0000E+00
Organic I (atoms)	2.2158E+12	0.0000E+00
Aerosols (kg)	8.2508E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	9.0057E-12	2.8322E-19	2.9406E+06	1.6383E+04
Co-60	1.0813E-11	9.5654E-18	9.6006E+07	1.9642E+04
Kr-85	5.1250E-04	1.3063E-09	9.2549E+15	3.4820E+11
Kr-85m	2.4499E-03	2.9770E-13	2.1091E+12	3.0147E+12
Kr-87	2.1650E-04	7.6434E-15	5.2908E+10	2.1275E+12
Kr-88	3.2631E-03	2.6023E-13	1.7808E+12	6.0337E+12
Rb-86	1.6638E-07	2.0447E-15	1.4318E+10	1.1350E+10
Sr-89	1.5247E-08	5.2480E-16	3.5511E+09	2.7753E+07
Sr-90	2.0138E-09	1.4763E-14	9.8785E+10	3.6580E+06
Sr-91	1.0627E-08	2.9317E-18	1.9401E+07	2.5465E+07
Sr-92	2.5658E-09	2.0413E-19	1.3362E+06	1.3136E+07
Y-90	1.6073E-10	2.9543E-19	1.9768E+06	1.5486E+05
Y-91	2.1267E-10	8.6720E-18	5.7389E+07	3.6969E+05
Y-92	4.2533E-09	4.4202E-19	2.8934E+06	7.1005E+06
Y-93	1.2668E-10	3.7969E-20	2.4586E+05	2.9845E+05
Zr-95	2.3646E-10	1.1007E-17	6.9773E+07	4.3023E+05
Zr-97	1.6548E-10	8.6565E-20	5.3743E+05	3.5056E+05
Nb-95	2.3776E-10	6.0804E-18	3.8544E+07	4.3189E+05
Mo-99	2.7926E-09	5.8225E-18	3.5418E+07	5.2738E+06
Tc-99m	2.6094E-09	4.9625E-19	3.0187E+06	4.7973E+06
Ru-103	2.6200E-09	8.1181E-17	4.7465E+08	4.7721E+06
Ru-105	5.3896E-10	8.0179E-20	4.5985E+05	1.8039E+06
Ru-106	1.1457E-09	3.4244E-16	1.9455E+09	2.0817E+06
Rh-105	1.6588E-09	1.9652E-18	1.1271E+07	3.1312E+06
Sb-127	2.8493E-09	1.0669E-17	5.0592E+07	5.3212E+06
Sb-129	2.5898E-09	4.6055E-19	2.1500E+06	8.8252E+06
Te-127	2.9557E-09	1.1200E-18	5.3107E+06	5.3896E+06
Te-127m	5.1295E-10	5.4381E-17	2.5787E+08	9.3173E+05
Te-129	3.9163E-09	1.8700E-19	8.7299E+05	1.0776E+07
Te-129m	1.6864E-09	5.5979E-17	2.6133E+08	3.0680E+06
Te-131m	5.2853E-09	6.6281E-18	3.0470E+07	1.0463E+07
Te-132	4.2496E-08	1.3998E-16	6.3861E+08	7.9767E+07
I-131	6.7358E-05	5.4332E-13	2.4977E+12	4.6464E+12
I-132	9.3682E-06	9.0758E-16	4.1406E+09	4.7159E+12
I-133	1.1050E-04	9.7548E-14	4.4169E+11	9.2572E+12
I-134	2.9447E-07	1.1039E-17	4.9609E+07	4.6124E+12
I-135	5.8921E-05	1.6778E-14	7.4843E+10	7.9167E+12
Xe-133	5.2817E-02	2.8217E-10	1.2776E+15	3.6569E+13
Xe-135	1.4369E-02	5.6265E-12	2.5099E+13	1.2867E+13
Cs-134	1.8422E-05	1.4238E-11	6.3987E+13	1.2444E+12
Cs-136	5.4165E-06	7.3904E-14	3.2725E+11	3.7108E+11
Cs-137	1.4828E-05	1.7047E-10	7.4936E+14	1.0014E+12
Ba-139	4.3573E-10	2.6639E-20	1.1541E+05	7.0754E+06
Ba-140	2.3212E-08	3.1707E-16	1.3639E+09	4.2518E+07
La-140	2.7761E-09	4.9946E-18	2.1484E+07	2.5901E+06
La-141	5.4192E-11	9.5824E-21	4.0926E+04	1.9733E+05
Ce-141	5.5505E-10	1.9480E-17	8.3200E+07	1.0110E+06
Ce-143	4.5556E-10	6.8600E-19	2.8889E+06	8.9476E+05
Ce-144	4.4755E-10	1.4032E-16	5.8683E+08	8.1327E+05
Pr-143	2.1341E-10	3.1692E-18	1.3346E+07	3.8385E+05
Nd-147	8.5635E-11	1.0585E-18	4.3365E+06	1.5707E+05
Np-239	5.7534E-09	2.4800E-17	6.2489E+07	1.0937E+07
Pu-238	1.8083E-12	1.0563E-16	2.6727E+08	3.2846E+03
Pu-239	1.5853E-13	2.5504E-15	6.4264E+09	2.8782E+02
Pu-240	2.9664E-13	1.3018E-15	3.2666E+09	5.3884E+02
Pu-241	6.3935E-11	6.2065E-16	1.5509E+09	1.1614E+05
Am-241	4.2914E-14	1.2504E-17	3.1244E+07	7.7874E+01
Cm-242	1.0857E-11	3.2760E-18	8.1522E+06	1.9735E+04
Cm-244	7.1853E-13	8.8815E-18	2.1920E+07	1.3052E+03

CR Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump
Noble gases (atoms)	1.0562E+16	0.0000E+00
Elemental I (atoms)	1.4627E+11	0.0000E+00
Organic I (atoms)	9.6257E+09	0.0000E+00

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Aerosols (kg)          1.8543E-10  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          3.0599E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    3.5713E-14
Total I (Ci)                                    2.4644E-04

Environment to CR Unfiltered Transport Group Inventory:

                          Pathway
Time (h) =   8.0000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.5054E+16
Elemental I (atoms)    0.0000E+00  7.2805E+13
Organic I (atoms)      0.0000E+00  2.2711E+12
Aerosols (kg)          0.0000E+00  8.2701E-08

Environment to  CR Filtered Transport Group Inventory:

                          Pathway
Time (h) =   8.0000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.8388E+16
Elemental I (atoms)    1.6326E+10  5.0492E+08
Organic I (atoms)      4.2836E+10  1.3248E+09
Aerosols (kg)          1.6823E-11  5.2030E-13

CR to  Environment - Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   8.0000      Filtered   Transported
Noble gases (atoms)    4.2836E+16  0.0000E+00
Elemental I (atoms)    7.1148E+13  0.0000E+00
Organic I (atoms)      2.2158E+12  0.0000E+00
Aerosols (kg)          8.2508E-08  0.0000E+00

EAB Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3607E+00  2.6591E-01  1.3703E+00
Accumulated dose (rem)  2.8034E+00  1.0891E+00  2.8542E+00

LPZ Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.4747E-02  2.4871E-03  2.4836E-02
Accumulated dose (rem)  2.7562E-01  2.5596E-01  2.8833E-01

CR Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.5626E-04  5.5005E-02  3.2311E-03
Accumulated dose (rem)  5.5768E-03  2.3831E+01  1.0582E+00

DW Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg          Atoms       Decay
Co-58                  3.5450E-03  1.1148E-10  1.1575E+15  4.3696E+15
Co-60                  4.2831E-03  3.7890E-09  3.8030E+16  5.2325E+15
Kr-85                  1.3294E+06  3.3884E+00  2.4006E+25  4.0890E+21
Kr-85m                 5.3460E+05  6.4962E-05  4.6025E+20  1.5591E+22
Kr-87                  9.1606E+01  3.2340E-09  2.2386E+16  5.9950E+21
Kr-88                  1.7048E+05  1.3596E-05  9.3040E+19  2.5011E+22
Rb-86                  1.1911E-01  1.4639E-09  1.0251E+16  3.1512E+17
Sr-89                  5.9859E+00  2.0604E-07  1.3942E+18  7.4059E+18
Sr-90                  7.9787E-01  5.8492E-06  3.9138E+19  9.7447E+17
Sr-91                  1.3103E+00  3.6145E-10  2.3920E+15  8.3919E+18
Sr-92                  1.6977E-02  1.3506E-12  8.8409E+12  6.9593E+18
Y-90                   1.7688E-01  3.2511E-10  2.1754E+15  1.0486E+16
Y-91                   9.0956E-02  3.7089E-09  2.4544E+16  9.4035E+16
Y-92                   1.6075E-01  1.6706E-11  1.0935E+14  1.1773E+17
Y-93                   1.6740E-02  5.0174E-12  3.2490E+13  9.7157E+16
Zr-95                  9.3014E-02  4.3297E-09  2.7446E+16  1.1476E+17
Zr-97                  3.4016E-02  1.7794E-11  1.1047E+14  1.0542E+17
Nb-95                  9.4183E-02  2.4086E-09  1.5268E+16  1.1506E+17
Mo-99                  9.3531E-01  1.9501E-09  1.1863E+16  1.4497E+18
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Tc-99m	9.3702E-01	1.7820E-10	1.0840E+15	1.2912E+18
Ru-103	1.0260E+00	3.1789E-08	1.8586E+17	1.2741E+18
Ru-105	1.7567E-02	2.6133E-12	1.4989E+13	7.4531E+17
Ru-106	4.5336E-01	1.3551E-07	7.6987E+17	5.5466E+17
Rh-105	5.0027E-01	5.9270E-10	3.3994E+15	8.5043E+17
Sb-127	1.0012E+00	3.7492E-09	1.7778E+16	1.4498E+18
Sb-129	7.8755E-02	1.4005E-11	6.5379E+13	3.6877E+18
Te-127	1.1176E+00	4.2348E-10	2.0081E+15	1.4423E+18
Te-127m	2.0319E-01	2.1541E-08	1.0215E+17	2.4820E+17
Te-129	6.8143E-01	3.2539E-11	1.5190E+14	3.8605E+18
Te-129m	6.6015E-01	2.1913E-08	1.0230E+17	8.1782E+17
Te-131m	1.4469E+00	1.8145E-09	8.3416E+15	2.9857E+18
Te-132	1.4611E+01	4.8128E-08	2.1957E+17	2.1821E+19
I-131	2.9118E+04	2.3487E-04	1.0797E+21	2.3794E+20
I-132	7.6901E+01	7.4501E-09	3.3989E+16	2.3109E+20
I-133	2.9656E+04	2.6179E-05	1.1854E+20	4.3071E+20
I-134	4.3177E-04	1.6185E-14	7.2740E+10	2.0783E+20
I-135	5.0339E+03	1.4334E-06	6.3941E+18	3.2743E+20
Xe-133	1.2546E+08	6.7025E-01	3.0348E+24	4.1126E+23
Xe-135	1.1003E+07	4.3086E-03	1.9220E+22	9.1518E+22
Cs-134	1.3511E+01	1.0443E-05	4.6931E+19	3.4511E+19
Cs-136	3.8373E+00	5.2357E-08	2.3184E+17	1.0308E+19
Cs-137	1.0882E+01	1.2510E-04	5.4992E+20	2.7772E+19
Ba-139	5.5300E-05	3.3808E-15	1.4647E+10	6.3347E+18
Ba-140	8.8693E+00	1.2115E-07	5.2113E+17	1.1404E+19
La-140	2.9552E+00	5.3167E-09	2.2870E+16	1.2737E+17
La-141	1.2773E-03	2.2586E-13	9.6464E+11	8.5923E+16
La-142	1.7742E-06	1.2394E-16	5.2562E+08	6.0277E+16
Ce-141	2.1697E-01	7.6148E-09	3.2523E+16	2.6987E+17
Ce-143	1.2898E-01	1.9422E-10	8.1793E+14	2.5375E+17
Ce-144	1.7704E-01	5.5507E-08	2.3213E+17	2.1671E+17
Pr-143	8.6702E-02	1.2876E-09	5.4222E+15	1.0134E+17
Nd-147	3.2532E-02	4.0213E-10	1.6474E+15	4.2174E+16
Np-239	1.8734E+00	8.0754E-09	2.0348E+16	3.0223E+18
Pu-238	7.1653E-04	4.1854E-08	1.0590E+17	8.7498E+14
Pu-239	6.2919E-05	1.0123E-06	2.5506E+18	7.6644E+13
Pu-240	1.1753E-04	5.1580E-07	1.2943E+18	1.4354E+14
Pu-241	2.5330E-02	2.4589E-07	6.1443E+17	3.0938E+16
Am-241	1.7076E-05	4.9752E-09	1.2432E+16	2.0728E+13
Cm-242	4.2897E-03	1.2943E-09	3.2209E+15	5.2600E+15
Cm-244	2.8467E-04	3.5187E-09	8.6845E+15	3.4770E+14

DW Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7061E+25	0.0000E+00	
Elemental I (atoms)	3.4945E+19	4.8566E+22	
Organic I (atoms)	1.1674E+21	0.0000E+00	
Aerosols (kg)	1.4446E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		8.0518E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		8.8209E-06
Total I (Ci)			6.3885E+04

DW to RB Transport Group Inventory:

Time (h) = 24.0000	Leakage Transport
Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1203E+18
Organic I (atoms)	1.8784E+19
Aerosols (kg)	1.6832E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 24.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.2356E+23
Elemental I (atoms)	0.0000E+00	9.9875E+17
Organic I (atoms)	0.0000E+00	5.9378E+18
Aerosols (kg)	0.0000E+00	8.8403E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 24.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.2356E+23

Elemental I (atoms)	0.0000E+00	9.9875E+17
Organic I (atoms)	0.0000E+00	5.9378E+18
Aerosols (kg)	0.0000E+00	8.8403E-04

RB Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	1.7199E-05	5.4088E-13	5.6159E+12	8.2260E+12
Co-60	2.0780E-05	1.8383E-11	1.8451E+14	9.8617E+12
Kr-85	2.4926E+03	6.3532E-03	4.5011E+22	6.6621E+18
Kr-85m	1.0024E+03	1.2180E-07	8.6294E+17	1.9712E+19
Kr-87	1.7176E-01	6.0637E-12	4.1973E+13	4.2989E+18
Kr-88	3.1964E+02	2.5491E-08	1.7445E+17	2.7068E+19
Rb-86	8.4439E-04	1.0378E-11	7.2669E+13	5.8397E+14
Sr-89	2.9041E-02	9.9963E-10	6.7639E+15	1.3935E+16
Sr-90	3.8709E-03	2.8378E-08	1.8988E+17	1.8366E+15
Sr-91	6.3569E-03	1.7536E-12	1.1605E+13	1.3028E+16
Sr-92	8.2364E-05	6.5527E-15	4.2893E+10	7.4871E+15
Y-90	8.7037E-04	1.5998E-12	1.0704E+13	7.5177E+13
Y-91	4.4379E-04	1.8096E-11	1.1976E+14	1.8487E+14
Y-92	8.0326E-04	8.3479E-14	5.4643E+11	2.8875E+15
Y-93	8.1214E-05	2.4343E-14	1.5763E+11	1.5243E+14
Zr-95	4.5127E-04	2.1006E-11	1.3316E+14	2.1602E+14
Zr-97	1.6503E-04	8.6329E-14	5.3597E+11	1.7738E+14
Nb-95	4.5694E-04	1.1685E-11	7.4075E+13	2.1684E+14
Mo-99	4.5378E-03	9.4613E-12	5.7553E+13	2.6510E+15
Tc-99m	4.5460E-03	8.6455E-13	5.2590E+12	2.4043E+15
Ru-103	4.9775E-03	1.5423E-10	9.0173E+14	2.3962E+15
Ru-105	8.5228E-05	1.2679E-14	7.2718E+10	9.6299E+14
Ru-106	2.1995E-03	6.5744E-10	3.7351E+15	1.0452E+15
Rh-105	2.4271E-03	2.8756E-12	1.6492E+13	1.5684E+15
Sb-127	4.8576E-03	1.8190E-11	8.6253E+13	2.6738E+15
Sb-129	3.8209E-04	6.7946E-14	3.1719E+11	4.7235E+15
Te-127	5.4221E-03	2.0545E-12	9.7423E+12	2.7031E+15
Te-127m	9.8579E-04	1.0451E-10	4.9557E+14	4.6780E+14
Te-129	3.3060E-03	1.5786E-13	7.3696E+11	5.5902E+15
Te-129m	3.2028E-03	1.0632E-10	4.9631E+14	1.5402E+15
Te-131m	7.0199E-03	8.8035E-12	4.0470E+13	5.2708E+15
Te-132	7.0888E-02	2.3350E-10	1.0653E+15	4.0088E+16
I-131	5.4873E+01	4.4262E-07	2.0347E+18	4.1821E+17
I-132	1.9621E-01	1.9008E-11	8.6720E+13	2.4677E+17
I-133	5.5886E+01	4.9334E-08	2.2338E+17	7.1175E+17
I-134	8.1368E-07	3.0502E-17	1.3708E+08	1.1581E+17
I-135	9.4863E+00	2.7012E-09	1.2050E+16	4.6336E+17
Xe-133	2.3523E+05	1.2567E-03	5.6902E+21	6.6530E+20
Xe-135	2.0630E+04	8.0784E-06	3.6036E+19	1.3298E+20
Cs-134	9.5779E-02	7.4028E-08	3.3269E+17	6.4240E+16
Cs-136	2.7202E-02	3.7116E-10	1.6435E+15	1.9065E+16
Cs-137	7.7140E-02	8.8686E-07	3.8984E+18	5.1701E+16
Ba-139	2.6829E-07	1.6402E-17	7.1062E+07	4.8206E+15
Ba-140	4.3030E-02	5.8778E-10	2.5283E+15	2.1352E+16
La-140	1.4534E-02	2.6148E-11	1.1248E+14	1.2457E+15
La-141	6.1970E-06	1.0958E-15	4.6801E+09	1.0666E+14
La-142	8.6077E-09	6.0130E-19	2.5501E+06	4.8953E+13
Ce-141	1.0525E-03	3.6938E-11	1.5776E+14	5.0761E+14
Ce-143	6.2576E-04	9.4229E-13	3.9683E+12	4.5056E+14
Ce-144	8.5892E-04	2.6930E-10	1.1262E+15	4.0833E+14
Pr-143	4.2110E-04	6.2535E-12	2.6335E+13	1.9260E+14
Nd-147	1.5783E-04	1.9510E-12	7.9925E+12	7.8881E+13
Np-239	9.0891E-03	3.9179E-11	9.8720E+13	5.4991E+15
Pu-238	3.4763E-06	2.0306E-10	5.1380E+14	1.6492E+12
Pu-239	3.0526E-07	4.9111E-09	1.2375E+16	1.4451E+11
Pu-240	5.7023E-07	2.5025E-09	6.2792E+15	2.7054E+11
Pu-241	1.2289E-04	1.1930E-09	2.9810E+15	5.8311E+13
Am-241	8.2850E-08	2.4139E-11	6.0319E+13	3.9098E+10
Cm-242	2.0812E-05	6.2795E-12	1.5626E+13	9.9088E+12
Cm-244	1.3811E-06	1.7071E-11	4.2134E+13	6.5532E+11

RB Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump
Noble gases (atoms)	5.0739E+22	0.0000E+00
Elemental I (atoms)	6.6063E+16	0.0000E+00

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Organic I (atoms)      2.1890E+18  0.0000E+00
Aerosols (kg)          1.0052E-06  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.9207E-09
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    2.1042E-09
Total I (Ci)                                    1.2044E+02

DW to  RB Transport Group Inventory:
Time (h) =  24.0000  Leakage Transport

Noble gases (atoms)      3.9365E+23
Elemental I (atoms)      2.1203E+18
Organic I (atoms)        1.8784E+19
Aerosols (kg)            1.6832E-03

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.4206E+23
Elemental I (atoms)    1.9003E+18  7.9520E+16
Organic I (atoms)      1.5644E+19  4.8449E+17
Aerosols (kg)          1.6158E-03  7.3542E-05

Environment Integral Nuclide Release:

Time (h) =  24.0000       Ci           kg          Atoms         Bq
Co-58                  6.2381E-04  1.9618E-11  2.0369E+14  2.3081E+07
Co-60                  7.4789E-04  6.6162E-10  6.6406E+15  2.7672E+07
Kr-85                  1.6671E+04  4.2492E-02  3.0105E+23  6.1684E+14
Kr-85m                 4.8025E+04  5.8357E-06  4.1345E+19  1.7769E+15
Kr-87                  1.0243E+04  3.6161E-07  2.5031E+18  3.7898E+14
Kr-88                  6.5679E+04  5.2379E-06  3.5845E+19  2.4301E+15
Rb-86                  6.5173E-02  8.0097E-10  5.6088E+15  2.4114E+09
Sr-89                  1.0567E+00  3.6374E-08  2.4612E+17  3.9099E+10
Sr-90                  1.3929E-01  1.0211E-06  6.8325E+18  5.1536E+09
Sr-91                  9.8023E-01  2.7041E-10  1.7895E+15  3.6269E+10
Sr-92                  5.5475E-01  4.4135E-11  2.8890E+14  2.0526E+10
Y-90                   5.9668E-03  1.0967E-11  7.3384E+13  2.2077E+08
Y-91                   1.4052E-02  5.7300E-10  3.7920E+15  5.1993E+08
Y-92                   2.2929E-01  2.3829E-11  1.5598E+14  8.4837E+09
Y-93                   1.1474E-02  3.4390E-12  2.2269E+13  4.2453E+08
Zr-95                  1.6382E-02  7.6254E-10  4.8338E+15  6.0612E+08
Zr-97                  1.3389E-02  7.0038E-12  4.3482E+13  4.9539E+08
Nb-95                  1.6446E-02  4.2057E-10  2.6660E+15  6.0849E+08
Mo-99                  2.0079E-01  4.1864E-10  2.5466E+15  7.4291E+09
Tc-99m                 1.8339E-01  3.4877E-11  2.1215E+14  6.7854E+09
Ru-103                 1.8170E-01  5.6300E-09  3.2917E+16  6.7230E+09
Ru-105                 7.1923E-02  1.0700E-11  6.1366E+13  2.6611E+09
Ru-106                 7.9262E-02  2.3692E-08  1.3460E+17  2.9327E+09
Rh-105                 1.1887E-01  1.4083E-10  8.0770E+14  4.3981E+09
Sb-127                 2.0259E-01  7.5860E-10  3.5972E+15  7.4957E+09
Sb-129                 3.5266E-01  6.2712E-11  2.9276E+14  1.3048E+10
Te-127                 2.0580E-01  7.7980E-11  3.6977E+14  7.6145E+09
Te-127m                3.5477E-02  3.7612E-09  1.7835E+16  1.3127E+09
Te-129                 4.3043E-01  2.0553E-11  9.5949E+13  1.5926E+10
Te-129m                1.1680E-01  3.8771E-09  1.8100E+16  4.3216E+09
Te-131m                3.9863E-01  4.9991E-10  2.2981E+15  1.4749E+10
Te-132                 3.0369E+00  1.0003E-08  4.5636E+16  1.1236E+11
I-131                  4.0155E+01  3.2389E-07  1.4890E+18  1.4857E+12
I-132                  3.0243E+01  2.9299E-09  1.3367E+16  1.1190E+12
I-133                  7.1239E+01  6.2887E-08  2.8475E+17  2.6358E+12
I-134                  2.5017E+01  9.3777E-10  4.2145E+15  9.2562E+11
I-135                  5.1079E+01  1.4545E-08  6.4881E+16  1.8899E+12
Xe-133                 1.6619E+06  8.8788E-03  4.0202E+22  6.1492E+16
Xe-135                 3.2667E+05  1.2792E-04  5.7063E+20  1.2087E+16
Cs-134                 7.1584E+00  5.5327E-06  2.4865E+19  2.6486E+11
Cs-136                 2.1292E+00  2.9052E-08  1.2864E+17  7.8781E+10
Cs-137                 5.7610E+00  6.6232E-05  2.9114E+20  2.1316E+11
Ba-139                 3.5074E-01  2.1443E-11  9.2899E+13  1.2977E+10
Ba-140                 1.6188E+00  2.2112E-08  9.5116E+16  5.9896E+10
La-140                 9.9252E-02  1.7857E-10  7.6811E+14  3.6723E+09
La-141                 7.9527E-03  1.4062E-12  6.0060E+12  2.9425E+08
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La-142                  3.5752E-03  2.4975E-13  1.0592E+12  1.3228E+08
Ce-141                  3.8493E-02  1.3509E-09  5.7698E+15  1.4242E+09
Ce-143                  3.4084E-02  5.1325E-11  2.1614E+14  1.2611E+09
Ce-144                  3.0966E-02  9.7089E-09  4.0603E+16  1.1458E+09
Pr-143                  1.4615E-02  2.1704E-10  9.1404E+14  5.4077E+08
Nd-147                  5.9802E-03  7.3922E-11  3.0284E+14  2.2127E+08
Np-239                  4.1641E-01  1.7949E-09  4.5228E+15  1.5407E+10
Pu-238                  1.2507E-04  7.3055E-09  1.8485E+16  4.6275E+06
Pu-239                  1.0959E-05  1.7632E-07  4.4428E+17  4.0550E+05
Pu-240                  2.0517E-05  9.0040E-08  2.2593E+17  7.5913E+05
Pu-241                  4.4221E-03  4.2928E-08  1.0727E+17  1.6362E+08
Am-241                  2.9652E-06  8.6396E-10  2.1589E+15  1.0971E+05
Cm-242                  7.5144E-04  2.2673E-10  5.6421E+14  2.7803E+07
Cm-244                  4.9698E-05  6.1429E-10  1.5161E+15  1.8388E+06

Environment Transport Group Inventory:

                          Total      Release
Time (h) =  24.0000      Release     Rate/s
Noble gases (atoms)    3.4191E+23  3.9572E+18
Elemental I (atoms)    7.9381E+16  9.1876E+11
Organic I (atoms)      4.8219E+17  5.5809E+12
Aerosols (kg)          7.3540E-05  8.5116E-10
Dose Effective (Ci) I-131 (Thyroid)             5.3696E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)       6.4963E+01
Total I  (Ci)                                   2.1773E+02

RB to Environment Transport Group Inventory:

                          Pathway
Time (h) =  24.0000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.4206E+23
Elemental I (atoms)    1.9003E+18  7.9520E+16
Organic I (atoms)      1.5644E+19  4.8449E+17
Aerosols (kg)          1.6158E-03  7.3542E-05

Environment to CR Unfiltered Transport Group Inventory:

                          Pathway
Time (h) =  24.0000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.9443E+16
Elemental I (atoms)    0.0000E+00  7.2807E+13
Organic I (atoms)      0.0000E+00  2.3184E+12
Aerosols (kg)          0.0000E+00  8.2701E-08

Environment to  CR Filtered Transport Group Inventory:

                          Pathway
Time (h) =  24.0000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.0576E+17
Elemental I (atoms)    2.0470E+10  6.3308E+08
Organic I (atoms)      1.4616E+11  4.5204E+09
Aerosols (kg)          1.8116E-11  5.6027E-13

CR to  Environment - Exhaust Transport Group Inventory:

                          Pathway
Time (h) =  24.0000      Filtered   Transported
Noble gases (atoms)    1.5595E+17  0.0000E+00
Elemental I (atoms)    7.1294E+13  0.0000E+00
Organic I (atoms)      2.2715E+12  0.0000E+00
Aerosols (kg)          8.2694E-08  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  24.0000        Ci           kg          Atoms       Decay
Co-58                   4.4603E-14  1.4027E-21  1.4564E+04  1.9375E+04
Co-60                   5.3890E-14  4.7674E-20  4.7850E+05  2.3238E+04
Kr-85                   4.4709E-04  1.1396E-09  8.0736E+15  1.3008E+12
Kr-85m                  1.7979E-04  2.1847E-14  1.5478E+11  4.7070E+12
Kr-87                   3.0808E-08  1.0876E-18  7.5286E+06  2.1749E+12
Kr-88                   5.7333E-05  4.5723E-15  3.1290E+10  7.5694E+12
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Rb-86	3.0245E-12	3.7170E-20	2.6028E+05	1.1377E+10
Sr-89	7.5316E-11	2.5924E-18	1.7541E+07	3.2817E+07
Sr-90	1.0039E-11	7.3594E-17	4.9244E+08	4.3279E+06
Sr-91	1.6486E-11	4.5478E-21	3.0096E+04	2.8426E+07
Y-90	2.2636E-12	4.1605E-21	2.7839E+04	2.2467E+05
Y-91	1.1522E-12	4.6984E-20	3.1093E+05	4.4189E+05
Zr-95	1.1703E-12	5.4476E-20	3.4533E+05	5.0879E+05
Nb-95	1.1850E-12	3.0305E-20	1.9211E+05	5.1096E+05
Mo-99	1.1768E-11	2.4537E-20	1.4926E+05	6.1774E+06
Tc-99m	1.1790E-11	2.2421E-21	1.3639E+04	5.6399E+06
Ru-103	1.2909E-11	3.9997E-19	2.3385E+06	5.6419E+06
Ru-106	5.7042E-12	1.7050E-18	9.6865E+06	2.4626E+06
Rh-105	6.2945E-12	7.4574E-21	4.2771E+04	3.6616E+06
Sb-127	1.2598E-11	4.7173E-20	2.2369E+05	6.2504E+06
Te-127	1.4062E-11	5.3282E-21	2.5265E+04	6.3570E+06
Te-127m	2.5565E-12	2.7103E-19	1.2852E+06	1.1023E+06
Te-129m	8.3060E-12	2.7572E-19	1.2871E+06	3.6279E+06
Te-131m	1.8205E-11	2.2831E-20	1.0495E+05	1.2119E+07
Te-132	1.8384E-10	6.0555E-19	2.7626E+06	9.3577E+07
I-131	9.7633E-08	7.8752E-16	3.6203E+09	4.6577E+12
I-132	4.1714E-10	4.0412E-20	1.8437E+05	4.7170E+12
I-133	9.9435E-08	8.7778E-17	3.9745E+08	9.2750E+12
I-135	1.6878E-08	4.8061E-18	2.1439E+07	7.9254E+12
Xe-133	4.2192E-02	2.2541E-10	1.0206E+15	1.3054E+14
Xe-135	3.7001E-03	1.4489E-12	6.4634E+12	2.8312E+13
Cs-134	3.4306E-10	2.6515E-16	1.1916E+09	1.2474E+12
Cs-136	9.7434E-11	1.3294E-18	5.8867E+06	3.7198E+11
Cs-137	2.7630E-10	3.1765E-15	1.3963E+10	1.0039E+12
Ba-140	1.1159E-10	1.5243E-18	6.5569E+06	5.0192E+07
La-140	3.7794E-11	6.7996E-20	2.9249E+05	3.7930E+06
Ce-141	2.7294E-12	9.5792E-20	4.0913E+05	1.1952E+06
Ce-143	1.6228E-12	2.4437E-21	1.0291E+04	1.0383E+06
Ce-144	2.2275E-12	6.9839E-19	2.9207E+06	9.6209E+05
Pr-143	1.0923E-12	1.6221E-20	6.8312E+04	4.5520E+05
Nd-147	4.0931E-13	5.0596E-21	2.0728E+04	1.8536E+05
Np-239	2.3572E-11	1.0161E-19	2.5602E+05	1.2790E+07
Pu-238	9.0154E-15	5.2661E-19	1.3325E+06	3.8861E+03
Pu-239	7.9165E-16	1.2736E-17	3.2092E+07	3.4057E+02
Pu-240	1.4788E-15	6.4898E-18	1.6284E+07	6.3750E+02
Pu-241	3.1870E-13	3.0938E-18	7.7308E+06	1.3740E+05
Am-241	2.1486E-16	6.2603E-20	1.5643E+05	9.2157E+01
Cm-242	5.3973E-14	1.6285E-20	4.0525E+04	2.3345E+04
Cm-244	3.5818E-15	4.4273E-20	1.0927E+05	1.5442E+03

CR Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	9.1008E+15	0.0000E+00	
Elemental I (atoms)	1.1804E+08	0.0000E+00	
Organic I (atoms)	3.8690E+09	0.0000E+00	
Aerosols (kg)	3.5597E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.0096E-17
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.3927E-17
Total I (Ci)			2.1436E-07

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9443E+16
Elemental I (atoms)	0.0000E+00	7.2807E+13
Organic I (atoms)	0.0000E+00	2.3184E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0576E+17
Elemental I (atoms)	2.0470E+10	6.3308E+08
Organic I (atoms)	1.4616E+11	4.5204E+09
Aerosols (kg)	1.8116E-11	5.6027E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	1.5595E+17	0.0000E+00
Elemental I (atoms)	7.1294E+13	0.0000E+00
Organic I (atoms)	2.2715E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

EAB Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.6830E-01	3.8280E-01	8.8006E-01
Accumulated dose (rem)	3.6718E+00	1.4719E+00	3.7343E+00

LPZ Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.4626E-03	1.8723E-03	6.5201E-03
Accumulated dose (rem)	2.8209E-01	2.5783E-01	2.9485E-01

CR Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5411E-04	5.2086E-04	1.7014E-04
Accumulated dose (rem)	5.7309E-03	2.3831E+01	1.0583E+00

DW Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	3.3198E-03	1.0440E-10	1.0840E+15	4.4025E+15
Co-60	4.1260E-03	3.6501E-09	3.6636E+16	5.2728E+15
Kr-85	1.2814E+06	3.2660E+00	2.3139E+25	1.6604E+22
Kr-85m	7.4869E+00	9.0976E-10	6.4455E+15	1.6050E+22
Kr-88	3.8386E-03	3.0613E-13	2.0949E+12	2.5104E+22
Rb-86	1.0276E-01	1.2629E-09	8.8433E+15	3.1618E+17
Sr-89	5.5399E+00	1.9069E-07	1.2903E+18	7.4612E+18
Sr-90	7.6930E-01	5.6397E-06	3.7737E+19	9.8198E+17
Sr-91	6.6087E-03	1.8231E-12	1.2065E+13	8.3943E+18
Sr-92	1.6453E-10	1.3090E-20	8.5685E+04	6.9594E+18
Y-90	4.9708E-01	9.1365E-10	6.1134E+15	1.3901E+16
Y-91	8.8124E-02	3.5934E-09	2.3780E+16	9.4904E+16
Y-92	1.6085E-07	1.6717E-17	1.0942E+08	1.1785E+17
Y-93	1.1536E-04	3.4576E-14	2.2389E+11	9.7189E+16
Zr-95	8.6832E-02	4.0419E-09	2.5622E+16	1.1563E+17
Zr-97	1.7118E-03	8.9542E-13	5.5591E+12	1.0553E+17
Nb-95	9.0631E-02	2.3178E-09	1.4692E+16	1.1594E+17
Mo-99	4.2346E-01	8.8291E-10	5.3707E+15	1.4559E+18
Tc-99m	4.3414E-01	8.2564E-11	5.0223E+14	1.2972E+18
Ru-103	9.3840E-01	2.9076E-08	1.7000E+17	1.2835E+18
Ru-105	2.2253E-07	3.3104E-17	1.8986E+08	7.4532E+17
Ru-106	4.3475E-01	1.2995E-07	7.3827E+17	5.5892E+17
Rh-105	1.1822E-01	1.4007E-10	8.0334E+14	8.5297E+17
Sb-127	5.6263E-01	2.1068E-09	9.9901E+15	1.4570E+18
Sb-129	7.3006E-07	1.2983E-16	6.0607E+08	3.6878E+18
Te-127	7.3075E-01	2.7689E-10	1.3130E+15	1.4508E+18
Te-127m	1.9479E-01	2.0650E-08	9.7920E+16	2.5010E+17
Te-129	5.1754E-01	2.4713E-11	1.1537E+14	3.8645E+18
Te-129m	5.9852E-01	1.9868E-08	9.2748E+16	8.2385E+17
Te-131m	2.6438E-01	3.3155E-10	1.5241E+15	2.9924E+18
Te-132	7.4435E+00	2.4518E-08	1.1186E+17	2.1923E+19
I-131	2.1682E+04	1.7489E-04	8.0396E+20	4.7973E+20
I-132	8.8846E+00	8.6073E-10	3.9268E+15	2.3122E+20
I-133	2.5962E+03	2.2918E-06	1.0377E+19	5.3723E+20
I-135	2.5536E+00	7.2714E-10	3.2437E+15	3.3379E+20
Xe-133	8.1392E+07	4.3483E-01	1.9689E+24	1.3877E+24
Xe-135	4.3830E+04	1.7163E-05	7.6561E+19	1.1054E+23
Cs-134	1.2994E+01	1.0043E-05	4.5134E+19	3.4638E+19
Cs-136	3.1574E+00	4.3081E-08	1.9076E+17	1.0341E+19
Cs-137	1.0492E+01	1.2062E-04	5.3023E+20	2.7875E+19
Ba-140	7.2653E+00	9.9241E-08	4.2689E+17	1.1481E+19
La-140	6.3875E+00	1.1492E-08	4.9432E+16	1.7645E+17

La-141	3.7626E-09	6.6532E-19	2.8416E+06	8.5924E+16
Ce-141	1.9628E-01	6.8886E-09	2.9422E+16	2.7185E+17
Ce-143	2.7414E-02	4.1282E-11	1.7385E+14	2.5438E+17
Ce-144	1.6949E-01	5.3140E-08	2.2223E+17	2.1837E+17
Pr-143	8.0683E-02	1.1982E-09	5.0458E+15	1.0216E+17
Nd-147	2.5960E-02	3.2090E-10	1.3146E+15	4.2453E+16
Np-239	7.4715E-01	3.2206E-09	8.1150E+15	3.0341E+18
Pu-238	6.9123E-04	4.0376E-08	1.0216E+17	8.8173E+14
Pu-239	6.0962E-05	9.8078E-07	2.4713E+18	7.7238E+13
Pu-240	1.1335E-04	4.9743E-07	1.2482E+18	1.4465E+14
Pu-241	2.4418E-02	2.3704E-07	5.9231E+17	3.1177E+16
Am-241	1.6789E-05	4.8917E-09	1.2223E+16	2.0890E+13
Cm-242	4.0844E-03	1.2324E-09	3.0667E+15	5.3002E+15
Cm-244	2.7445E-04	3.3923E-09	8.3726E+15	3.5038E+14

DW Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5108E+25	0.0000E+00	
Elemental I (atoms)	2.3622E+19	4.8566E+22	
Organic I (atoms)	7.8918E+20	0.0000E+00	
Aerosols (kg)	1.3906E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.2063E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.2680E-06
Total I (Ci)			2.4289E+04

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	2.7618E+18
Organic I (atoms)	4.0213E+19
Aerosols (kg)	1.6864E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 96.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 96.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

RB Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	3.1091E-06	9.7777E-14	1.0152E+12	8.2615E+12
Co-60	3.8642E-06	3.4185E-12	3.4311E+13	9.9051E+12
Kr-85	1.2001E+03	3.0588E-03	2.1671E+22	1.8801E+19
Kr-85m	7.0118E-03	8.5203E-13	6.0365E+12	2.0256E+19
Kr-88	3.5950E-06	2.8670E-16	1.9620E+09	2.7186E+19
Rb-86	9.6237E-05	1.1827E-12	8.2822E+12	5.8521E+14
Sr-89	5.1883E-03	1.7859E-10	1.2084E+15	1.3995E+16
Sr-90	7.2048E-04	5.2819E-09	3.5342E+16	1.8447E+15
Sr-91	6.1893E-06	1.7074E-15	1.1299E+10	1.3032E+16
Y-90	4.6554E-04	8.5567E-13	5.7255E+12	7.8632E+13
Y-91	8.2532E-05	3.3654E-12	2.2271E+13	1.8580E+14
Y-92	1.5065E-10	1.5656E-20	1.0248E+05	2.8878E+15
Y-93	1.0804E-07	3.2382E-17	2.0969E+08	1.5248E+14
Zr-95	8.1322E-05	3.7855E-12	2.3996E+13	2.1695E+14
Zr-97	1.6031E-06	8.3860E-16	5.2064E+09	1.7752E+14
Nb-95	8.4880E-05	2.1707E-12	1.3760E+13	2.1780E+14
Mo-99	3.9659E-04	8.2689E-13	5.0299E+12	2.6580E+15
Tc-99m	4.0659E-04	7.7325E-14	4.7036E+11	2.4111E+15
Ru-103	8.7885E-04	2.7231E-11	1.5921E+14	2.4063E+15
Ru-105	2.0840E-10	3.1003E-20	1.7782E+05	9.6302E+14

Ru-106	4.0716E-04	1.2170E-10	6.9142E+14	1.0498E+15
Rh-105	1.1072E-04	1.3118E-13	7.5236E+11	1.5714E+15
Sb-127	5.2692E-04	1.9731E-12	9.3562E+12	2.6819E+15
Sb-129	6.8374E-10	1.2159E-19	5.6761E+05	4.7236E+15
Te-127	6.8438E-04	2.5932E-13	1.2297E+12	2.7125E+15
Te-127m	1.8242E-04	1.9340E-11	9.1707E+13	4.6986E+14
Te-129	4.8470E-04	2.3145E-14	1.0805E+11	5.5946E+15
Te-129m	5.6054E-04	1.8607E-11	8.6863E+13	1.5467E+15
Te-131m	2.4760E-04	3.1051E-13	1.4274E+12	5.2789E+15
Te-132	6.9711E-03	2.2962E-11	1.0476E+14	4.0202E+16
I-131	2.0306E+01	1.6379E-07	7.5295E+17	6.5382E+17
I-132	8.3208E-03	8.0611E-13	3.6777E+12	2.4692E+17
I-133	2.4314E+00	2.1464E-09	9.7186E+15	8.2008E+17
I-135	2.3916E-03	6.8100E-13	3.0378E+12	4.7053E+17
Xe-133	7.6227E+04	4.0724E-04	1.8439E+21	1.6187E+21
Xe-135	4.1048E+01	1.6074E-08	7.1703E+16	1.5360E+20
Cs-134	1.2169E-02	9.4056E-09	4.2270E+16	6.4387E+16
Cs-136	2.9571E-03	4.0347E-11	1.7866E+14	1.9105E+16
Cs-137	9.8264E-03	1.1297E-07	4.9659E+17	5.1820E+16
Ba-140	6.8043E-03	9.2943E-11	3.9980E+14	2.1436E+16
La-140	5.9821E-03	1.0763E-11	4.6296E+13	1.2959E+15
Ce-141	1.8383E-04	6.4515E-12	2.7555E+13	5.0975E+14
Ce-143	2.5675E-05	3.8662E-14	1.6282E+11	4.5131E+14
Ce-144	1.5873E-04	4.9768E-11	2.0813E+14	4.1012E+14
Pr-143	7.5563E-05	1.1221E-12	4.7256E+12	1.9348E+14
Nd-147	2.4313E-05	3.0053E-13	1.2312E+12	7.9185E+13
Np-239	6.9974E-04	3.0162E-12	7.6001E+12	5.5124E+15
Pu-238	6.4737E-07	3.7814E-11	9.5682E+13	1.6564E+12
Pu-239	5.7093E-08	9.1854E-10	2.3145E+15	1.4515E+11
Pu-240	1.0616E-07	4.6587E-10	1.1690E+15	2.7173E+11
Pu-241	2.2868E-05	2.2200E-10	5.5473E+14	5.8567E+13
Am-241	1.5724E-08	4.5813E-12	1.1448E+13	3.9273E+10
Cm-242	3.8252E-06	1.1542E-12	2.8721E+12	9.9520E+12
Cm-244	2.5703E-07	3.1771E-12	7.8413E+12	6.5821E+11

RB Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.3515E+22	0.0000E+00	
Elemental I (atoms)	2.2123E+16	0.0000E+00	
Organic I (atoms)	7.3910E+17	0.0000E+00	
Aerosols (kg)	1.3024E-07	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		6.1720E-10
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.2452E-10
Total I (Ci)			2.2748E+01

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	2.7618E+18
Organic I (atoms)	4.0213E+19
Aerosols (kg)	1.6864E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5428E+23
Elemental I (atoms)	2.5552E+18	9.9775E+16
Organic I (atoms)	3.7507E+19	1.1607E+18
Aerosols (kg)	1.6198E-03	7.3664E-05

Environment Integral Nuclide Release:

Time (h) = 96.0000	Ci	kg	Atoms	Bq
Co-58	6.2654E-04	1.9704E-11	2.0458E+14	2.3182E+07
Co-60	7.5123E-04	6.6458E-10	6.6703E+15	2.7796E+07
Kr-85	4.7331E+04	1.2064E-01	8.5471E+23	1.7512E+15
Kr-85m	4.9337E+04	5.9951E-06	4.2475E+19	1.8255E+15
Kr-87	1.0243E+04	3.6161E-07	2.5031E+18	3.7899E+14
Kr-88	6.5953E+04	5.2597E-06	3.5994E+19	2.4402E+15
Rb-86	6.5270E-02	8.0216E-10	5.6171E+15	2.4150E+09

Sr-89	1.0613E+00	3.6532E-08	2.4719E+17	3.9269E+10
Sr-90	1.3991E-01	1.0257E-06	6.8631E+18	5.1767E+09
Sr-91	9.8051E-01	2.7049E-10	1.7900E+15	3.6279E+10
Sr-92	5.5475E-01	4.4135E-11	2.8890E+14	2.0526E+10
Y-90	6.2358E-03	1.1462E-11	7.6693E+13	2.3073E+08
Y-91	1.4124E-02	5.7595E-10	3.8115E+15	5.2260E+08
Y-92	2.2931E-01	2.3831E-11	1.5599E+14	8.4844E+09
Y-93	1.1477E-02	3.4402E-12	2.2276E+13	4.2467E+08
Zr-95	1.6453E-02	7.6587E-10	4.8549E+15	6.0877E+08
Zr-97	1.3400E-02	7.0093E-12	4.3517E+13	4.9578E+08
Nb-95	1.6519E-02	4.2245E-10	2.6780E+15	6.1121E+08
Mo-99	2.0133E-01	4.1977E-10	2.5534E+15	7.4491E+09
Tc-99m	1.8394E-01	3.4981E-11	2.1279E+14	6.8058E+09
Ru-103	1.8249E-01	5.6543E-09	3.3059E+16	6.7519E+09
Ru-105	7.1925E-02	1.0700E-11	6.1368E+13	2.6612E+09
Ru-106	7.9616E-02	2.3797E-08	1.3520E+17	2.9458E+09
Rh-105	1.1910E-01	1.4110E-10	8.0928E+14	4.4067E+09
Sb-127	2.0321E-01	7.6095E-10	3.6083E+15	7.5189E+09
Sb-129	3.5267E-01	6.2714E-11	2.9277E+14	1.3049E+10
Te-127	2.0654E-01	7.8263E-11	3.7111E+14	7.6421E+09
Te-127m	3.5636E-02	3.7779E-09	1.7914E+16	1.3185E+09
Te-129	4.3088E-01	2.0575E-11	9.6049E+13	1.5943E+10
Te-129m	1.1730E-01	3.8938E-09	1.8178E+16	4.3402E+09
Te-131m	3.9925E-01	5.0069E-10	2.3017E+15	1.4772E+10
Te-132	3.0457E+00	1.0032E-08	4.5769E+16	1.1269E+11
I-131	5.7989E+01	4.6775E-07	2.1503E+18	2.1456E+12
I-132	3.0256E+01	2.9312E-09	1.3373E+16	1.1195E+12
I-133	7.9378E+01	7.0072E-08	3.1728E+17	2.9370E+12
I-134	2.5017E+01	9.3777E-10	4.2145E+15	9.2562E+11
I-135	5.1607E+01	1.4695E-08	6.5552E+16	1.9095E+12
Xe-133	4.0660E+06	2.1722E-02	9.8357E+22	1.5044E+17
Xe-135	3.7776E+05	1.4792E-04	6.5987E+20	1.3977E+16
Cs-134	7.1698E+00	5.5416E-06	2.4904E+19	2.6528E+11
Cs-136	2.1323E+00	2.9093E-08	1.2883E+17	7.8894E+10
Cs-137	5.7702E+00	6.6338E-05	2.9160E+20	2.1350E+11
Ba-139	3.5074E-01	2.1443E-11	9.2899E+13	1.2977E+10
Ba-140	1.6253E+00	2.2201E-08	9.5496E+16	6.0135E+10
La-140	1.0317E-01	1.8561E-10	7.9842E+14	3.8173E+09
La-141	7.9529E-03	1.4063E-12	6.0062E+12	2.9426E+08
La-142	3.5752E-03	2.4975E-13	1.0592E+12	1.3228E+08
Ce-141	3.8658E-02	1.3567E-09	5.7946E+15	1.4303E+09
Ce-143	3.4142E-02	5.1412E-11	2.1651E+14	1.2632E+09
Ce-144	3.1104E-02	9.7521E-09	4.0784E+16	1.1509E+09
Pr-143	1.4683E-02	2.1805E-10	9.1826E+14	5.4327E+08
Nd-147	6.0036E-03	7.4212E-11	3.0402E+14	2.2213E+08
Np-239	4.1745E-01	1.7994E-09	4.5340E+15	1.5445E+10
Pu-238	1.2563E-04	7.3382E-09	1.8568E+16	4.6482E+06
Pu-239	1.1009E-05	1.7711E-07	4.4627E+17	4.0732E+05
Pu-240	2.0609E-05	9.0443E-08	2.2694E+17	7.6253E+05
Pu-241	4.4419E-03	4.3120E-08	1.0775E+17	1.6435E+08
Am-241	2.9787E-06	8.6788E-10	2.1687E+15	1.1021E+05
Cm-242	7.5478E-04	2.2773E-10	5.6671E+14	2.7927E+07
Cm-244	4.9920E-05	6.1704E-10	1.5229E+15	1.8471E+06

Environment Transport Group Inventory:

Time (h) = 96.0000	Total Release	Release Rate/s	
Noble gases (atoms)	9.5381E+23	2.7599E+18	
Elemental I (atoms)	9.9534E+16	2.8800E+11	
Organic I (atoms)	1.1549E+18	3.3418E+12	
Aerosols (kg)	7.3662E-05	2.1314E-10	
Dose Effective (Ci) I-131 (Thyroid)			7.2901E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			8.5018E+01
Total I (Ci)			2.4425E+02

RB to Environment Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5428E+23
Elemental I (atoms)	2.5552E+18	9.9775E+16

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Organic I (atoms)      3.7507E+19  1.1607E+18
Aerosols (kg)          1.6198E-03  7.3664E-05

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.8623E+16
Elemental I (atoms)    0.0000E+00  7.2808E+13
Organic I (atoms)      0.0000E+00  2.3617E+12
Aerosols (kg)          0.0000E+00  8.2701E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.9392E+17
Elemental I (atoms)    2.3299E+10  7.2058E+08
Organic I (atoms)      2.4060E+11  7.4413E+09
Aerosols (kg)          1.8133E-11  5.6080E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    2.9015E+17  0.0000E+00
Elemental I (atoms)    7.1296E+13  0.0000E+00
Organic I (atoms)      2.3206E+12  0.0000E+00
Aerosols (kg)          8.2694E-08  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms      Decay
Co-60                  3.4292E-15  3.0337E-21  3.0448E+04  2.3283E+04
Kr-85                  1.0808E-04  2.7547E-10  1.9516E+15  2.4384E+12
Kr-85m                 6.3147E-10  7.6732E-20  5.4364E+05  4.7691E+12
Sr-89                  4.6042E-12  1.5848E-19  1.0724E+06  3.2879E+07
Sr-90                  6.3937E-13  4.6872E-18  3.1363E+07  4.3362E+06
Y-91                   7.3241E-14  2.9865E-21  1.9764E+04  4.4286E+05
Zr-95                  7.2167E-14  3.3593E-21  2.1295E+04  5.0975E+05
Nb-95                  7.5324E-14  1.9263E-21  1.2211E+04  5.1195E+05
Ru-103                 7.7991E-13  2.4165E-20  1.4129E+05  5.6525E+06
Ru-106                 3.6132E-13  1.0800E-19  6.1358E+05  2.4674E+06
Te-127m                1.6189E-13  1.7163E-20  8.1382E+04  1.1045E+06
Te-129m                4.9743E-13  1.6512E-20  7.7084E+04  3.6347E+06
Te-132                 6.1863E-12  2.0377E-20  9.2965E+04  9.3700E+07
I-131                  1.8020E-08  1.4535E-16  6.6818E+08  4.6579E+12
I-133                  2.1577E-09  1.9047E-18  8.6244E+06  9.2751E+12
Xe-133                 6.8649E-03  3.6675E-11  1.6606E+14  2.2054E+14
Xe-135                 3.6967E-06  1.4476E-15  6.4574E+09  3.0480E+13
Cs-134                 1.0799E-11  8.3468E-18  3.7511E+07  1.2474E+12
Cs-136                 2.6242E-12  3.5805E-20  1.5855E+05  3.7198E+11
Cs-137                 8.7201E-12  1.0025E-16  4.4068E+08  1.0039E+12
Ba-140                 6.0383E-12  8.2480E-20  3.5479E+05  5.0280E+07
La-140                 5.3087E-12  9.5509E-21  4.1084E+04  3.8424E+06
Ce-141                 1.6313E-13  5.7252E-21  2.4452E+04  1.1974E+06
Ce-144                 1.4086E-13  4.4165E-20  1.8470E+05  9.6395E+05
Pu-238                 5.7449E-16  3.3557E-20  8.4910E+04  3.8937E+03
Pu-239                 5.0666E-17  8.1513E-19  2.0539E+06  3.4123E+02
Pu-240                 9.4204E-17  4.1342E-19  1.0374E+06  6.3874E+02
Pu-241                 2.0294E-14  1.9700E-19  4.9227E+05  1.3767E+05
Am-241                 1.3953E-17  4.0655E-21  1.0159E+04  9.2338E+01

CR Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    2.1177E+15  0.0000E+00
Elemental I (atoms)    1.9633E+07  0.0000E+00
Organic I (atoms)      6.5589E+08  0.0000E+00
Aerosols (kg)          1.1558E-16  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          6.4262E-18
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    6.5024E-18
Total I (Ci)                                    2.0187E-08
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Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.8623E+16
Elemental I (atoms)	0.0000E+00	7.2808E+13
Organic I (atoms)	0.0000E+00	2.3617E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9392E+17
Elemental I (atoms)	2.3299E+10	7.2058E+08
Organic I (atoms)	2.4060E+11	7.4413E+09
Aerosols (kg)	1.8133E-11	5.6080E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.9015E+17	0.0000E+00
Elemental I (atoms)	7.1296E+13	0.0000E+00
Organic I (atoms)	2.3206E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

EAB Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2608E+00	9.1252E-01	1.2888E+00
Accumulated dose (rem)	4.9325E+00	2.3844E+00	5.0232E+00

LPZ Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.5986E-03	1.2359E-03	2.6366E-03
Accumulated dose (rem)	2.8468E-01	2.5907E-01	2.9748E-01

CR Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.1545E-05	2.9145E-04	6.0507E-05
Accumulated dose (rem)	5.7825E-03	2.3831E+01	1.0584E+00

DW Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.8796E-03	5.9110E-11	6.1374E+14	4.6129E+15
Co-60	2.9852E-03	2.6408E-09	2.6506E+16	5.5658E+15
Kr-85	9.3148E+05	2.3742E+00	1.6821E+25	1.0777E+23
Rb-86	2.8567E-02	3.5109E-10	2.4585E+15	3.2100E+17
Sr-89	2.8315E+00	9.7461E-08	6.5947E+17	7.7965E+18
Sr-90	5.6086E-01	4.1117E-06	2.7512E+19	1.0368E+18
Y-90	5.6381E-01	1.0363E-09	6.9342E+15	6.5478E+16
Y-91	4.7306E-02	1.9290E-09	1.2765E+16	1.0036E+17
Zr-95	4.7846E-02	2.2272E-09	1.4118E+16	1.2106E+17
Nb-95	6.1331E-02	1.5684E-09	9.9425E+15	1.2222E+17
Mo-99	4.4076E-04	9.1899E-13	5.5902E+12	1.4611E+18
Tc-99m	4.5189E-04	8.5939E-14	5.2277E+11	1.3022E+18
Ru-103	4.3314E-01	1.3421E-08	7.8468E+16	1.3378E+18
Ru-106	3.0233E-01	9.0367E-08	5.1340E+17	5.8921E+17
Rh-105	4.2064E-07	4.9836E-16	2.8583E+09	8.5376E+17
Sb-127	3.8088E-03	1.4262E-11	6.7630E+13	1.4663E+18
Te-127	1.2895E-01	4.8863E-11	2.3170E+14	1.4721E+18
Te-127m	1.2284E-01	1.3023E-08	6.1754E+16	2.6314E+17
Te-129	2.2106E-01	1.0555E-11	4.9276E+13	3.8863E+18
Te-129m	2.5564E-01	8.4860E-09	3.9615E+16	8.5735E+17
Te-131m	1.0575E-07	1.3262E-16	6.0968E+08	2.9939E+18
Te-132	2.1537E-02	7.0942E-11	3.2365E+14	2.2028E+19
I-131	1.6831E+03	1.3576E-05	6.2410E+19	1.1299E+21

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I-132                  2.5707E-02  2.4905E-12  1.1362E+13  2.3133E+20
I-133                  1.7657E-06  1.5587E-15  7.0578E+09  5.4745E+20
Xe-133                 1.9136E+06  1.0223E-02  4.6289E+22  3.1487E+24
Cs-134                 9.2649E+00  7.1609E-06  3.2182E+19  3.5555E+19
Cs-136                 5.8260E-01  7.9491E-09  3.5199E+16  1.0468E+19
Cs-137                 7.6498E+00  8.7947E-05  3.8659E+20  2.8622E+19
Ba-140                 1.2894E+00  1.7613E-08  7.5764E+16  1.1768E+19
La-140                 1.4978E+00  2.6948E-09  1.1592E+16  4.9219E+17
Ce-141                 8.2330E-02  2.8894E-09  1.2341E+16  2.8275E+17
Ce-143                 4.0670E-08  6.1242E-17  2.5791E+08  2.5455E+17
Ce-144                 1.1617E-01  3.6424E-08  1.5233E+17  2.3010E+17
Pr-143                 1.6197E-02  2.4053E-10  1.0130E+15  1.0555E+17
Nd-147                 3.6727E-03  4.5398E-11  1.8598E+14  4.3400E+16
Np-239                 2.5908E-04  1.1168E-12  2.8139E+12  3.0419E+18
Pu-238                 5.0611E-04  2.9563E-08  7.4803E+16  9.3108E+14
Pu-239                 4.4666E-05  7.1861E-07  1.8107E+18  8.1597E+13
Pu-240                 8.2778E-05  3.6327E-07  9.1154E+17  1.5273E+14
Pu-241                 1.7771E-02  1.7251E-07  4.3108E+17  3.2915E+16
Am-241                 1.4292E-05  4.1640E-09  1.0405E+16  2.2181E+13
Cm-242                 2.6702E-03  8.0568E-10  2.0049E+15  5.5766E+15
Cm-244                 1.9988E-04  2.4707E-09  6.0978E+15  3.6992E+14

DW Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    1.6867E+25  0.0000E+00
Elemental I (atoms)    1.8104E+18  4.8566E+22
Organic I (atoms)      6.0481E+19  0.0000E+00
Aerosols (kg)          1.0084E-04  4.8987E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          3.9625E-07
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    3.9625E-07
Total I (Ci)                                    1.6831E+03

DW to  RB Transport Group Inventory:
Time (h) = 720.0000  Leakage Transport

Noble gases (atoms)      4.9433E+24
Elemental I (atoms)      4.4088E+18
Organic I (atoms)        9.5235E+19
Aerosols (kg)            1.7096E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 720.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.5154E+24
Elemental I (atoms)    0.0000E+00  1.6988E+18
Organic I (atoms)      0.0000E+00  2.9326E+19
Aerosols (kg)          0.0000E+00  8.9210E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 720.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.5154E+24
Elemental I (atoms)    0.0000E+00  1.6988E+18
Organic I (atoms)      0.0000E+00  2.9326E+19
Aerosols (kg)          0.0000E+00  8.9210E-04

RB Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms      Decay
Co-58                  1.7603E-06  5.5359E-14  5.7479E+11  8.4585E+12
Co-60                  2.7957E-06  2.4733E-12  2.4824E+13  1.0179E+13
Kr-85                  8.7237E+02  2.2235E-03  1.5753E+22  1.0418E+20
Rb-86                  2.6755E-05  3.2881E-13  2.3025E+12  5.8972E+14
Sr-89                  2.6518E-03  9.1277E-11  6.1762E+14  1.4309E+16
Sr-90                  5.2527E-04  3.8508E-09  2.5767E+16  1.8961E+15
Y-90                   5.2804E-04  9.7054E-13  6.4941E+12  1.2694E+14
Y-91                   4.4304E-05  1.8066E-12  1.1955E+13  1.9091E+14
Zr-95                  4.4810E-05  2.0859E-12  1.3222E+13  2.2204E+14
Nb-95                  5.7439E-05  1.4689E-12  9.3116E+12  2.2368E+14
Mo-99                  4.1279E-07  8.6068E-16  5.2355E+09  2.6628E+15
Tc-99m                 4.2321E-07  8.0486E-17  4.8959E+08  2.4157E+15
Ru-103                 4.0566E-04  1.2569E-11  7.3489E+13  2.4572E+15
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Ru-106	2.8315E-04	8.4633E-11	4.8082E+14	1.0781E+15
Rh-105	3.9395E-10	4.6673E-19	2.6769E+06	1.5721E+15
Sb-127	3.5671E-06	1.3357E-14	6.3338E+10	2.6906E+15
Te-127	1.2077E-04	4.5762E-14	2.1700E+11	2.7325E+15
Te-127m	1.1505E-04	1.2197E-11	5.7836E+13	4.8207E+14
Te-129	2.0703E-04	9.8857E-15	4.6150E+10	5.6150E+15
Te-129m	2.3942E-04	7.9475E-12	3.7101E+13	1.5780E+15
Te-131m	9.9044E-11	1.2421E-19	5.7099E+05	5.2803E+15
Te-132	2.0171E-05	6.6440E-14	3.0311E+11	4.0301E+16
I-131	1.5763E+00	1.2715E-08	5.8450E+16	1.2628E+18
I-132	2.4076E-05	2.3324E-15	1.0641E+10	2.4703E+17
I-133	1.6537E-09	1.4598E-18	6.6100E+06	8.2965E+17
Xe-133	1.7922E+03	9.5744E-06	4.3352E+19	3.2679E+21
Cs-134	8.6770E-03	6.7065E-09	3.0140E+16	6.5245E+16
Cs-136	5.4563E-04	7.4447E-12	3.2965E+13	1.9223E+16
Cs-137	7.1643E-03	8.2366E-08	3.6206E+17	5.2520E+16
Ba-140	1.2076E-03	1.6496E-11	7.0956E+13	2.1705E+16
La-140	1.4028E-03	2.5238E-12	1.0856E+13	1.5916E+15
Ce-141	7.7106E-05	2.7061E-12	1.1558E+13	5.1996E+14
Ce-143	3.8089E-11	5.7356E-20	2.4154E+05	4.5147E+14
Ce-144	1.0880E-04	3.4113E-11	1.4266E+14	4.2110E+14
Pr-143	1.5169E-05	2.2527E-13	9.4868E+11	1.9666E+14
Nd-147	3.4396E-06	4.2518E-14	1.7418E+11	8.0072E+13
Np-239	2.4264E-07	1.0459E-15	2.6354E+09	5.5197E+15
Pu-238	4.7399E-07	2.7687E-11	7.0056E+13	1.7026E+12
Pu-239	4.1832E-08	6.7301E-10	1.6958E+15	1.4923E+11
Pu-240	7.7525E-08	3.4022E-10	8.5369E+14	2.7930E+11
Pu-241	1.6643E-05	1.6157E-10	4.0373E+14	6.0195E+13
Am-241	1.3385E-08	3.8998E-12	9.7449E+12	4.0482E+10
Cm-242	2.5008E-06	7.5455E-13	1.8777E+12	1.0211E+13
Cm-244	1.8720E-07	2.3139E-12	5.7109E+12	6.7651E+11

RB Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.5797E+22	0.0000E+00	
Elemental I (atoms)	1.6955E+15	0.0000E+00	
Organic I (atoms)	5.6643E+16	0.0000E+00	
Aerosols (kg)	9.4438E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.6976E-11
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6976E-11
Total I (Ci)			1.5763E+00

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport
Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	4.4088E+18
Organic I (atoms)	9.5235E+19
Aerosols (kg)	1.7096E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.9239E+24
Elemental I (atoms)	4.1552E+18	1.4926E+17
Organic I (atoms)	9.0959E+19	2.8138E+18
Aerosols (kg)	1.6423E-03	7.4361E-05

Environment Integral Nuclide Release:

Time (h) = 720.0000	Ci	kg	Atoms	Bq
Co-58	6.4137E-04	2.0170E-11	2.0943E+14	2.3731E+07
Co-60	7.7188E-04	6.8285E-10	6.8537E+15	2.8560E+07
Kr-85	2.6160E+05	6.6677E-01	4.7239E+24	9.6790E+15
Kr-85m	4.9337E+04	5.9951E-06	4.2475E+19	1.8255E+15
Kr-87	1.0243E+04	3.6161E-07	2.5031E+18	3.7899E+14
Kr-88	6.5953E+04	5.2597E-06	3.5994E+19	2.4402E+15
Rb-86	6.5609E-02	8.0633E-10	5.6463E+15	2.4275E+09
Sr-89	1.0850E+00	3.7345E-08	2.5270E+17	4.0144E+10
Sr-90	1.4377E-01	1.0540E-06	7.0526E+18	5.3196E+09
Sr-91	9.8051E-01	2.7049E-10	1.7900E+15	3.6279E+10

Sr-92	5.5475E-01	4.4135E-11	2.8890E+14	2.0526E+10
Y-90	9.8946E-03	1.8186E-11	1.2169E+14	3.6610E+08
Y-91	1.4509E-02	5.9162E-10	3.9152E+15	5.3682E+08
Y-92	2.2931E-01	2.3831E-11	1.5599E+14	8.4844E+09
Y-93	1.1477E-02	3.4402E-12	2.2276E+13	4.2467E+08
Zr-95	1.6836E-02	7.8371E-10	4.9680E+15	6.2294E+08
Zr-97	1.3400E-02	7.0095E-12	4.3518E+13	4.9580E+08
Nb-95	1.6962E-02	4.3378E-10	2.7497E+15	6.2759E+08
Mo-99	2.0169E-01	4.2052E-10	2.5580E+15	7.4624E+09
Tc-99m	1.8431E-01	3.5051E-11	2.1322E+14	6.8194E+09
Ru-103	1.8631E-01	5.7729E-09	3.3752E+16	6.8936E+09
Ru-105	7.1925E-02	1.0700E-11	6.1368E+13	2.6612E+09
Ru-106	8.1751E-02	2.4436E-08	1.3883E+17	3.0248E+09
Rh-105	1.1915E-01	1.4117E-10	8.0965E+14	4.4087E+09
Sb-127	2.0387E-01	7.6339E-10	3.6199E+15	7.5430E+09
Sb-129	3.5267E-01	6.2714E-11	2.9277E+14	1.3049E+10
Te-127	2.0810E-01	7.8852E-11	3.7390E+14	7.6997E+09
Te-127m	3.6555E-02	3.8754E-09	1.8377E+16	1.3525E+09
Te-129	4.3292E-01	2.0672E-11	9.6504E+13	1.6018E+10
Te-129m	1.1966E-01	3.9722E-09	1.8543E+16	4.4275E+09
Te-131m	3.9935E-01	5.0082E-10	2.3023E+15	1.4776E+10
Te-132	3.0531E+00	1.0056E-08	4.5880E+16	1.1296E+11
I-131	1.0375E+02	8.3686E-07	3.8471E+18	3.8388E+12
I-132	3.0265E+01	2.9320E-09	1.3377E+16	1.1198E+12
I-133	8.0087E+01	7.0698E-08	3.2011E+17	2.9632E+12
I-134	2.5017E+01	9.3777E-10	4.2145E+15	9.2562E+11
I-135	5.1607E+01	1.4695E-08	6.5552E+16	1.9095E+12
Xe-133	8.1934E+06	4.3773E-02	1.9820E+23	3.0316E+17
Xe-135	3.7793E+05	1.4799E-04	6.6017E+20	1.3983E+16
Cs-134	7.2344E+00	5.5915E-06	2.5129E+19	2.6767E+11
Cs-136	2.1412E+00	2.9215E-08	1.2936E+17	7.9224E+10
Cs-137	5.8229E+00	6.6944E-05	2.9427E+20	2.1545E+11
Ba-139	3.5074E-01	2.1443E-11	9.2899E+13	1.2977E+10
Ba-140	1.6455E+00	2.2477E-08	9.6685E+16	6.0884E+10
La-140	1.2559E-01	2.2595E-10	9.7192E+14	4.6468E+09
La-141	7.9529E-03	1.4063E-12	6.0062E+12	2.9426E+08
La-142	3.5752E-03	2.4975E-13	1.0592E+12	1.3228E+08
Ce-141	3.9426E-02	1.3837E-09	5.9097E+15	1.4587E+09
Ce-143	3.4154E-02	5.1430E-11	2.1658E+14	1.2637E+09
Ce-144	3.1931E-02	1.0011E-08	4.1868E+16	1.1815E+09
Pr-143	1.4922E-02	2.2160E-10	9.3323E+14	5.5213E+08
Nd-147	6.0703E-03	7.5036E-11	3.0740E+14	2.2460E+08
Np-239	4.1799E-01	1.8018E-09	4.5399E+15	1.5466E+10
Pu-238	1.2911E-04	7.5415E-09	1.9082E+16	4.7770E+06
Pu-239	1.1316E-05	1.8206E-07	4.5873E+17	4.1869E+05
Pu-240	2.1179E-05	9.2944E-08	2.3322E+17	7.8362E+05
Pu-241	4.5645E-03	4.4310E-08	1.1072E+17	1.6889E+08
Am-241	3.0697E-06	8.9440E-10	2.2349E+15	1.1358E+05
Cm-242	7.7427E-04	2.3362E-10	5.8135E+14	2.8648E+07
Cm-244	5.1298E-05	6.3408E-10	1.5650E+15	1.8980E+06

Environment Transport Group Inventory:

Time (h) = 720.0000	Total Release	Release Rate/s	
Noble gases (atoms)	4.9229E+24	1.8993E+18	
Elemental I (atoms)	1.4884E+17	5.7422E+10	
Organic I (atoms)	2.8021E+18	1.0810E+12	
Aerosols (kg)	7.4358E-05	2.8688E-11	
Dose Effective (Ci) I-131 (Thyroid)			1.1878E+02
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.3097E+02
Total I (Ci)			2.9073E+02

RB to Environment Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.9239E+24
Elemental I (atoms)	4.1552E+18	1.4926E+17
Organic I (atoms)	9.0959E+19	2.8138E+18
Aerosols (kg)	1.6423E-03	7.4361E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9305E+17
Elemental I (atoms)	0.0000E+00	7.2809E+13
Organic I (atoms)	0.0000E+00	2.4010E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.0637E+17
Elemental I (atoms)	2.5868E+10	8.0003E+08
Organic I (atoms)	3.2642E+11	1.0096E+10
Aerosols (kg)	1.8169E-11	5.6192E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	5.9855E+17	0.0000E+00
Elemental I (atoms)	7.1297E+13	0.0000E+00
Organic I (atoms)	2.3630E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Kr-85	2.9201E-05	7.4428E-11	5.2732E+14	5.3042E+12
Sr-89	8.7466E-13	3.0107E-20	2.0371E+05	3.2983E+07
Sr-90	1.7325E-13	1.2701E-18	8.4988E+06	4.3532E+06
Ru-103	1.3380E-13	4.1458E-21	2.4239E+04	5.6693E+06
Ru-106	9.3392E-14	2.7915E-20	1.5859E+05	2.4768E+06
Te-127m	3.7947E-14	4.0230E-21	1.9076E+04	1.1085E+06
Te-129m	7.8970E-14	2.6214E-21	1.2237E+04	3.6451E+06
I-131	5.1992E-10	4.1938E-18	1.9279E+07	4.6581E+12
Xe-133	5.9989E-05	3.2048E-13	1.4511E+12	2.7623E+14
Cs-134	2.8620E-12	2.2120E-18	9.9412E+06	1.2474E+12
Cs-136	1.7997E-13	2.4555E-21	1.0873E+04	3.7198E+11
Cs-137	2.3631E-12	2.7167E-17	1.1942E+08	1.0039E+12
Ba-140	3.9832E-13	5.4409E-21	2.3404E+04	5.0369E+07
Ce-144	3.5887E-14	1.1252E-20	4.7055E+04	9.6758E+05
Pu-238	1.5634E-16	9.1322E-21	2.3107E+04	3.9089E+03
Pu-239	1.3798E-17	2.2198E-19	5.5934E+05	3.4258E+02
Pu-240	2.5571E-17	1.1222E-19	2.8158E+05	6.4124E+02
Pu-241	5.4897E-15	5.3291E-20	1.3316E+05	1.3821E+05

CR Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	5.2877E+14	0.0000E+00	
Elemental I (atoms)	5.5924E+05	0.0000E+00	
Organic I (atoms)	1.8683E+07	0.0000E+00	
Aerosols (kg)	3.1149E-17	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.8179E-19
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.8179E-19
Total I (Ci)			5.1993E-10

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9305E+17
Elemental I (atoms)	0.0000E+00	7.2809E+13
Organic I (atoms)	0.0000E+00	2.4010E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported

```
Noble gases (atoms)    0.0000E+00  4.0637E+17
Elemental I (atoms)    2.5868E+10  8.0003E+08
Organic I (atoms)      3.2642E+11  1.0096E+10
Aerosols (kg)          1.8169E-11  5.6192E-13

CR to  Environment - Exhaust Transport Group Inventory:

                          Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    5.9855E+17  0.0000E+00
Elemental I (atoms)    7.1297E+13  0.0000E+00
Organic I (atoms)      2.3630E+12  0.0000E+00
Aerosols (kg)          8.2694E-08  0.0000E+00

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######################################################################
                              I-131 Summary
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Time (hr)	DW I-131 (Curies)	RB I-131 (Curies)	Environment I-131 (Curies)
0.000	3.8944E+03	6.7607E-04	4.1839E-08
0.260	1.8207E+06	1.4374E+02	4.1941E+00
0.333	2.3333E+06	2.3426E+02	8.7803E+00
0.500	2.5229E+05	2.8694E+02	9.2384E+00
0.750	3.9747E+05	3.2024E+02	9.9970E+00
1.000	4.0160E+05	3.5419E+02	1.0843E+01
1.400	4.0806E+05	4.0412E+02	1.2365E+01
1.700	4.1288E+05	4.3838E+02	1.3632E+01
1.880	4.1577E+05	4.5775E+02	1.4440E+01
2.000	4.1769E+05	4.7020E+02	1.4999E+01
2.100	5.0440E+04	4.6397E+02	1.5468E+01
2.300	4.2146E+04	4.3921E+02	1.6374E+01
2.400	3.9527E+04	4.2713E+02	1.6808E+01
2.700	3.5070E+04	3.9256E+02	1.8040E+01
3.000	3.3234E+04	3.6080E+02	1.9172E+01
3.300	3.2463E+04	3.3189E+02	2.0212E+01
3.600	3.2123E+04	3.0566E+02	2.1170E+01
3.900	3.1960E+04	2.8193E+02	2.2053E+01
4.000	3.1924E+04	2.7453E+02	2.2332E+01
4.300	3.1880E+04	2.5376E+02	2.3126E+01
4.600	3.1836E+04	2.3499E+02	2.3860E+01
4.900	3.1792E+04	2.1802E+02	2.4541E+01
5.200	3.1748E+04	2.0268E+02	2.5173E+01
5.500	3.1704E+04	1.8881E+02	2.5761E+01
5.800	3.1660E+04	1.7627E+02	2.6310E+01
6.100	3.1617E+04	1.6492E+02	2.6823E+01
6.400	3.1573E+04	1.5467E+02	2.7303E+01
6.700	3.1530E+04	1.4539E+02	2.7754E+01
7.000	3.1486E+04	1.3700E+02	2.8178E+01
7.300	3.1443E+04	1.2941E+02	2.8579E+01
7.600	3.1399E+04	1.2254E+02	2.8957E+01
7.900	3.1356E+04	1.1633E+02	2.9316E+01
8.000	3.1342E+04	1.1439E+02	2.9432E+01
8.300	3.1298E+04	1.0896E+02	2.9767E+01
8.600	3.1255E+04	1.0403E+02	3.0088E+01
8.900	3.1212E+04	9.9578E+01	3.0394E+01
9.200	3.1169E+04	9.5545E+01	3.0687E+01
9.500	3.1126E+04	9.1892E+01	3.0969E+01
9.800	3.1083E+04	8.8584E+01	3.1240E+01
10.100	3.1040E+04	8.5587E+01	3.1502E+01
10.400	3.0998E+04	8.2870E+01	3.1755E+01
24.000	2.9118E+04	5.4873E+01	4.0155E+01
96.000	2.1682E+04	2.0306E+01	5.7989E+01
720.000	1.6831E+03	1.5763E+00	1.0375E+02

Time (hr)	CR I-131 (Curies)	MSL "B" Volume 1 I-131 (Curies)	MSL "C" Volume 3 I-131 (Curies)
0.000	1.4677E-10	3.5699E-04	3.5699E-04
0.260	1.3582E-02	7.8111E+01	7.8111E+01
0.333	2.7814E-02	1.2833E+02	1.2833E+02

0.500	2.2552E-02	1.6420E+02	1.6420E+02
0.750	1.8576E-02	1.9512E+02	1.9512E+02
1.000	1.5301E-02	2.2789E+02	2.2789E+02
1.400	1.1218E-02	2.8097E+02	2.8097E+02
1.700	8.8891E-03	3.2128E+02	3.2128E+02
1.880	7.7306E-03	3.4568E+02	3.4568E+02
2.000	7.0434E-03	3.6204E+02	3.6204E+02
2.100	6.5177E-03	3.6484E+02	3.6484E+02
2.300	5.5810E-03	3.6634E+02	3.6634E+02
2.400	5.1645E-03	3.6699E+02	3.6699E+02
2.700	4.0922E-03	3.6872E+02	3.6872E+02
3.000	3.2426E-03	3.7028E+02	3.7028E+02
3.300	2.5695E-03	3.7177E+02	3.7177E+02
3.600	2.0361E-03	3.7322E+02	3.7322E+02
3.900	1.6134E-03	3.7466E+02	3.7466E+02
4.000	1.4930E-03	3.7514E+02	3.7514E+02
4.300	1.1831E-03	3.7657E+02	3.7657E+02
4.600	9.3755E-04	3.7800E+02	3.7800E+02
4.900	7.4297E-04	3.7942E+02	3.7942E+02
5.200	5.8879E-04	3.8084E+02	3.8084E+02
5.500	4.6662E-04	3.8225E+02	3.8225E+02
5.800	3.6982E-04	3.8366E+02	3.8366E+02
6.100	2.9311E-04	3.8507E+02	3.8507E+02
6.400	2.3232E-04	3.8647E+02	3.8647E+02
6.700	1.8415E-04	3.8787E+02	3.8787E+02
7.000	1.4598E-04	3.8926E+02	3.8926E+02
7.300	1.1574E-04	3.9065E+02	3.9065E+02
7.600	9.1765E-05	3.9204E+02	3.9204E+02
7.900	7.2769E-05	3.9342E+02	3.9342E+02
8.000	6.7358E-05	3.9388E+02	3.9388E+02
8.300	5.3411E-05	3.9526E+02	3.9526E+02
8.600	4.2359E-05	3.9663E+02	3.9663E+02
8.900	3.3600E-05	3.9800E+02	3.9800E+02
9.200	2.6658E-05	3.9936E+02	3.9936E+02
9.500	2.1156E-05	4.0072E+02	4.0072E+02
9.800	1.6796E-05	4.0208E+02	4.0208E+02
10.100	1.3340E-05	4.0343E+02	4.0343E+02
10.400	1.0601E-05	4.0478E+02	4.0478E+02
24.000	9.7633E-08	4.6191E+02	4.6191E+02
96.000	1.8020E-08	5.0899E+02	5.0899E+02
720.000	5.1992E-10	1.7209E+02	1.7209E+02

##
Cumulative Dose Summary
##

	EAB		LPZ		CR	
Time (hr)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.260	1.1861E-01	5.8945E-03	4.6175E-02	2.2948E-03	6.1281E-01	2.7148E-02
0.333	2.4812E-01	1.2306E-02	9.6597E-02	4.7910E-03	1.6156E+00	7.1568E-02
0.500	2.6104E-01	1.3397E-02	1.0163E-01	5.2157E-03	4.4485E+00	1.9705E-01
0.750	2.8244E-01	1.6330E-02	1.0996E-01	6.3574E-03	7.9099E+00	3.5035E-01
1.000	3.0639E-01	2.2887E-02	1.1928E-01	8.9101E-03	1.0752E+01	4.7621E-01
1.400	3.4963E-01	4.5720E-02	1.3611E-01	1.7800E-02	1.4284E+01	6.3268E-01
1.700	3.8567E-01	7.5282E-02	1.5015E-01	2.9308E-02	1.6291E+01	7.2161E-01
1.880	4.0866E-01	9.8709E-02	1.5910E-01	3.8429E-02	1.7286E+01	7.6573E-01
2.000	4.2452E-01	1.1680E-01	1.6527E-01	4.5471E-02	1.7875E+01	7.9185E-01
2.100	4.3787E-01	1.3340E-01	1.7047E-01	5.1933E-02	1.8325E+01	8.1182E-01
2.300	4.6353E-01	1.7016E-01	1.8046E-01	6.6247E-02	1.9126E+01	8.4735E-01
2.400	4.7582E-01	1.9010E-01	1.8524E-01	7.4008E-02	1.9481E+01	8.6314E-01
2.700	5.1059E-01	2.5492E-01	1.9878E-01	9.9245E-02	2.0395E+01	9.0369E-01
3.000	5.4242E-01	3.2549E-01	2.1117E-01	1.2672E-01	2.1116E+01	9.3575E-01
3.300	5.7158E-01	3.9991E-01	2.2252E-01	1.5569E-01	2.1685E+01	9.6109E-01
3.600	5.9831E-01	4.7669E-01	2.3293E-01	1.8558E-01	2.2135E+01	9.8114E-01
3.900	6.2286E-01	5.5465E-01	2.4249E-01	2.1593E-01	2.2491E+01	9.9699E-01
4.000	6.3059E-01	5.8073E-01	2.4550E-01	2.2609E-01	2.2592E+01	1.0015E+00
4.300	6.5254E-01	6.5887E-01	2.4641E-01	2.2932E-01	2.2851E+01	1.0131E+00
4.600	6.7278E-01	7.3635E-01	2.4724E-01	2.3253E-01	2.3057E+01	1.0223E+00
4.900	6.9147E-01	8.1267E-01	2.4802E-01	2.3569E-01	2.3219E+01	1.0296E+00
5.200	7.0875E-01	8.8745E-01	2.4873E-01	2.3879E-01	2.3347E+01	1.0353E+00

```
   5.500 7.2478E-01 9.6042E-01 2.4940E-01 2.4181E-01 2.3448E+01 1.0399E+00
   5.800 7.3967E-01 1.0314E+00 2.5001E-01 2.4475E-01 2.3528E+01 1.0435E+00
   6.100 7.5353E-01 1.1002E+00 2.5059E-01 2.4760E-01 2.3591E+01 1.0464E+00
   6.400 7.6647E-01 1.1668E+00 2.5112E-01 2.5036E-01 2.3641E+01 1.0487E+00
   6.700 7.7857E-01 1.2311E+00 2.5162E-01 2.5302E-01 2.3680E+01 1.0505E+00
   7.000 7.8992E-01 1.2932E+00 2.5209E-01 2.5559E-01 2.3712E+01 1.0519E+00
   7.300 8.0058E-01 1.3530E+00 2.5254E-01 2.5807E-01 2.3736E+01 1.0531E+00
   7.600 8.1063E-01 1.4106E+00 2.5295E-01 2.6045E-01 2.3756E+01 1.0540E+00
   7.900 8.2012E-01 1.4660E+00 2.5335E-01 2.6275E-01 2.3771E+01 1.0547E+00
   8.000 8.2317E-01 1.4840E+00 2.5347E-01 2.6349E-01 2.3776E+01 1.0549E+00
   8.300 8.3200E-01 1.5366E+00 2.5355E-01 2.6444E-01 2.3787E+01 1.0555E+00
   8.600 8.4039E-01 1.5871E+00 2.5363E-01 2.6536E-01 2.3796E+01 1.0559E+00
   8.900 8.4839E-01 1.6358E+00 2.5371E-01 2.6624E-01 2.3803E+01 1.0563E+00
   9.200 8.5602E-01 1.6825E+00 2.5378E-01 2.6709E-01 2.3809E+01 1.0565E+00
   9.500 8.6333E-01 1.7275E+00 2.5385E-01 2.6790E-01 2.3813E+01 1.0568E+00
   9.800 8.7034E-01 1.7707E+00 2.5391E-01 2.6869E-01 2.3817E+01 1.0569E+00
  10.100 8.7708E-01 1.8123E+00 2.5398E-01 2.6944E-01 2.3819E+01 1.0571E+00
  10.400 8.8359E-01 1.8523E+00 2.5404E-01 2.7017E-01 2.3822E+01 1.0572E+00
  24.000 1.0891E+00 2.8542E+00 2.5596E-01 2.8833E-01 2.3831E+01 1.0582E+00
  96.000 1.4719E+00 3.7343E+00 2.5783E-01 2.9485E-01 2.3831E+01 1.0583E+00
 720.000 2.3844E+00 5.0232E+00 2.5907E-01 2.9748E-01 2.3831E+01 1.0584E+00

######################################################################
                        Worst Two-Hour Doses
######################################################################

EAB
   Time    Whole Body     Thyroid         TEDE
   (hr)      (rem)         (rem)          (rem)
    3.2   5.0444E-01   1.4689E-01   5.1235E-01
```

12.6 RADTRAD Output File “JAFESF _270.out”

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/11/2019  at 14:30:14
########################################################################

########################################################################
                     File information
########################################################################

Plant file           = C:\radtrad3.03\Fitz\JAFESF_270.psf
Inventory file       = c:\radtrad3.03\fitz\jafloca.nif
Release file         = c:\radtrad3.03\bwr_i.rft
Dose Conversion file = c:\radtrad3.03\defaults\fgr11&12.inp




    #####    ####   #####    #  #     #  #####   #     #  #####
    #    #  #       #        #  ##    #  #    #  #     #    #
    #    #  #       #        #  # #   #  #    #  #     #    #
    #####    ####   ####     #  #  #  #  #####   #     #    #
    #            #  #        #  #   # #  #       #     #    #
    #            #  #        #  #    ##  #       #     #    #
    #        ####   #        #  #     #  #        ####     #


Radtrad 3.03 4/15/2001
Post-LOCA ESF Leakage - CAVEX Core Inventory
Nuclide Inventory File:
c:\radtrad3.03\fitz\jafloca.nif
Plant Power Level:
 2.5867E+03
Compartments:
  4
Compartment 1:
Pool
  3
 1.0600E+05
  0
  0
  0
  0
  0
Compartment 2:
RB
  3
 1.1850E+06
  0
  0
  0
  0
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
CR
  1
 1.0100E+05
  0
  0
  0
```

```
  0
  0
Pathways:
  5
Pathway 1:
CR Filtered Intake
  3
  4
  2
Pathway 2:
CR Unfiltered Inleakage
  3
  4
  2
Pathway 3:
CR Exhaust to Environment
  4
  3
  2
Pathway 4:
RB to Environment
  2
  3
  2
Pathway 5:
ESF leakage to RB
  1
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\radtrad3.03\defaults\fgr11&12.inp
c:\radtrad3.03\bwr_i.rft
  0.0000E+00
  1
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
```

```
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Pathways:
  5
Pathway 1:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+02   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   4.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   1.0000E+02   1.0000E+02   1.0000E+02
  5.0000E-01   1.3000E+03   1.0000E+02   1.0000E+02   1.0000E+02
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
```

```
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   6.6000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  3.3330E-01   6.6000E+03   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  2
  0.0000E+00   1.3370E+00   0.0000E+00   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
EAB
  3
  1
  3
  0.0000E+00   5.2400E-05
  1.0000E+00   5.2400E-05
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
LPZ
  3
  1
  6
  0.0000E+00   2.0400E-05
  1.0000E+00   2.1700E-06
  8.0000E+00   9.5300E-07
  2.4000E+01   3.9000E-07
  9.6000E+01   1.0800E-07
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
CR
  4
  0
  1
  2
```

```
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  7
  0.0000E+00   3.5200E-03
  2.7780E-01   3.5200E-03
  3.3300E-01   9.2600E-07
  8.0000E+00   6.7500E-07
  2.4000E+01   3.3900E-07
  9.6000E+01   1.2600E-07
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   1.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   5.0000E-01
  8.0000E+00   1.0000E+00
  2.4000E+01   2.0000E+00
  9.6000E+01   5.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\radtrad3.o404
  1
  1
  1
  0
  0
End of Scenario File

########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/11/2019  at 14:30:14
########################################################################

########################################################################
                     Plant Description
########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.5867E+03 MWth

Number of compartments    =   4

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: Pool
Compartment volume =   1.0600E+05 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  1
   Exit Pathway Number    5: ESF leakage to RB

Compartment number  2
Name: RB
Compartment volume =   1.1850E+06 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  2
   Inlet Pathway Number   5: ESF leakage to RB
   Exit Pathway Number    4: RB to Environment

Compartment number  3
Name: Environment
Compartment type is Environment
```

```
Pathways into and out of compartment  3
   Inlet Pathway Number   3: CR Exhaust to Environment
   Inlet Pathway Number   4: RB to Environment
   Exit Pathway Number    1: CR Filtered Intake
   Exit Pathway Number    2: CR Unfiltered Inleakage

Compartment number  4
Name: CR
Compartment volume =   1.0100E+05 (Cubic feet)
Compartment type is Control Room
Pathways into and out of compartment  4
   Inlet Pathway Number   1: CR Filtered Intake
   Inlet Pathway Number   2: CR Unfiltered Inleakage
   Exit Pathway Number    3: CR Exhaust to Environment

Total number of pathways =   5
```

```
######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/11/2019  at 14:30:14
######################################################################

######################################################################
                    Scenario Description
######################################################################

Radioactive Decay is enabled
Calculation of Daughters is enabled

Release Fractions and Timings
               GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
            0.500000 hr    1.5000 hrs      0.0000 hrs          (gm)
NOBLES      0.0000E+00     0.0000E+00      0.0000E+00        0.000E+00
IODINE      5.0000E-02     2.5000E-01      0.0000E+00        2.249E+02
CESIUM      0.0000E+00     0.0000E+00      0.0000E+00        0.000E+00
TELLURIUM   0.0000E+00     0.0000E+00      0.0000E+00        0.000E+00
STRONTIUM   0.0000E+00     0.0000E+00      0.0000E+00        0.000E+00
BARIUM      0.0000E+00     0.0000E+00      0.0000E+00        0.000E+00
RUTHENIUM   0.0000E+00     0.0000E+00      0.0000E+00        0.000E+00
CERIUM      0.0000E+00     0.0000E+00      0.0000E+00        0.000E+00
LANTHANUM   0.0000E+00     0.0000E+00      0.0000E+00        0.000E+00

Inventory Power =      2587. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
               (Ci/MWt)      (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 I-131     2   2.710E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.960E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.640E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.430E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
 I-135     2   5.330E+04  2.380E+04   8.294E-14   8.460E-09   3.320E-10

Nuclide    Daughter  Fraction   Daughter  Fraction   Daughter  Fraction
 Kr-85m    Kr-85      0.21       none      0.00       none      0.00
 Kr-87     Rb-87      1.00       none      0.00       none      0.00
 Kr-88     Rb-88      1.00       none      0.00       none      0.00
 Sr-90     Y-90       1.00       none      0.00       none      0.00
 Sr-91     Y-91m      0.58       Y-91      0.42       none      0.00
 Sr-92     Y-92       1.00       none      0.00       none      0.00
 Y-93      Zr-93      1.00       none      0.00       none      0.00
 Zr-95     Nb-95m     0.01       Nb-95     0.99       none      0.00
 Zr-97     Nb-97m     0.95       Nb-97     0.05       none      0.00
 Mo-99     Tc-99m     0.88       Tc-99     0.12       none      0.00
 Tc-99m    Tc-99      1.00       none      0.00       none      0.00
 Ru-103    Rh-103m    1.00       none      0.00       none      0.00
 Ru-105    Rh-105     1.00       none      0.00       none      0.00
 Ru-106    Rh-106     1.00       none      0.00       none      0.00
 Sb-127    Te-127m    0.18       Te-127    0.82       none      0.00
 Sb-129    Te-129m    0.22       Te-129    0.77       none      0.00
 Te-127m   Te-127     0.98       none      0.00       none      0.00
 Te-129    I-129      1.00       none      0.00       none      0.00
 Te-129m   Te-129     0.65       I-129     0.35       none      0.00
 Te-131m   Te-131     0.22       I-131     0.78       none      0.00
 Te-132    I-132      1.00       none      0.00       none      0.00
 I-131     Xe-131m    0.01       none      0.00       none      0.00
 I-133     Xe-133m    0.03       Xe-133    0.97       none      0.00
 I-135     Xe-135m    0.15       Xe-135    0.85       none      0.00
 Xe-135    Cs-135     1.00       none      0.00       none      0.00
 Cs-137    Ba-137m    0.95       none      0.00       none      0.00
 Ba-140    La-140     1.00       none      0.00       none      0.00
 La-141    Ce-141     1.00       none      0.00       none      0.00
 Ce-143    Pr-143     1.00       none      0.00       none      0.00
 Ce-144    Pr-144m    0.02       Pr-144    0.98       none      0.00
 Nd-147    Pm-147     1.00       none      0.00       none      0.00
 Np-239    Pu-239     1.00       none      0.00       none      0.00
 Pu-238    U-234      1.00       none      0.00       none      0.00
 Pu-239    U-235      1.00       none      0.00       none      0.00
 Pu-240    U-236      1.00       none      0.00       none      0.00
 Pu-241    U-237      0.00       Am-241    1.00       none      0.00
```

Am-241	Np-237	1.00	none	0.00	none	0.00
Cm-242	Pu-238	1.00	none	0.00	none	0.00
Cm-244	Pu-240	1.00	none	0.00	none	0.00

Iodine fractions
Aerosol = 0.0000E+00
Elemental = 9.7000E-01
Organic = 3.0000E-02

COMPARTMENT DATA

Compartment number 1: Pool

Compartment number 2: RB

Compartment number 3: Environment

Compartment number 4: CR

PATHWAY DATA

Pathway number 1: CR Filtered Intake

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	9.0000E+02	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 2: CR Unfiltered Inleakage

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	4.0000E+02	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 3: CR Exhaust to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	1.0000E+02	1.0000E+02	1.0000E+02
5.0000E-01	1.3000E+03	1.0000E+02	1.0000E+02	1.0000E+02
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 4: RB to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	6.6000E+03	0.0000E+00	0.0000E+00	0.0000E+00
3.3330E-01	6.6000E+03	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 5: ESF leakage to RB

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	1.3370E+00	0.0000E+00	9.0000E+01	9.0000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

LOCATION DATA
Location EAB is in compartment 3

```
     Location X/Q Data
      Time (hr)          X/Q (s * m^-3)
       0.0000E+00           5.2400E-05
       1.0000E+00           5.2400E-05
       7.2000E+02           0.0000E+00

     Location Breathing Rate Data
      Time (hr)          Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00
     Location LPZ     is in compartment   3

     Location X/Q Data
      Time (hr)          X/Q (s * m^-3)
       0.0000E+00           2.0400E-05
       1.0000E+00           2.1700E-06
       8.0000E+00           9.5300E-07
       2.4000E+01           3.9000E-07
       9.6000E+01           1.0800E-07
       7.2000E+02           0.0000E+00

     Location Breathing Rate Data
      Time (hr)          Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       8.0000E+00                 1.8000E-04
       2.4000E+01                 2.3000E-04
       7.2000E+02                 0.0000E+00
     Location CR      is in compartment   4

     Location X/Q Data
      Time (hr)          X/Q (s * m^-3)
       0.0000E+00           3.5200E-03
       2.7780E-01           3.5200E-03
       3.3300E-01           9.2600E-07
       8.0000E+00           6.7500E-07
       2.4000E+01           3.3900E-07
       9.6000E+01           1.2600E-07
       7.2000E+02           0.0000E+00

     Location Breathing Rate Data
      Time (hr)          Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 3.5000E-04

     Location Occupancy Factor Data
      Time (hr)          Occupancy Factor
       0.0000E+00            1.0000E+00
       2.4000E+01            6.0000E-01
       9.6000E+01            4.0000E-01
       7.2000E+02            0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time             Time step
      0.0000E+00       1.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       5.0000E-01
      8.0000E+00       1.0000E+00
      2.4000E+01       2.0000E+00
      9.6000E+01       5.0000E+00
      7.2000E+02       0.0000E+00
```

```
######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/11/2019  at 14:30:14
######################################################################




     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


######################################################################
           Dose, Detailed model and Detailed Inventory Output
######################################################################

EAB Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3399E-04  2.9699E-02  1.0723E-03
Accumulated dose (rem)  1.3399E-04  2.9699E-02  1.0723E-03

LPZ Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.2166E-05  1.1562E-02  4.1744E-04
Accumulated dose (rem)  5.2166E-05  1.1562E-02  4.1744E-04

CR Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6268E-05  1.9338E-01  6.1448E-03
Accumulated dose (rem)  3.6268E-05  1.9338E-01  6.1448E-03

RB Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
I-131                  2.8368E+01  2.2882E-07  1.0519E+18  4.4264E+14
I-132                  3.8747E+01  3.7538E-09  1.7126E+16  6.1519E+14
I-133                  5.8453E+01  5.1600E-08  2.3364E+17  9.1439E+14
I-134                  5.1774E+01  1.9408E-09  8.7222E+15  8.6505E+14
I-135                  5.3939E+01  1.5359E-08  6.8514E+16  8.4895E+14
Xe-133                 3.8713E-01  2.0682E-09  9.3646E+15  4.5356E+12
Xe-135                 4.3371E+00  1.6983E-09  7.5760E+15  5.1060E+13

RB Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    1.6941E+16  0.0000E+00
Elemental I (atoms)    1.3385E+18  0.0000E+00
Organic I (atoms)      4.1397E+16  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.1903E-09
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.5127E-09
Total I (Ci)                                   2.3128E+02

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.7393E+14
Elemental I (atoms)    0.0000E+00  5.0249E+16
Organic I (atoms)      0.0000E+00  1.5541E+15
Aerosols (kg)          0.0000E+00  0.0000E+00

ESF leakage to RB Transport Group Inventory:

                         Pathway
```

```
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.5862E+16
Elemental I (atoms)    1.2531E+19  1.3923E+18
Organic I (atoms)      3.8755E+17  4.3062E+16
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
I-131                  3.3681E-03  2.7167E-11  1.2489E+14  4.0599E+10
I-132                  4.5642E-03  4.4218E-13  2.0173E+12  5.5887E+10
I-133                  6.9401E-03  6.1264E-12  2.7740E+13  8.3830E+10
I-134                  6.1471E-03  2.3043E-13  1.0356E+12  7.8312E+10
I-135                  6.4041E-03  1.8236E-12  8.1346E+12  7.7740E+10
Xe-133                 3.8033E-05  2.0319E-13  9.2002E+11  3.6527E+08
Xe-135                 4.2610E-04  1.6685E-13  7.4431E+11  4.1090E+09

CR Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    1.6643E+12  0.0000E+00
Elemental I (atoms)    1.5890E+14  0.0000E+00
Organic I (atoms)      4.9145E+12  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.6580E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    2.1068E-12
Total I (Ci)                                    2.7424E-02

CR Filtered Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.6628E+12
Elemental I (atoms)    0.0000E+00  1.7630E+14
Organic I (atoms)      0.0000E+00  5.4526E+12
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    1.4140E+11  0.0000E+00
Elemental I (atoms)    1.7073E+13  0.0000E+00
Organic I (atoms)      5.2802E+11  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

EAB Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.8591E-06  2.0699E-03  7.5193E-05
Accumulated dose (rem)  1.4385E-04  3.1769E-02  1.1474E-03

LPZ Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.8383E-06  8.0585E-04  2.9274E-05
Accumulated dose (rem)  5.6004E-05  1.2368E-02  4.4672E-04

CR Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.0176E-05  3.3907E-01  1.0762E-02
Accumulated dose (rem)  9.6445E-05  5.3245E-01  1.6907E-02
```

RB Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
I-131	6.2654E+01	5.0538E-07	2.3233E+18	1.4523E+15
I-132	8.2832E+01	8.0247E-09	3.6611E+16	1.9698E+15
I-133	1.2846E+02	1.1340E-07	5.1346E+17	2.9889E+15
I-134	1.0029E+02	3.7593E-09	1.6895E+16	2.5775E+15
I-135	1.1713E+02	3.3354E-08	1.4879E+17	2.7504E+15
Xe-133	1.2819E+00	6.8486E-09	3.1010E+16	2.2286E+13
Xe-135	1.4192E+01	5.5575E-09	2.4791E+16	2.4853E+14

RB Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	5.5801E+16	0.0000E+00	
Elemental I (atoms)	2.9478E+18	0.0000E+00	
Organic I (atoms)	9.1170E+16	0.0000E+00	
Aerosols (kg)	0.0000E+00	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.6232E-09
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.3209E-09
Total I (Ci)			4.9137E+02

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.3582E+15
Elemental I (atoms)	1.1315E+17	5.3748E+16
Organic I (atoms)	3.4996E+15	1.6623E+15
Aerosols (kg)	0.0000E+00	0.0000E+00

ESF leakage to RB Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.3193E+16
Elemental I (atoms)	2.8135E+19	3.1261E+18
Organic I (atoms)	8.7016E+17	9.6684E+16
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
I-131	2.7308E-03	2.2027E-11	1.0126E+14	1.0765E+11
I-132	3.5215E-03	3.4116E-13	1.5564E+12	1.4461E+11
I-133	5.5993E-03	4.9428E-12	2.2381E+13	2.2166E+11
I-134	4.3713E-03	1.6386E-13	7.3641E+11	1.9326E+11
I-135	5.1056E-03	1.4538E-12	6.4852E+12	2.0419E+11
Xe-133	3.5861E-05	1.9158E-13	8.6747E+11	1.1783E+09
Xe-135	3.9704E-04	1.5547E-13	6.9355E+11	1.3164E+10

CR Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	1.5610E+12	0.0000E+00	
Elemental I (atoms)	1.2845E+14	0.0000E+00	
Organic I (atoms)	3.9726E+12	0.0000E+00	
Aerosols (kg)	0.0000E+00	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3413E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6971E-12
Total I (Ci)			2.1328E-02

CR Filtered Intake Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Unfiltered Inleakage Transport Group Inventory:

Pathway

```
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.6645E+12
Elemental I (atoms)    0.0000E+00  1.7630E+14
Organic I (atoms)      0.0000E+00  5.4527E+12
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    4.7776E+11  0.0000E+00
Elemental I (atoms)    4.7012E+13  0.0000E+00
Organic I (atoms)      1.4540E+12  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

EAB Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0115E-04  2.1610E-02  7.8213E-04
Accumulated dose (rem)  2.4500E-04  5.3379E-02  1.9296E-03

LPZ Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.9379E-05  8.4132E-03  3.0449E-04
Accumulated dose (rem)  9.5383E-05  2.0781E-02  7.5121E-04

CR Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1960E-04  7.5441E-01  2.3893E-02
Accumulated dose (rem)  2.1604E-04  1.2869E+00  4.0800E-02

RB Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg         Atoms      Decay
I-131                  2.7885E+02  2.2493E-06  1.0340E+19  1.1951E+16
I-132                  3.3981E+02  3.2920E-08  1.5019E+17  1.5179E+16
I-133                  5.6323E+02  4.9719E-07  2.2513E+18  2.4317E+16
I-134                  3.0110E+02  1.1287E-08  5.0725E+16  1.5843E+16
I-135                  4.9552E+02  1.4110E-07  6.2942E+17  2.1776E+16
Xe-133                 1.0545E+01  5.6336E-08  2.5508E+17  3.5030E+14
Xe-135                 1.1266E+02  4.4117E-08  1.9680E+17  3.7963E+15

RB Transport Group Inventory:
Time (h) =   1.0000    Atmosphere     Sump
Noble gases (atoms)    4.5188E+17  0.0000E+00
Elemental I (atoms)    1.3019E+19  0.0000E+00
Organic I (atoms)      4.0265E+17  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.1601E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.4543E-08
Total I (Ci)                                    1.9785E+03

RB to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.7213E+16
Elemental I (atoms)    1.2931E+18  9.0242E+16
Organic I (atoms)      3.9993E+16  2.7910E+15
Aerosols (kg)          0.0000E+00  0.0000E+00

ESF leakage to RB Transport Group Inventory:

                        Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.5115E+17
Elemental I (atoms)    1.3040E+20  1.4489E+19
Organic I (atoms)      4.0330E+18  4.4811E+17
Aerosols (kg)          0.0000E+00  0.0000E+00
```

CR Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
I-131	1.8529E-03	1.4946E-11	6.8706E+13	2.5782E+11
I-132	2.0588E-03	1.9946E-13	9.0997E+11	3.2539E+11
I-133	3.7430E-03	3.3042E-12	1.4961E+13	5.2743E+11
I-134	2.0010E-03	7.5010E-14	3.3710E+11	3.9450E+11
I-135	3.2931E-03	9.3771E-13	4.1830E+12	4.7841E+11
Xe-133	3.4777E-05	1.8579E-13	8.4124E+11	3.5336E+09
Xe-135	3.7161E-04	1.4552E-13	6.4912E+11	3.8787E+10

CR Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.4904E+12	0.0000E+00	
Elemental I (atoms)	8.6424E+13	0.0000E+00	
Organic I (atoms)	2.6729E+12	0.0000E+00	
Aerosols (kg)	0.0000E+00	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.0403E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1314E-12
Total I (Ci)			1.2949E-02

CR Filtered Intake Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3709E+10
Elemental I (atoms)	1.3923E+10	4.3061E+08
Organic I (atoms)	4.3061E+08	1.3318E+07
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Unfiltered Inleakage Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6706E+12
Elemental I (atoms)	0.0000E+00	1.7631E+14
Organic I (atoms)	0.0000E+00	5.4529E+12
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	1.0699E+12	0.0000E+00
Elemental I (atoms)	8.7963E+13	0.0000E+00
Organic I (atoms)	2.7205E+12	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

EAB Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.9915E-04	1.8928E-01	6.8484E-03
Accumulated dose (rem)	1.1442E-03	2.4266E-01	8.7780E-03

LPZ Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.7236E-05	7.8386E-03	2.8361E-04
Accumulated dose (rem)	1.3262E-04	2.8620E-02	1.0348E-03

CR Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.1055E-04	8.5275E-01	2.6912E-02
Accumulated dose (rem)	3.2659E-04	2.1396E+00	6.7713E-02

RB Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
I-131	1.1897E+03	9.5963E-06	4.4114E+19	1.0962E+17
I-132	1.2137E+03	1.1758E-07	5.3643E+17	1.2288E+17
I-133	2.3320E+03	2.0586E-06	9.3213E+18	2.1804E+17

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I-134                  5.8459E+02  2.1914E-08  9.8484E+16  8.2847E+16
I-135                  1.9101E+03  5.4389E-07  2.4262E+18  1.8503E+17
Xe-133                 8.7719E+01  4.6863E-07  2.1219E+18  6.1523E+15
Xe-135                 8.7442E+02  3.4241E-07  1.5274E+18  6.3058E+16

RB Transport Group Inventory:
Time (h) =   2.0000    Atmosphere     Sump
Noble gases (atoms)    3.6494E+18  0.0000E+00
Elemental I (atoms)    5.4802E+19  0.0000E+00
Organic I (atoms)      1.6949E+18  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         4.8904E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   6.0367E-08
Total I (Ci)                                   7.2301E+03

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.0135E+17
Elemental I (atoms)    1.1614E+19  4.0944E+17
Organic I (atoms)      3.5919E+17  1.2663E+16
Aerosols (kg)          0.0000E+00  0.0000E+00

ESF leakage to RB Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.9511E+18
Elemental I (atoms)    6.0770E+20  6.7522E+19
Organic I (atoms)      1.8795E+19  2.0883E+18
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg         Atoms      Decay
I-131                  8.5386E-04  6.8874E-12  3.1662E+13  4.2301E+11
I-132                  7.0457E-04  6.8259E-14  3.1141E+11  4.8715E+11
I-133                  1.6744E-03  1.4781E-12  6.6926E+12  8.5685E+11
I-134                  4.1973E-04  1.5734E-14  7.0710E+10  5.2414E+11
I-135                  1.3714E-03  3.9050E-13  1.7420E+12  7.5942E+11
Xe-133                 3.0985E-05  1.6554E-13  7.4954E+11  7.6396E+09
Xe-135                 3.0874E-04  1.2090E-13  5.3931E+11  8.1187E+10

CR Transport Group Inventory:
Time (h) =   2.0000    Atmosphere     Sump
Noble gases (atoms)    1.2888E+12  0.0000E+00
Elemental I (atoms)    3.9264E+13  0.0000E+00
Organic I (atoms)      1.2143E+12  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         4.1150E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   5.0631E-13
Total I (Ci)                                   5.0239E-03

CR Filtered Intake Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.3559E+11
Elemental I (atoms)    1.3570E+11  4.1970E+09
Organic I (atoms)      4.1970E+09  1.2980E+08
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.7693E+12
Elemental I (atoms)    0.0000E+00  1.7637E+14
Organic I (atoms)      0.0000E+00  5.4546E+12
Aerosols (kg)          0.0000E+00  0.0000E+00
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CR Exhaust to Environment Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.1038E+12	0.0000E+00
Elemental I (atoms)	1.3415E+14	0.0000E+00
Organic I (atoms)	4.1489E+12	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

EAB Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.1512E-02	5.0109E+00	1.9779E-01
Accumulated dose (rem)	4.2656E-02	5.2536E+00	2.0656E-01

LPZ Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.7191E-03	2.0751E-01	8.1908E-03
Accumulated dose (rem)	1.8517E-03	2.3613E-01	9.2256E-03

CR Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.0746E-05	7.2780E-01	2.2848E-02
Accumulated dose (rem)	4.0734E-04	2.8674E+00	9.0561E-02

RB Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
I-131	4.1489E+03	3.3466E-05	1.5384E+20	2.6527E+18
I-132	7.7015E+02	7.4612E-08	3.4040E+17	1.2491E+18
I-133	6.8029E+03	6.0053E-06	2.7192E+19	4.7247E+18
I-134	1.8129E+01	6.7956E-10	3.0541E+15	2.6852E+17
I-135	3.6273E+03	1.0329E-06	4.6075E+18	3.1101E+18
Xe-133	2.0060E+03	1.0717E-05	4.8524E+19	7.6503E+17
Xe-135	1.3068E+04	5.1172E-06	2.2827E+19	5.7701E+18

RB Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	7.1351E+19	0.0000E+00	
Elemental I (atoms)	1.8041E+20	0.0000E+00	
Organic I (atoms)	5.5796E+18	0.0000E+00	
Aerosols (kg)	0.0000E+00	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.6065E-07
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.8766E-07
Total I (Ci)			1.5367E+04

RB to Environment Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.0657E+19
Elemental I (atoms)	2.8473E+20	8.8563E+18
Organic I (atoms)	8.8061E+18	2.7391E+17
Aerosols (kg)	0.0000E+00	0.0000E+00

ESF leakage to RB Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4132E+20
Elemental I (atoms)	4.3707E+21	4.8564E+20
Organic I (atoms)	1.3518E+20	1.5020E+19
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
I-131	1.7354E-05	1.3998E-13	6.4349E+11	5.6723E+11
I-132	2.8323E-06	2.7439E-16	1.2518E+09	5.7284E+11
I-133	2.8462E-05	2.5125E-14	1.1377E+11	1.1290E+12

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I-134                  7.5847E-08  2.8432E-18  1.2778E+07  5.5875E+11
I-135                  1.5176E-05  4.3214E-15  1.9277E+10  9.6372E+11
Xe-133                 3.7433E-04  1.9998E-12  9.0551E+12  1.3535E+11
Xe-135                 2.4393E-03  9.5519E-13  4.2610E+12  1.0357E+12

CR Transport Group Inventory:
Time (h) =   8.0000    Atmosphere     Sump
Noble gases (atoms)    1.3316E+13  0.0000E+00
Elemental I (atoms)    7.5447E+11  0.0000E+00
Organic I (atoms)      2.3334E+10  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.8838E-15
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.2055E-15
Total I (Ci)                                   6.3900E-05

CR Filtered Intake Transport Group Inventory:

                         Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.7790E+13
Elemental I (atoms)    3.3584E+12  1.0387E+11
Organic I (atoms)      1.0387E+11  3.2124E+09
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.4016E+13
Elemental I (atoms)    0.0000E+00  1.7784E+14
Organic I (atoms)      0.0000E+00  5.5003E+12
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    2.9233E+13  0.0000E+00
Elemental I (atoms)    1.7351E+14  0.0000E+00
Organic I (atoms)      5.3664E+12  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

EAB Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2686E-01  1.7154E+01  7.5708E-01
Accumulated dose (rem)  2.6952E-01  2.2407E+01  9.6365E-01

LPZ Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.1260E-03  1.6044E-01  9.0853E-03
Accumulated dose (rem)  5.9777E-03  3.9657E-01  1.8311E-02

CR Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0766E-04  7.9942E-02  2.5797E-03
Accumulated dose (rem)  5.1500E-04  2.9474E+00  9.3141E-02

RB Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms      Decay
I-131                  4.3041E+03  3.4718E-05  1.5960E+20  1.1979E+19
I-132                  6.8347E+00  6.6214E-10  3.0208E+15  1.6067E+18
I-133                  4.3858E+03  3.8716E-06  1.7530E+19  1.6891E+19
I-134                  6.3855E-05  2.3937E-15  1.0757E+10  2.7168E+17
I-135                  7.4445E+02  2.1198E-07  9.4562E+17  7.1403E+18
Xe-133                 6.7270E+03  3.5938E-05  1.6273E+20  1.0756E+19
Xe-135                 1.4214E+04  5.5658E-06  2.4828E+19  4.1053E+19

RB Transport Group Inventory:
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Time (h) =  24.0000    Atmosphere     Sump
Noble gases (atoms)    1.8755E+20  0.0000E+00
Elemental I (atoms)    1.7274E+20  0.0000E+00
Organic I (atoms)      5.3424E+18  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.5067E-07
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.6506E-07
Total I (Ci)                                   9.4412E+03

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.2240E+20
Elemental I (atoms)    1.2305E+21  3.8107E+19
Organic I (atoms)      3.8057E+19  1.1786E+18
Aerosols (kg)          0.0000E+00  0.0000E+00

ESF leakage to RB Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.0393E+21
Elemental I (atoms)    1.3303E+22  1.4781E+21
Organic I (atoms)      4.1143E+20  4.5715E+19
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms      Decay
I-131                  7.6051E-06  6.1344E-14  2.8200E+11  5.8523E+11
I-132                  1.2076E-08  1.1699E-18  5.3375E+06  5.7364E+11
I-133                  7.7493E-06  6.8408E-15  3.0974E+10  1.1529E+12
I-135                  1.3154E-06  3.7456E-16  1.6708E+09  9.7204E+11
Xe-133                 1.1438E-03  6.1105E-12  2.7668E+13  1.7874E+12
Xe-135                 2.4150E-03  9.4569E-13  4.2186E+12  6.8234E+12

CR Transport Group Inventory:
Time (h) =  24.0000    Atmosphere     Sump
Noble gases (atoms)    3.1887E+13  0.0000E+00
Elemental I (atoms)    3.0521E+11  0.0000E+00
Organic I (atoms)      9.4395E+09  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         3.1234E-15
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.4218E-15
Total I (Ci)                                   1.6682E-05

CR Filtered Intake Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.4331E+14
Elemental I (atoms)    1.1493E+13  3.5546E+11
Organic I (atoms)      3.5546E+11  1.0994E+10
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.0980E+14
Elemental I (atoms)    0.0000E+00  1.8157E+14
Organic I (atoms)      0.0000E+00  5.6156E+12
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    3.1452E+14  0.0000E+00
Elemental I (atoms)    1.7789E+14  0.0000E+00
Organic I (atoms)      5.5018E+12  0.0000E+00
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Aerosols (kg)          0.0000E+00  0.0000E+00

EAB Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.8683E-01  5.6972E+01  2.0299E+00
Accumulated dose (rem)  5.5635E-01  7.9379E+01  2.9936E+00

LPZ Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1348E-03  2.7865E-01  1.0660E-02
Accumulated dose (rem)  8.1125E-03  6.7522E-01  2.8971E-02

CR Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.6024E-05  7.4422E-02  2.3233E-03
Accumulated dose (rem)  5.6103E-04  3.0218E+00  9.5464E-02

RB Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms      Decay
I-131                  3.1485E+03  2.5397E-05  1.1675E+20  4.7423E+19
I-132                  2.4419E-09  2.3657E-19  1.0793E+06  1.6097E+18
I-133                  3.7719E+02  3.3297E-07  1.5077E+18  3.2559E+19
I-135                  3.7101E-01  1.0565E-10  4.7127E+14  8.0787E+18
Xe-133                 9.3871E+03  5.0150E-05  2.2707E+20  1.0141E+20
Xe-135                 1.2125E+02  4.7478E-08  2.1179E+17  7.4716E+19

RB Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    2.2729E+20  0.0000E+00
Elemental I (atoms)    1.1471E+20  0.0000E+00
Organic I (atoms)      3.5477E+18  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          9.5702E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    9.6837E-08
Total I (Ci)                                    3.5261E+03

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.4693E+21
Elemental I (atoms)    4.4930E+21  1.3901E+20
Organic I (atoms)      1.3896E+20  4.2993E+18
Aerosols (kg)          0.0000E+00  0.0000E+00

ESF leakage to RB Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.8341E+21
Elemental I (atoms)    4.3506E+22  4.8340E+21
Organic I (atoms)      1.3455E+21  1.4950E+20
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms      Decay
I-131                  2.7950E-06  2.2545E-14  1.0364E+11  6.1712E+11
I-133                  3.3484E-07  2.9558E-16  1.3384E+09  1.1672E+12
I-135                  3.2935E-10  9.3783E-20  4.1835E+05  9.7294E+11
Xe-133                 8.4292E-04  4.5032E-12  2.0390E+13  9.9142E+12
Xe-135                 1.0889E-05  4.2639E-15  1.9021E+10  9.9015E+12

CR Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    2.0409E+13  0.0000E+00
Elemental I (atoms)    1.0183E+11  0.0000E+00
Organic I (atoms)      3.1494E+09  0.0000E+00
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Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          9.9676E-16
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.0086E-15
Total I (Ci)                                    3.1302E-06

CR Filtered Intake Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.0564E+15
Elemental I (atoms)    2.5586E+13  7.9133E+11
Organic I (atoms)      7.9133E+11  2.4474E+10
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.7118E+14
Elemental I (atoms)    0.0000E+00  1.8803E+14
Organic I (atoms)      0.0000E+00  5.8153E+12
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    1.4891E+15  0.0000E+00
Elemental I (atoms)    1.8494E+14  0.0000E+00
Organic I (atoms)      5.7199E+12  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

EAB Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8500E-01  1.3490E+02  4.2927E+00
Accumulated dose (rem)  7.4135E-01  2.1428E+02  7.2863E+00

LPZ Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.8129E-04  1.8270E-01  5.9448E-03
Accumulated dose (rem)  8.4938E-03  8.5793E-01  3.4916E-02

CR Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.8910E-06  4.3120E-02  1.3200E-03
Accumulated dose (rem)  5.6792E-04  3.0649E+00  9.6784E-02

RB Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms      Decay
I-131                  2.0871E+02  1.6835E-06  7.7390E+18  1.3743E+20
I-133                  2.1907E-07  1.9338E-16  8.7562E+08  3.4033E+19
Xe-133                 2.0444E+02  1.0922E-06  4.9454E+18  3.1048E+20

RB Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    4.9454E+18  0.0000E+00
Elemental I (atoms)    7.5068E+18  0.0000E+00
Organic I (atoms)      2.3217E+17  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          6.2198E-09
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    6.2198E-09
Total I (Ci)                                    2.0871E+02

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.9196E+22
```

```
Elemental I (atoms)    1.2403E+22  3.8364E+20
Organic I (atoms)      3.8359E+20  1.1865E+19
Aerosols (kg)          0.0000E+00  0.0000E+00

ESF leakage to RB Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.9546E+22
Elemental I (atoms)    1.1673E+23  1.2970E+22
Organic I (atoms)      3.6102E+21  4.0113E+20
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms      Decay
I-131                  6.8862E-08  5.5545E-16  2.5535E+09  6.4702E+11
Xe-133                 6.8454E-06  3.6571E-14  1.6559E+11  1.6971E+13

CR Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    1.6559E+11  0.0000E+00
Elemental I (atoms)    2.4769E+09  0.0000E+00
Organic I (atoms)      7.6604E+07  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.4078E-17
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.4078E-17
Total I (Ci)                                   6.8862E-08

CR Filtered Intake Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.7375E+15
Elemental I (atoms)    3.8286E+13  1.1841E+12
Organic I (atoms)      1.1841E+12  3.6622E+10
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.7389E+14
Elemental I (atoms)    0.0000E+00  1.9385E+14
Organic I (atoms)      0.0000E+00  5.9953E+12
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    2.4860E+15  0.0000E+00
Elemental I (atoms)    1.9122E+14  0.0000E+00
Organic I (atoms)      5.9141E+12  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

    928

####################################################################
                             I-131 Summary
####################################################################

                  Pool                    RB                Environment
Time (hr)    I-131 (Curies)         I-131 (Curies)       I-131 (Curies)
   0.000       3.8944E+03             8.1863E-05            5.0662E-09
   0.260       1.8208E+06             1.7406E+01            5.0786E-01
   0.333       2.3335E+06             2.8368E+01            1.0632E+00
   0.500       3.4985E+06             6.2654E+01            1.1375E+00
   0.750       6.4084E+06             1.4783E+02            1.3913E+00
   1.000       9.3129E+06             2.7885E+02            1.9168E+00
   1.400       1.3949E+07             5.7446E+02            3.5939E+00
   1.700       1.7417E+07             8.5836E+02            5.7357E+00
```

2.000	2.0877E+07	1.1897E+03	8.8037E+00
2.300	2.0850E+07	1.5255E+03	1.2895E+01
2.600	2.0823E+07	1.8284E+03	1.7945E+01
2.900	2.0795E+07	2.1015E+03	2.3861E+01
3.200	2.0768E+07	2.3477E+03	3.0557E+01
3.500	2.0741E+07	2.5695E+03	3.7956E+01
3.800	2.0714E+07	2.7695E+03	4.5988E+01
4.100	2.0687E+07	2.9495E+03	5.4592E+01
4.400	2.0660E+07	3.1117E+03	6.3709E+01
4.700	2.0633E+07	3.2576E+03	7.3289E+01
5.000	2.0606E+07	3.3889E+03	8.3286E+01
5.300	2.0579E+07	3.5069E+03	9.3657E+01
5.600	2.0553E+07	3.6130E+03	1.0437E+02
5.900	2.0526E+07	3.7083E+03	1.1538E+02
6.200	2.0499E+07	3.7938E+03	1.2666E+02
6.500	2.0472E+07	3.8706E+03	1.3818E+02
6.800	2.0446E+07	3.9393E+03	1.4993E+02
7.100	2.0419E+07	4.0008E+03	1.6187E+02
7.400	2.0392E+07	4.0559E+03	1.7398E+02
7.700	2.0366E+07	4.1050E+03	1.8625E+02
8.000	2.0339E+07	4.1489E+03	1.9867E+02
8.300	2.0313E+07	4.1879E+03	2.1120E+02
8.600	2.0286E+07	4.2226E+03	2.2385E+02
8.900	2.0260E+07	4.2534E+03	2.3659E+02
9.200	2.0233E+07	4.2807E+03	2.4942E+02
9.500	2.0207E+07	4.3048E+03	2.6233E+02
9.800	2.0181E+07	4.3259E+03	2.7531E+02
10.100	2.0154E+07	4.3445E+03	2.8835E+02
10.400	2.0128E+07	4.3607E+03	3.0144E+02
24.000	1.8972E+07	4.3041E+03	8.9927E+02
96.000	1.3872E+07	3.1485E+03	3.5632E+03
720.000	9.1951E+05	2.0871E+02	1.0328E+04

Time (hr)	CR I-131 (Curies)
0.000	1.7772E-11
0.260	1.6446E-03
0.333	3.3681E-03
0.500	2.7308E-03
0.750	2.2494E-03
1.000	1.8529E-03
1.400	1.3588E-03
1.700	1.0770E-03
2.000	8.5386E-04
2.300	6.7723E-04
2.600	5.3744E-04
2.900	4.2683E-04
3.200	3.3931E-04
3.500	2.7009E-04
3.800	2.1534E-04
4.100	1.7206E-04
4.400	1.3785E-04
4.700	1.1082E-04
5.000	8.9473E-05
5.300	7.2621E-05
5.600	5.9325E-05
5.900	4.8840E-05
6.200	4.0578E-05
6.500	3.4071E-05
6.800	2.8952E-05
7.100	2.4929E-05
7.400	2.1770E-05
7.700	1.9293E-05
8.000	1.7354E-05
8.300	1.5272E-05
8.600	1.3636E-05
8.900	1.2352E-05
9.200	1.1344E-05
9.500	1.0556E-05
9.800	9.9391E-06
10.100	9.4577E-06
10.400	9.0826E-06

24.000	7.6051E-06
96.000	2.7950E-06
720.000	6.8862E-08

##
Cumulative Dose Summary
##

	EAB		LPZ		CR	
Time (hr)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.260	1.4197E-02	5.1397E-04	5.5270E-03	2.0010E-04	7.3350E-02	2.3318E-03
0.333	2.9699E-02	1.0723E-03	1.1562E-02	4.1744E-04	1.9338E-01	6.1448E-03
0.500	3.1769E-02	1.1474E-03	1.2368E-02	4.4672E-04	5.3245E-01	1.6907E-02
0.750	3.8821E-02	1.4030E-03	1.5114E-02	5.4622E-04	9.4674E-01	3.0038E-02
1.000	5.3379E-02	1.9296E-03	2.0781E-02	7.5121E-04	1.2869E+00	4.0800E-02
1.400	9.9689E-02	3.6034E-03	2.2699E-02	8.2053E-04	1.7096E+00	5.4158E-02
1.700	1.5859E-01	5.7328E-03	2.5138E-02	9.0871E-04	1.9499E+00	6.1735E-02
2.000	2.4266E-01	8.7780E-03	2.8620E-02	1.0348E-03	2.1396E+00	6.7713E-02
2.300	3.5438E-01	1.2838E-02	3.3246E-02	1.2029E-03	2.2895E+00	7.2430E-02
2.600	4.9182E-01	1.7859E-02	3.8938E-02	1.4109E-03	2.4081E+00	7.6156E-02
2.900	6.5226E-01	2.3760E-02	4.5582E-02	1.6552E-03	2.5018E+00	7.9102E-02
3.200	8.3325E-01	3.0466E-02	5.3077E-02	1.9330E-03	2.5761E+00	8.1432E-02
3.500	1.0326E+00	3.7912E-02	6.1332E-02	2.2413E-03	2.6350E+00	8.3279E-02
3.800	1.2483E+00	4.6035E-02	7.0265E-02	2.5777E-03	2.6817E+00	8.4744E-02
4.100	1.4786E+00	5.4781E-02	7.9802E-02	2.9399E-03	2.7189E+00	8.5909E-02
4.400	1.7219E+00	6.4099E-02	8.9878E-02	3.3258E-03	2.7486E+00	8.6838E-02
4.700	1.9767E+00	7.3941E-02	1.0043E-01	3.7333E-03	2.7723E+00	8.7581E-02
5.000	2.2419E+00	8.4264E-02	1.1141E-01	4.1609E-03	2.7914E+00	8.8177E-02
5.300	2.5161E+00	9.5029E-02	1.2277E-01	4.6067E-03	2.8068E+00	8.8658E-02
5.600	2.7985E+00	1.0620E-01	1.3446E-01	5.0693E-03	2.8193E+00	8.9049E-02
5.900	3.0880E+00	1.1774E-01	1.4645E-01	5.5472E-03	2.8295E+00	8.9369E-02
6.200	3.3837E+00	1.2962E-01	1.5870E-01	6.0392E-03	2.8379E+00	8.9633E-02
6.500	3.6851E+00	1.4181E-01	1.7118E-01	6.5441E-03	2.8449E+00	8.9852E-02
6.800	3.9913E+00	1.5429E-01	1.8386E-01	7.0608E-03	2.8508E+00	9.0038E-02
7.100	4.3017E+00	1.6703E-01	1.9672E-01	7.5882E-03	2.8558E+00	9.0196E-02
7.400	4.6159E+00	1.8000E-01	2.0973E-01	8.1254E-03	2.8602E+00	9.0333E-02
7.700	4.9334E+00	1.9318E-01	2.2287E-01	8.6715E-03	2.8640E+00	9.0454E-02
8.000	5.2536E+00	2.0656E-01	2.3613E-01	9.2256E-03	2.8674E+00	9.0561E-02
8.300	5.5761E+00	2.2012E-01	2.3915E-01	9.3836E-03	2.8704E+00	9.0657E-02
8.600	5.9008E+00	2.3384E-01	2.4219E-01	9.5440E-03	2.8731E+00	9.0741E-02
8.900	6.2271E+00	2.4770E-01	2.4524E-01	9.7065E-03	2.8755E+00	9.0817E-02
9.200	6.5549E+00	2.6168E-01	2.4830E-01	9.8710E-03	2.8777E+00	9.0887E-02
9.500	6.8838E+00	2.7579E-01	2.5138E-01	1.0037E-02	2.8797E+00	9.0951E-02
9.800	7.2137E+00	2.8999E-01	2.5447E-01	1.0205E-02	2.8815E+00	9.1011E-02
10.100	7.5443E+00	3.0428E-01	2.5756E-01	1.0375E-02	2.8833E+00	9.1068E-02
10.400	7.8755E+00	3.1866E-01	2.6066E-01	1.0545E-02	2.8850E+00	9.1122E-02
24.000	2.2407E+01	9.6365E-01	3.9657E-01	1.8311E-02	2.9474E+00	9.3141E-02
96.000	7.9379E+01	2.9936E+00	6.7522E-01	2.8971E-02	3.0218E+00	9.5464E-02
720.000	2.1428E+02	7.2863E+00	8.5793E-01	3.4916E-02	3.0649E+00	9.6784E-02

##
Worst Two-Hour Doses
##

EAB

Time (hr)	Whole Body (rem)	Thyroid (rem)	TEDE (rem)
9.8	2.8331E-02	2.1577E+00	9.5061E-02

12.7 RADTRAD Output File “JAFMS _270.out”

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 11:01:04
########################################################################

########################################################################
                     File information
########################################################################

Plant file           = C:\radtrad3.03\Fitz\JAFMS_270.psf
Inventory file       = c:\radtrad3.03\fitz\jafloca.nif
Release file         = c:\radtrad3.03\defaults\bwr_dba.rft
Dose Conversion file = c:\radtrad3.03\defaults\fgr11&12.inp




    #####    ####   #####    #  #     #  #####   #     #  #####
    #    #  #       #        #  ##    #  #    #  #     #    #
    #    #  #       #        #  # #   #  #    #  #     #    #
    #####    ####   ####     #  #  #  #  #####   #     #    #
    #            #  #        #  #   # #  #       #     #    #
    #            #  #        #  #    ##  #       #     #    #
    #         ####   #        #  #     #  #        ####     #


Radtrad 3.03 4/15/2001
Containment Leakage from Drywell Using CAVEX Core Inventory -  Containment Shine Dose
Nuclide Inventory File:
c:\radtrad3.03\fitz\jafloca.nif
Plant Power Level:
 2.5867E+03
Compartments:
  8
Compartment 1:
DW
  3
 1.5000E+05
  1
  0
  0
  0
  0
Compartment 2:
RB
  3
 1.1850E+06
  0
  0
  0
  0
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
CR
  1
 1.0100E+05
  0
  0
  0
  0
```

```
  0
Compartment 5:
MSL "B" Volume 1
  3
 2.9829E+02
  0
  0
  0
  0
  0
Compartment 6:
MSL "B" Volume 2
  3
 5.0800E+02
  0
  0
  0
  0
  0
Compartment 7:
MSL "C" Volume 3
  3
 2.5777E+02
  0
  0
  0
  0
  0
Compartment 8:
MSL "C" Volume 4
  3
 5.4852E+02
  0
  0
  0
  0
  0
Pathways:
 11
Pathway 1:
DW to  RB
  1
  2
  4
Pathway 2:
RB toEnvironment
  2
  3
  2
Pathway 3:
Environment to CR Unfiltered
  3
  4
  2
Pathway 4:
Environment to  CR Filtered
  3
  4
  2
Pathway 5:
CR to  Environment - Exhaust
  4
  3
  2
Pathway 6:
DW to  MSL "B" Volume 1
  1
  5
  2
Pathway 7:
MSL "B" Volume 1 to  MSL "B" Volume 2
  5
```

```
  6
  2
Pathway 8:
MSL "B" Volume 2 to  Environment
  6
  3
  2
Pathway 9:
DW to  MSL "C" Volume 3
  1
  7
  2
Pathway 10:
MSL "C" Volume 3 to  MSL "C" Volume 4
  7
  8
  2
Pathway 11:
MSL "C" Volume 4 to  Environment
  8
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\radtrad3.03\defaults\fgr11&12.inp
c:\radtrad3.03\defaults\bwr_dba.rft
  0.0000E+00
  1
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  8
Compartment 1:
  1
  1
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.5000E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   3.0000E+00
  2.3000E+00   3.0000E+00
  2.4000E+00   3.0000E+00
  3.0000E+00   3.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.5000E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   0.0000E+00
  2.3000E+00   0.0000E+00
  2.4000E+00   0.0000E+00
  3.0000E+00   0.0000E+00
  4.0000E+00   0.0000E+00
```

```
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  0
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 5:
  0
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 6:
  0
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 7:
  0
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 8:
  0
  1
  0
```

```
  0
  0
  0
  0
  0
  0
Pathways:
 11
Pathway 1:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.5000E+00
  2.4000E+01   7.5000E-01
  7.2000E+02   0.0000E+00
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  3.3330E-01   0.0000E+00   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   4.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+02   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
```

```
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   1.0000E+02   1.0000E+02   1.0000E+02
  5.0000E-01   1.3000E+03   1.0000E+02   1.0000E+02   1.0000E+02
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   8.2500E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   4.7800E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   2.3900E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   8.2500E-01   9.9940E+01   4.9200E+00   0.0000E+00
  2.0000E+00   4.7800E-01   9.9940E+01   4.9200E+00   0.0000E+00
  8.0000E+00   4.7800E-01   9.9940E+01   6.5700E+00   0.0000E+00
  2.4000E+01   2.3900E-01   9.9940E+01   1.1440E+01   0.0000E+00
  4.8000E+01   2.3900E-01   9.9940E+01   2.3680E+01   0.0000E+00
  7.2000E+01   2.3900E-01   9.9940E+01   4.1310E+01   0.0000E+00
  9.6000E+01   2.3900E-01   9.9940E+01   6.0070E+01   0.0000E+00
  2.4000E+02   2.3900E-01   9.9940E+01   9.5290E+01   0.0000E+00
  4.8000E+02   2.3900E-01   9.9940E+01   9.6640E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 8:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   2.2500E+00   0.0000E+00   8.6800E+00   0.0000E+00
```

```
  2.0000E+00   1.3030E+00   0.0000E+00   8.6800E+00   0.0000E+00
  8.0000E+00   1.3030E+00   0.0000E+00   1.1520E+01   0.0000E+00
  2.4000E+01   6.5200E-01   0.0000E+00   1.9630E+01   0.0000E+00
  4.8000E+01   6.5200E-01   0.0000E+00   3.8400E+01   0.0000E+00
  7.2000E+01   6.5200E-01   0.0000E+00   6.1300E+01   0.0000E+00
  9.6000E+01   6.5200E-01   0.0000E+00   8.0030E+01   0.0000E+00
  2.4000E+02   6.5200E-01   0.0000E+00   9.7710E+01   0.0000E+00
  4.8000E+02   6.5200E-01   0.0000E+00   9.7880E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 9:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   8.2500E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   4.7800E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   2.3900E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 10:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   8.2500E-01   9.9910E+01   3.6500E+00   0.0000E+00
  2.0000E+00   4.7800E-01   9.9910E+01   3.6500E+00   0.0000E+00
  8.0000E+00   4.7800E-01   9.9910E+01   4.8900E+00   0.0000E+00
  2.4000E+01   2.3900E-01   9.9910E+01   8.5700E+00   0.0000E+00
  4.8000E+01   2.3900E-01   9.9910E+01   1.8070E+01   0.0000E+00
  7.2000E+01   2.3900E-01   9.9910E+01   3.2550E+01   0.0000E+00
  9.6000E+01   2.3900E-01   9.9910E+01   4.9360E+01   0.0000E+00
  2.4000E+02   2.3900E-01   9.9910E+01   9.1170E+01   0.0000E+00
  4.8000E+02   2.3900E-01   9.9910E+01   9.3910E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 11:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   2.2500E+00   0.0000E+00   8.9700E+00   0.0000E+00
  2.0000E+00   1.3030E+00   0.0000E+00   8.9700E+00   0.0000E+00
  8.0000E+00   1.3030E+00   0.0000E+00   1.1900E+01   0.0000E+00
  2.4000E+01   6.5200E-01   0.0000E+00   2.0250E+01   0.0000E+00
  4.8000E+01   6.5200E-01   0.0000E+00   3.9440E+01   0.0000E+00
  7.2000E+01   6.5200E-01   0.0000E+00   6.2550E+01   0.0000E+00
  9.6000E+01   6.5200E-01   0.0000E+00   8.1060E+01   0.0000E+00
```

```
  2.4000E+02   6.5200E-01   0.0000E+00   9.7730E+01   0.0000E+00
  4.8000E+02   6.5200E-01   0.0000E+00   9.7890E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
EAB
  3
  1
  4
  0.0000E+00   1.7900E-04
  1.0000E+00   1.7900E-04
  2.0000E+00   1.7900E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  0
Location 2:
LPZ
  3
  1
  6
  0.0000E+00   2.0000E-05
  4.0000E+00   2.0000E-05
  8.0000E+00   1.3400E-05
  2.4000E+01   5.5900E-06
  9.6000E+01   1.6000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   2.3000E-04
  0
Location 3:
CR
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  7
  0.0000E+00   4.5200E-03
  3.3330E-01   4.5200E-03
  2.0000E+00   3.3300E-03
  8.0000E+00   1.1900E-03
  2.4000E+01   8.2700E-04
  9.6000E+01   6.4000E-04
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   1.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   5.0000E-01
```

```
  8.0000E+00   1.0000E+00
  2.4000E+01   2.0000E+00
  9.6000E+01   5.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\radtrad3.o386
  1
  1
  1
  0
  0
End of Scenario File
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 11:01:04
########################################################################

########################################################################
                    Plant Description
########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.5867E+03 MWth

Number of compartments    =   8

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: DW
Compartment volume =   1.5000E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Exit Pathway Number    1: DW to  RB
   Exit Pathway Number    6: DW to  MSL "B" Volume 1
   Exit Pathway Number    9: DW to  MSL "C" Volume 3

Compartment number  2
Name: RB
Compartment volume =   1.1850E+06 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  2
   Inlet Pathway Number   1: DW to  RB
   Exit Pathway Number    2: RB toEnvironment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   2: RB toEnvironment
   Inlet Pathway Number   5: CR to  Environment - Exhaust
   Inlet Pathway Number   8: MSL "B" Volume 2 to  Environment
   Inlet Pathway Number  11: MSL "C" Volume 4 to  Environment
   Exit Pathway Number    3: Environment to CR Unfiltered
   Exit Pathway Number    4: Environment to  CR Filtered

Compartment number  4
Name: CR
Compartment volume =   1.0100E+05 (Cubic feet)
Compartment type is Control Room
Pathways into and out of compartment  4
   Inlet Pathway Number   3: Environment to CR Unfiltered
   Inlet Pathway Number   4: Environment to  CR Filtered
   Exit Pathway Number    5: CR to  Environment - Exhaust

Compartment number  5
Name: MSL "B" Volume 1
Compartment volume =   2.9829E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  5
   Inlet Pathway Number   6: DW to  MSL "B" Volume 1
   Exit Pathway Number    7: MSL "B" Volume 1 to  MSL "B" Volume 2

Compartment number  6
Name: MSL "B" Volume 2
Compartment volume =   5.0800E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  6
   Inlet Pathway Number   7: MSL "B" Volume 1 to  MSL "B" Volume 2
   Exit Pathway Number    8: MSL "B" Volume 2 to  Environment
```

```
Compartment number  7
Name: MSL "C" Volume 3
Compartment volume =   2.5777E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  7
   Inlet Pathway Number   9: DW to  MSL "C" Volume 3
   Exit Pathway Number   10: MSL "C" Volume 3 to  MSL "C" Volume 4

Compartment number  8
Name: MSL "C" Volume 4
Compartment volume =   5.4852E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  8
   Inlet Pathway Number  10: MSL "C" Volume 3 to  MSL "C" Volume 4
   Exit Pathway Number   11: MSL "C" Volume 4 to  Environment

Total number of pathways =  11
```

```
######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 11:01:04
######################################################################

######################################################################
                    Scenario Description
######################################################################

Radioactive Decay is enabled
Calculation of Daughters is enabled

Release Fractions and Timings
               GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
            0.500000 hr    1.5000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        4.279E+03
IODINE       5.0000E-02     2.5000E-01      0.0000E+00        2.249E+02
CESIUM       5.0000E-02     2.0000E-01      0.0000E+00        4.682E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        3.100E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.674E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.550E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.852E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        5.214E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.978E+00

Inventory Power =      2587. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
               (Ci/MWt)      (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   1.529E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.830E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   5.260E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.670E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.740E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.360E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.600E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   3.240E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   4.260E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.030E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.200E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   4.400E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   4.110E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.250E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.640E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   5.020E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.860E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   5.030E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.140E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.540E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.460E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   3.180E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.940E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.980E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.560E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   7.910E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.530E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   4.340E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   7.420E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.430E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   5.380E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.860E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.710E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.960E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.640E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.430E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
 I-135     2   5.330E+04  2.380E+04   8.294E-14   8.460E-09   3.320E-10
 Xe-133    1   5.630E+04  4.532E+05   1.560E-15   0.000E+00   0.000E+00
 Xe-135    1   2.310E+04  3.272E+04   1.190E-14   0.000E+00   0.000E+00
 Cs-134    3   7.220E+03  6.507E+07   7.570E-14   1.110E-08   1.250E-08
 Cs-136    3   2.160E+03  1.132E+06   1.060E-13   1.730E-09   1.980E-09
 Cs-137    3   5.810E+03  9.467E+08   2.725E-14   7.930E-09   8.630E-09
 Ba-139    6   5.150E+04  4.962E+03   2.170E-15   2.400E-12   4.640E-11
```

Ba-140	6	5.000E+04	1.101E+06	8.580E-15	2.560E-10	1.010E-09
La-140	9	5.240E+04	1.450E+05	1.170E-13	6.870E-11	1.310E-09
La-141	9	4.700E+04	1.415E+04	2.390E-15	9.400E-12	1.570E-10
La-142	9	4.600E+04	5.550E+03	1.440E-13	8.740E-12	6.840E-11
Ce-141	8	4.720E+04	2.808E+06	3.430E-15	2.550E-11	2.420E-09
Ce-143	8	4.560E+04	1.188E+05	1.290E-14	6.230E-12	9.160E-10
Ce-144	8	3.790E+04	2.456E+07	2.773E-15	2.920E-10	1.010E-07
Pr-143	9	4.430E+04	1.172E+06	2.100E-17	1.680E-18	2.190E-09
Nd-147	9	1.850E+04	9.487E+05	6.190E-15	1.820E-11	1.850E-09
Np-239	8	5.370E+05	2.035E+05	7.690E-15	7.620E-12	6.780E-10
Pu-238	8	1.530E+02	2.769E+09	4.880E-18	3.860E-10	7.790E-05
Pu-239	8	1.340E+01	7.594E+11	4.240E-18	3.750E-10	8.330E-05
Pu-240	8	2.510E+01	2.063E+11	4.750E-18	3.760E-10	8.330E-05
Pu-241	8	5.410E+03	4.544E+08	7.250E-20	9.150E-12	1.340E-06
Am-241	9	9.060E+00	1.364E+10	8.180E-16	1.600E-09	1.200E-04
Cm-242	9	2.300E+03	1.407E+07	5.690E-18	9.410E-10	4.670E-06
Cm-244	9	1.520E+02	5.715E+08	4.910E-18	1.010E-09	6.700E-05

Nuclide	Daughter	Fraction	Daughter	Fraction	Daughter	Fraction
Kr-85m	Kr-85	0.21	none	0.00	none	0.00
Kr-87	Rb-87	1.00	none	0.00	none	0.00
Kr-88	Rb-88	1.00	none	0.00	none	0.00
Sr-90	Y-90	1.00	none	0.00	none	0.00
Sr-91	Y-91m	0.58	Y-91	0.42	none	0.00
Sr-92	Y-92	1.00	none	0.00	none	0.00
Y-93	Zr-93	1.00	none	0.00	none	0.00
Zr-95	Nb-95m	0.01	Nb-95	0.99	none	0.00
Zr-97	Nb-97m	0.95	Nb-97	0.05	none	0.00
Mo-99	Tc-99m	0.88	Tc-99	0.12	none	0.00
Tc-99m	Tc-99	1.00	none	0.00	none	0.00
Ru-103	Rh-103m	1.00	none	0.00	none	0.00
Ru-105	Rh-105	1.00	none	0.00	none	0.00
Ru-106	Rh-106	1.00	none	0.00	none	0.00
Sb-127	Te-127m	0.18	Te-127	0.82	none	0.00
Sb-129	Te-129m	0.22	Te-129	0.77	none	0.00
Te-127m	Te-127	0.98	none	0.00	none	0.00
Te-129	I-129	1.00	none	0.00	none	0.00
Te-129m	Te-129	0.65	I-129	0.35	none	0.00
Te-131m	Te-131	0.22	I-131	0.78	none	0.00
Te-132	I-132	1.00	none	0.00	none	0.00
I-131	Xe-131m	0.01	none	0.00	none	0.00
I-133	Xe-133m	0.03	Xe-133	0.97	none	0.00
I-135	Xe-135m	0.15	Xe-135	0.85	none	0.00
Xe-135	Cs-135	1.00	none	0.00	none	0.00
Cs-137	Ba-137m	0.95	none	0.00	none	0.00
Ba-140	La-140	1.00	none	0.00	none	0.00
La-141	Ce-141	1.00	none	0.00	none	0.00
Ce-143	Pr-143	1.00	none	0.00	none	0.00
Ce-144	Pr-144m	0.02	Pr-144	0.98	none	0.00
Nd-147	Pm-147	1.00	none	0.00	none	0.00
Np-239	Pu-239	1.00	none	0.00	none	0.00
Pu-238	U-234	1.00	none	0.00	none	0.00
Pu-239	U-235	1.00	none	0.00	none	0.00
Pu-240	U-236	1.00	none	0.00	none	0.00
Pu-241	U-237	0.00	Am-241	1.00	none	0.00
Am-241	Np-237	1.00	none	0.00	none	0.00
Cm-242	Pu-238	1.00	none	0.00	none	0.00
Cm-244	Pu-240	1.00	none	0.00	none	0.00

Iodine fractions
Aerosol = 9.5000E-01
Elemental = 4.8500E-02
Organic = 1.5000E-03

COMPARTMENT DATA

Compartment number 1: DW

Sprays: Aerosal Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01

1.5000E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	3.0000E+00
2.3000E+00	3.0000E+00
2.4000E+00	3.0000E+00
3.0000E+00	3.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Sprays: Elemental Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01
1.5000E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	0.0000E+00
2.3000E+00	0.0000E+00
2.4000E+00	0.0000E+00
3.0000E+00	0.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Compartment number 2: RB

Compartment number 3: Environment

Compartment number 4: CR

Compartment number 5: MSL "B" Volume 1

Compartment number 6: MSL "B" Volume 2

Compartment number 7: MSL "C" Volume 3

Compartment number 8: MSL "C" Volume 4

PATHWAY DATA

Pathway number 1: DW to RB

Convection Data

Time (hr)	Flow Rate (% / day)
0.0000E+00	1.5000E+00
2.4000E+01	7.5000E-01
7.2000E+02	0.0000E+00

Pathway number 2: RB toEnvironment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
3.3330E-01	0.0000E+00	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 3: Environment to CR Unfiltered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	4.0000E+02	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 4: Environment to CR Filtered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic

0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	9.0000E+02	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 5: CR to Environment - Exhaust

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	1.0000E+02	1.0000E+02	1.0000E+02
5.0000E-01	1.3000E+03	1.0000E+02	1.0000E+02	1.0000E+02
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 6: DW to MSL "B" Volume 1

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.0000E+00	4.7800E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.4000E+01	2.3900E-01	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 7: MSL "B" Volume 1 to MSL "B" Volume 2

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	9.9940E+01	4.9200E+00	0.0000E+00
2.0000E+00	4.7800E-01	9.9940E+01	4.9200E+00	0.0000E+00
8.0000E+00	4.7800E-01	9.9940E+01	6.5700E+00	0.0000E+00
2.4000E+01	2.3900E-01	9.9940E+01	1.1440E+01	0.0000E+00
4.8000E+01	2.3900E-01	9.9940E+01	2.3680E+01	0.0000E+00
7.2000E+01	2.3900E-01	9.9940E+01	4.1310E+01	0.0000E+00
9.6000E+01	2.3900E-01	9.9940E+01	6.0070E+01	0.0000E+00
2.4000E+02	2.3900E-01	9.9940E+01	9.5290E+01	0.0000E+00
4.8000E+02	2.3900E-01	9.9940E+01	9.6640E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 8: MSL "B" Volume 2 to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.2500E+00	0.0000E+00	8.6800E+00	0.0000E+00
2.0000E+00	1.3030E+00	0.0000E+00	8.6800E+00	0.0000E+00
8.0000E+00	1.3030E+00	0.0000E+00	1.1520E+01	0.0000E+00
2.4000E+01	6.5200E-01	0.0000E+00	1.9630E+01	0.0000E+00
4.8000E+01	6.5200E-01	0.0000E+00	3.8400E+01	0.0000E+00
7.2000E+01	6.5200E-01	0.0000E+00	6.1300E+01	0.0000E+00
9.6000E+01	6.5200E-01	0.0000E+00	8.0030E+01	0.0000E+00
2.4000E+02	6.5200E-01	0.0000E+00	9.7710E+01	0.0000E+00
4.8000E+02	6.5200E-01	0.0000E+00	9.7880E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 9: DW to MSL "C" Volume 3

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.0000E+00	4.7800E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.4000E+01	2.3900E-01	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 10: MSL "C" Volume 3 to MSL "C" Volume 4

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	9.9910E+01	3.6500E+00	0.0000E+00
2.0000E+00	4.7800E-01	9.9910E+01	3.6500E+00	0.0000E+00
8.0000E+00	4.7800E-01	9.9910E+01	4.8900E+00	0.0000E+00
2.4000E+01	2.3900E-01	9.9910E+01	8.5700E+00	0.0000E+00
4.8000E+01	2.3900E-01	9.9910E+01	1.8070E+01	0.0000E+00
7.2000E+01	2.3900E-01	9.9910E+01	3.2550E+01	0.0000E+00
9.6000E+01	2.3900E-01	9.9910E+01	4.9360E+01	0.0000E+00
2.4000E+02	2.3900E-01	9.9910E+01	9.1170E+01	0.0000E+00
4.8000E+02	2.3900E-01	9.9910E+01	9.3910E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 11: MSL "C" Volume 4 to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.2500E+00	0.0000E+00	8.9700E+00	0.0000E+00
2.0000E+00	1.3030E+00	0.0000E+00	8.9700E+00	0.0000E+00
8.0000E+00	1.3030E+00	0.0000E+00	1.1900E+01	0.0000E+00
2.4000E+01	6.5200E-01	0.0000E+00	2.0250E+01	0.0000E+00
4.8000E+01	6.5200E-01	0.0000E+00	3.9440E+01	0.0000E+00
7.2000E+01	6.5200E-01	0.0000E+00	6.2550E+01	0.0000E+00
9.6000E+01	6.5200E-01	0.0000E+00	8.1060E+01	0.0000E+00
2.4000E+02	6.5200E-01	0.0000E+00	9.7730E+01	0.0000E+00
4.8000E+02	6.5200E-01	0.0000E+00	9.7890E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

LOCATION DATA

Location EAB is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	1.7900E-04
1.0000E+00	1.7900E-04
2.0000E+00	1.7900E-04
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
7.2000E+02	3.5000E-04

Location LPZ is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	2.0000E-05
4.0000E+00	2.0000E-05
8.0000E+00	1.3400E-05
2.4000E+01	5.5900E-06
9.6000E+01	1.6000E-06
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
8.0000E+00	1.8000E-04
2.4000E+01	2.3000E-04
7.2000E+02	2.3000E-04

Location CR is in compartment 4

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	4.5200E-03
3.3330E-01	4.5200E-03
2.0000E+00	3.3300E-03
8.0000E+00	1.1900E-03
2.4000E+01	8.2700E-04

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        9.6000E+01          6.4000E-04
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)          Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.5000E-04
        7.2000E+02                 3.5000E-04

      Location Occupancy Factor Data
       Time (hr)          Occupancy Factor
        0.0000E+00            1.0000E+00
        2.4000E+01            6.0000E-01
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time             Time step
       0.0000E+00       1.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       5.0000E-01
       8.0000E+00       1.0000E+00
       2.4000E+01       2.0000E+00
       9.6000E+01       5.0000E+00
       7.2000E+02       0.0000E+00
```

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######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 11:01:04
######################################################################




     ####   #     #  #####  #####   #     #  #####
    #    #  #     #    #    #    #  #     #    #
    #    #  #     #    #    #    #  #     #    #
    #    #  #     #    #    #####   #     #    #
    #    #  #     #    #    #       #     #    #
    #    #  #     #    #    #       #     #    #
     ####    ####     #    #        ####     #


######################################################################
           Dose, Detailed model and Detailed Inventory Output
######################################################################

EAB Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0539E-05  4.4832E-04  2.4797E-05
Accumulated dose (rem)  1.0539E-05  4.4832E-04  2.4797E-05

LPZ Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1776E-06  5.0091E-05  2.7706E-06
Accumulated dose (rem)  1.1776E-06  5.0091E-05  2.7706E-06

CR Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.7313E-07  8.8969E-04  2.9165E-05
Accumulated dose (rem)  8.7313E-07  8.8969E-04  2.9165E-05

DW Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5339E+04  1.1556E-01  8.1875E+23  1.0363E+18
Kr-85m                 7.0976E+05  8.6246E-05  6.1104E+20  1.6510E+19
Kr-87                  1.2507E+06  4.4153E-05  3.0563E+20  3.0427E+19
Kr-88                  1.8753E+06  1.4955E-04  1.0235E+21  4.4068E+19
Rb-86                  5.6860E+03  6.9881E-05  4.8934E+20  1.2999E+17
I-131                  2.3333E+06  1.8821E-02  8.6521E+22  5.3353E+19
I-132                  3.2389E+06  3.1378E-04  1.4315E+21  7.5375E+19
I-133                  4.8078E+06  4.2441E-03  1.9217E+22  1.1030E+20
I-134                  4.2584E+06  1.5963E-04  7.1740E+20  1.0662E+20
I-135                  4.4365E+06  1.2633E-03  5.6353E+21  1.0261E+20
Xe-133                 4.8525E+06  2.5924E-02  1.1738E+23  1.1091E+20
Xe-135                 2.0375E+06  7.9785E-04  3.5591E+21  4.6188E+19
Cs-134                 6.2233E+05  4.8100E-01  2.1617E+24  1.4225E+19
Cs-136                 1.8605E+05  2.5385E-03  1.1240E+22  4.2535E+18
Cs-137                 5.0080E+05  5.7575E+00  2.5308E+25  1.1447E+19

DW Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4163E+23  0.0000E+00
Elemental I (atoms)    5.5058E+21  0.0000E+00
Organic I (atoms)      1.7028E+20  0.0000E+00
Aerosols (kg)          6.2647E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.7352E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.8338E-04
Total I (Ci)                                   1.9075E+07

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
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Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.7227E+00  1.2038E-05  8.5284E+19  7.3026E+13
Kr-85m                 7.3931E+01  8.9837E-09  6.3648E+16  1.1583E+15
Kr-87                  1.3027E+02  4.5991E-09  3.1835E+16  2.1109E+15
Kr-88                  1.9534E+02  1.5578E-08  1.0661E+17  3.0839E+15
Rb-86                  5.9228E-01  7.2790E-09  5.0971E+16  9.1594E+12
I-131                  2.4304E+02  1.9604E-06  9.0121E+18  3.7592E+15
I-132                  3.3187E+02  3.2151E-08  1.4668E+17  5.2232E+15
I-133                  5.0080E+02  4.4208E-07  2.0017E+18  7.7656E+15
I-134                  4.4357E+02  1.6628E-08  7.4727E+16  7.3438E+15
I-135                  4.6212E+02  1.3159E-07  5.8699E+17  7.2095E+15
Xe-133                 5.0546E+02  2.7004E-06  1.2227E+19  7.8157E+15
Xe-135                 2.1223E+02  8.3107E-08  3.7073E+17  3.2610E+15
Cs-134                 6.4824E+01  5.0103E-05  2.2517E+20  1.0024E+15
Cs-136                 1.9379E+01  2.6442E-07  1.1708E+18  2.9971E+14
Cs-137                 5.2165E+01  5.9972E-04  2.6362E+21  8.0662E+14

RB Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.8084E+19  0.0000E+00
Elemental I (atoms)    5.7338E+17  0.0000E+00
Organic I (atoms)      1.7733E+16  0.0000E+00
Aerosols (kg)          6.5255E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.0198E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2960E-08
Total I (Ci)                                    1.9814E+03

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  8.5071E-06  2.1683E-11  1.5362E+14  8.2563E+07
```

Kr-85m	1.3317E-04	1.6182E-14	1.1465E+11	1.3040E+09
Kr-87	2.3466E-04	8.2845E-15	5.7345E+10	2.3506E+09
Kr-88	3.5187E-04	2.8061E-14	1.9203E+11	3.4633E+09
Rb-86	8.0566E-10	9.9015E-18	6.9335E+07	7.8198E+03
I-131	1.9503E-05	1.5731E-13	7.2318E+11	1.8932E+08
I-132	2.6292E-05	2.5472E-15	1.1621E+10	2.5880E+08
I-133	4.0188E-05	3.5476E-14	1.6063E+11	3.9077E+08
I-134	3.5596E-05	1.3343E-15	5.9967E+09	3.6175E+08
I-135	3.7084E-05	1.0560E-14	4.7105E+10	3.6208E+08
Xe-133	9.0987E-04	4.8609E-12	2.2010E+13	8.8316E+09
Xe-135	3.7532E-04	1.4697E-13	6.5561E+11	3.6407E+09
Cs-134	8.8179E-08	6.8154E-14	3.0629E+11	8.5580E+05
Cs-136	2.6361E-08	3.5968E-16	1.5927E+09	2.5588E+05
Cs-137	7.0959E-08	8.1579E-13	3.5860E+12	6.8868E+05

CR Transport Group Inventory:

Time (h) = 0.3333	Atmosphere	Sump	
Noble gases (atoms)	1.7665E+14	0.0000E+00	
Elemental I (atoms)	9.0132E+11	0.0000E+00	
Organic I (atoms)	3.1938E+10	0.0000E+00	
Aerosols (kg)	8.8765E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.6007E-15
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2198E-14
Total I (Ci)			1.5866E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9172E+14
Elemental I (atoms)	0.0000E+00	9.7969E+11
Organic I (atoms)	0.0000E+00	3.4715E+10
Aerosols (kg)	0.0000E+00	9.6328E-13

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	1.5049E+13	0.0000E+00
Elemental I (atoms)	7.6882E+10	0.0000E+00
Organic I (atoms)	2.7242E+09	0.0000E+00
Aerosols (kg)	7.5616E-14	0.0000E+00

EAB Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.9493E-05	1.6406E-03	9.1622E-05
Accumulated dose (rem)	5.0032E-05	2.0889E-03	1.1642E-04

LPZ Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.4126E-06	1.8331E-04	1.0237E-05
Accumulated dose (rem)	5.5901E-06	2.3340E-04	1.3008E-05

CR Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.1864E-06	5.3906E-03	1.7646E-04
Accumulated dose (rem)	6.0596E-06	6.2803E-03	2.0563E-04

DW Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	6.8009E+04	1.7334E-01	1.2281E+24	2.3096E+18
Kr-85m	1.0375E+06	1.2607E-04	8.9321E+20	3.6171E+19
Kr-87	1.7130E+06	6.0476E-05	4.1862E+20	6.3902E+19
Kr-88	2.7008E+06	2.1539E-04	1.4740E+21	9.5608E+19
Rb-86	6.0304E+02	7.4113E-06	5.1898E+19	1.6215E+17
I-131	2.5229E+05	2.0350E-03	9.3551E+21	6.6630E+19
I-132	3.6181E+05	3.5051E-05	1.5991E+20	9.3943E+19
I-133	5.1719E+05	4.5656E-04	2.0673E+21	1.3762E+20
I-134	4.0377E+05	1.5135E-05	6.8021E+19	1.2989E+20
I-135	4.7159E+05	1.3429E-04	5.9903E+20	1.2772E+20
Xe-133	7.2742E+06	3.8862E-02	1.7596E+23	2.4715E+20
Xe-135	3.0409E+06	1.1908E-03	5.3118E+21	1.0329E+20
Cs-134	6.6019E+04	5.1026E-02	2.2932E+23	1.7745E+19
Cs-136	1.9729E+04	2.6919E-04	1.1920E+21	5.3059E+18
Cs-137	5.3127E+04	6.1078E-01	2.6848E+24	1.4280E+19

DW Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	1.4122E+24	0.0000E+00	
Elemental I (atoms)	5.8262E+20	7.6685E+21	
Organic I (atoms)	2.5457E+20	0.0000E+00	
Aerosols (kg)	6.6457E-01	8.7318E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		8.3482E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.0587E-04
Total I (Ci)			2.0066E+06

DW to RB Transport Group Inventory:

Time (h) = 0.5000	Leakage Transport
Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1654E+20
Elemental I (atoms)	0.0000E+00	3.8790E+17
Organic I (atoms)	0.0000E+00	2.1078E+16
Aerosols (kg)	0.0000E+00	4.4060E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1654E+20
Elemental I (atoms)	0.0000E+00	3.8790E+17
Organic I (atoms)	0.0000E+00	2.1078E+16
Aerosols (kg)	0.0000E+00	4.4060E-04

RB Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	1.0628E+01	2.7088E-05	1.9191E+20	2.4298E+14
Kr-85m	1.6213E+02	1.9701E-08	1.3958E+17	3.7805E+15
Kr-87	2.6769E+02	9.4505E-09	6.5416E+16	6.5659E+15
Kr-88	4.2204E+02	3.3658E-08	2.3033E+17	9.9543E+15
Rb-86	7.5723E-01	9.3063E-09	6.5167E+16	2.4965E+13
I-131	3.1098E+02	2.5084E-06	1.1531E+19	1.0247E+16
I-132	4.0740E+02	3.9468E-08	1.8006E+17	1.3901E+16
I-133	6.3761E+02	5.6286E-07	2.5486E+18	2.1101E+16
I-134	4.9777E+02	1.8660E-08	8.3858E+16	1.8420E+16
I-135	5.8139E+02	1.6555E-07	7.3850E+17	1.9440E+16
Xe-133	1.1370E+03	6.0745E-06	2.7505E+19	2.6003E+16
Xe-135	4.7868E+02	1.8744E-07	8.3615E+17	1.0914E+16
Cs-134	8.2898E+01	6.4072E-05	2.8795E+20	2.7325E+15
Cs-136	2.4774E+01	3.3802E-07	1.4968E+18	8.1686E+14
Cs-137	6.6710E+01	7.6695E-04	3.3713E+21	2.1989E+15

RB Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	2.2069E+20	0.0000E+00	
Elemental I (atoms)	7.3066E+17	0.0000E+00	
Organic I (atoms)	3.9769E+16	0.0000E+00	
Aerosols (kg)	8.3449E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3019E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6479E-08
Total I (Ci)			2.4352E+03

DW to RB Transport Group Inventory:

Time (h) = 0.5000 Leakage Transport

Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

RB toEnvironment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	4.0823E-05	1.0405E-10	7.3719E+14	5.8598E+08
Kr-85m	6.2278E-04	7.5677E-14	5.3616E+11	9.0597E+09
Kr-87	1.0283E-03	3.6301E-14	2.5128E+11	1.5479E+10
Kr-88	1.6212E-03	1.2929E-13	8.8476E+11	2.3767E+10
Rb-86	3.5862E-09	4.4074E-17	3.0863E+08	5.3931E+04
I-131	8.7014E-05	7.0187E-13	3.2265E+12	1.3066E+09
I-132	1.1257E-04	1.0906E-14	4.9755E+10	1.7284E+09
I-133	1.7841E-04	1.5749E-13	7.1312E+11	2.6860E+09
I-134	1.3928E-04	5.2211E-15	2.3464E+10	2.2442E+09
I-135	1.6268E-04	4.6323E-14	2.0664E+11	2.4646E+09
Xe-133	4.3645E-03	2.3317E-11	1.0558E+14	6.2663E+10
Xe-135	1.8042E-03	7.0651E-13	3.1516E+12	2.5888E+10
Cs-134	3.9261E-07	3.0344E-13	1.3637E+12	5.9034E+06
Cs-136	1.1733E-07	1.6009E-15	7.0887E+09	1.7645E+06
Cs-137	3.1594E-07	3.6322E-12	1.5966E+13	4.7506E+06

CR Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	8.4759E+14	0.0000E+00	
Elemental I (atoms)	3.9990E+12	0.0000E+00	
Organic I (atoms)	1.5272E+11	0.0000E+00	
Aerosols (kg)	3.9521E-12	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.2738E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.4081E-14
Total I (Ci)			6.7996E-04

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5700E+14
Elemental I (atoms)	0.0000E+00	4.5513E+12
Organic I (atoms)	0.0000E+00	1.7281E+11
Aerosols (kg)	0.0000E+00	4.4872E-12

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00

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Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   0.5000      Filtered   Transported
Noble gases (atoms)    1.0928E+14  0.0000E+00
Elemental I (atoms)    5.4237E+11  0.0000E+00
Organic I (atoms)      1.9727E+10  0.0000E+00
Aerosols (kg)          5.3499E-13  0.0000E+00

EAB Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7565E-04  1.5340E-02  1.2624E-03
Accumulated dose (rem)  8.2568E-04  1.7429E-02  1.3789E-03

LPZ Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6665E-05  1.7140E-03  1.4105E-04
Accumulated dose (rem)  9.2255E-05  1.9474E-03  1.5406E-04

CR Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0701E-04  4.1943E-02  1.4376E-03
Accumulated dose (rem)  1.1307E-04  4.8223E-02  1.6433E-03

DW Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg          Atoms       Decay
Co-58                  2.1963E+01  6.9069E-07  7.1715E+18  1.3792E+15
Co-60                  2.6297E+01  2.3263E-05  2.3349E+20  1.6512E+15
Kr-85                  4.9869E+05  1.2711E+00  9.0055E+24  2.1469E+19
Kr-85m                 7.0415E+06  8.5564E-04  6.0621E+21  3.1473E+20
Kr-87                  9.5646E+06  3.3767E-04  2.3373E+21  4.7198E+20
Kr-88                  1.7529E+07  1.3979E-03  9.5665E+21  8.0098E+20
Rb-86                  7.5756E+02  9.3104E-06  6.5196E+19  2.1203E+17
Sr-89                  3.7226E+04  1.2813E-03  8.6701E+21  2.3378E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  3.0751E+17
Sr-91                  4.3069E+04  1.1881E-05  7.8626E+19  2.7517E+18
Sr-92                  3.7386E+04  2.9744E-06  1.9470E+19  2.4958E+18
Y-90                   5.2590E+01  9.6662E-08  6.4679E+17  3.2617E+15
Y-91                   4.7268E+02  1.9274E-05  1.2755E+20  2.9677E+16
Y-92                   7.5766E+02  7.8739E-08  5.1541E+17  4.2881E+16
Y-93                   4.9803E+02  1.4928E-07  9.6662E+17  3.1787E+16
Zr-95                  5.7684E+02  2.6851E-05  1.7021E+20  3.6225E+16
Zr-97                  5.3625E+02  2.8051E-07  1.7415E+18  3.4002E+16
Nb-95                  5.7824E+02  1.4788E-05  9.3740E+19  3.6309E+16
Mo-99                  7.3090E+03  1.5239E-05  9.2700E+19  4.6010E+17
Tc-99m                 6.5180E+03  1.2396E-06  7.5403E+18  4.0917E+17
Ru-103                 6.4043E+03  1.9844E-04  1.1602E+21  4.0221E+17
Ru-105                 3.9092E+03  5.8154E-07  3.3354E+18  2.5477E+17
Ru-106                 2.7875E+03  8.3320E-04  4.7337E+21  1.7504E+17
Rh-105                 4.2812E+03  5.0722E-06  2.9091E+19  2.6889E+17
Sb-127                 7.3024E+03  2.7345E-05  1.2966E+20  4.5936E+17
Sb-129                 1.9363E+04  3.4433E-06  1.6075E+19  1.2633E+18
Te-127                 7.2686E+03  2.7542E-06  1.3060E+19  4.5630E+17
Te-127m                1.2473E+03  1.3224E-04  6.2704E+20  7.8323E+16
Te-129                 2.0176E+04  9.6343E-07  4.4976E+18  1.2847E+18
Te-129m                4.1102E+03  1.3644E-04  6.3694E+20  2.5809E+17
Te-131m                1.5109E+04  1.8948E-05  8.7103E+19  9.5394E+17
Te-132                 1.0996E+05  3.6219E-04  1.6524E+21  6.9190E+18
I-131                  4.0160E+05  3.2394E-03  1.4892E+22  9.2575E+19
I-132                  5.7885E+05  5.6078E-05  2.5584E+20  1.3141E+20
I-133                  8.1089E+05  7.1582E-04  3.2412E+21  1.9039E+20
I-134                  4.3350E+05  1.6250E-05  7.3030E+19  1.6406E+20
I-135                  7.1342E+05  2.0315E-04  9.0620E+20  1.7498E+20
Xe-133                 5.3281E+07  2.8465E-01  1.2889E+24  2.2952E+21
Xe-135                 2.2407E+07  8.7742E-03  3.9140E+22  9.6498E+20
Cs-134                 8.2998E+04  6.4149E-02  2.8829E+23  2.3208E+19
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Cs-136	2.4777E+04	3.3806E-04	1.4969E+21	6.9376E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	1.8676E+19
Ba-139	3.5806E+04	2.1890E-06	9.4838E+18	2.5389E+18
Ba-140	5.7350E+04	7.8337E-04	3.3697E+21	3.6031E+18
La-140	6.3959E+02	1.1507E-06	4.9498E+18	3.9410E+16
La-141	4.5294E+02	8.0091E-08	3.4207E+17	2.9664E+16
La-142	3.3732E+02	2.3564E-08	9.9933E+16	2.3607E+16
Ce-141	1.3564E+03	4.7604E-05	2.0332E+20	8.5175E+16
Ce-143	1.2833E+03	1.9324E-06	8.1380E+18	8.0984E+16
Ce-144	1.0891E+03	3.4147E-04	1.4281E+21	6.8391E+16
Pr-143	5.0935E+02	7.5641E-06	3.1854E+19	3.1982E+16
Nd-147	2.1212E+02	2.6220E-06	1.0742E+19	1.3328E+16
Np-239	1.5245E+04	6.5714E-05	1.6558E+20	9.6008E+17
Pu-238	4.3973E+00	2.5685E-04	6.4992E+20	2.7612E+14
Pu-239	3.8516E-01	6.1967E-03	1.5614E+22	2.4185E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	4.5297E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	9.7632E+15
Am-241	1.0417E-01	3.0350E-05	7.5838E+19	6.5407E+12
Cm-242	2.6436E+01	7.9764E-06	1.9849E+19	1.6601E+15
Cm-244	1.7474E+00	2.1599E-05	5.3307E+19	1.0972E+14

DW Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.0351E+25	0.0000E+00	
Elemental I (atoms)	9.0808E+20	2.1014E+22	
Organic I (atoms)	6.7270E+20	0.0000E+00	
Aerosols (kg)	8.8772E-01	2.1825E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3210E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6621E-04
Total I (Ci)			2.9383E+06

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	6.4058E-03	2.0145E-10	2.0917E+15	2.0440E+11
Co-60	7.6699E-03	6.7852E-09	6.8102E+16	2.4472E+11
Kr-85	9.9182E+01	2.5280E-04	1.7911E+21	3.2119E+15
Kr-85m	1.4004E+03	1.7017E-07	1.2057E+18	4.6801E+16
Kr-87	1.9023E+03	6.7157E-08	4.6486E+17	6.9051E+16
Kr-88	3.4862E+03	2.7803E-07	1.9026E+18	1.1868E+17
Rb-86	9.9015E-01	1.2169E-08	8.5212E+16	8.3217E+13
Sr-89	1.0857E+01	3.7372E-07	2.5288E+18	3.4646E+14
Sr-90	1.4284E+00	1.0471E-05	7.0067E+19	4.5575E+13
Sr-91	1.2562E+01	3.4653E-09	2.2933E+16	4.0549E+14
Sr-92	1.0904E+01	8.6753E-10	5.6787E+15	3.6249E+14
Y-90	1.8883E-02	3.4707E-11	2.3223E+14	5.5968E+11

Y-91	1.3847E-01	5.6465E-09	3.7367E+16	4.4113E+12
Y-92	7.1730E-01	7.4546E-11	4.8796E+14	1.7291E+13
Y-93	1.4526E-01	4.3539E-11	2.8193E+14	4.6857E+12
Zr-95	1.6824E-01	7.8316E-09	4.9645E+16	5.3686E+12
Zr-97	1.5641E-01	8.1817E-11	5.0795E+14	5.0231E+12
Nb-95	1.6865E-01	4.3131E-09	2.7341E+16	5.3812E+12
Mo-99	2.1318E+00	4.4448E-09	2.7038E+16	6.8133E+13
Tc-99m	1.9011E+00	3.6154E-10	2.1993E+15	6.0636E+13
Ru-103	1.8679E+00	5.7877E-08	3.3839E+17	5.9607E+13
Ru-105	1.1402E+00	1.6962E-10	9.7282E+14	3.7298E+13
Ru-106	8.1304E-01	2.4302E-07	1.3807E+18	2.5942E+13
Rh-105	1.2487E+00	1.4794E-09	8.4849E+15	3.9847E+13
Sb-127	2.1299E+00	7.9755E-09	3.7819E+16	6.8039E+13
Sb-129	5.6476E+00	1.0043E-09	4.6884E+15	1.8488E+14
Te-127	2.1200E+00	8.0331E-10	3.8092E+15	6.7624E+13
Te-127m	3.6381E-01	3.8569E-08	1.8289E+17	1.1608E+13
Te-129	5.8848E+00	2.8100E-10	1.3118E+15	1.8941E+14
Te-129m	1.1988E+00	3.9795E-08	1.8577E+17	3.8250E+13
Te-131m	4.4068E+00	5.5264E-09	2.5405E+16	1.4112E+14
Te-132	3.2071E+01	1.0564E-07	4.8194E+17	1.0247E+15
I-131	4.3161E+02	3.4815E-06	1.6004E+19	3.4959E+16
I-132	5.1533E+02	4.9925E-08	2.2777E+17	4.4666E+16
I-133	8.7180E+02	7.6959E-07	3.4846E+18	7.1369E+16
I-134	4.6606E+02	1.7471E-08	7.8515E+16	5.0764E+16
I-135	7.6700E+02	2.1840E-07	9.7426E+17	6.4424E+16
Xe-133	1.0592E+04	5.6588E-05	2.5622E+20	3.4327E+17
Xe-135	4.4075E+03	1.7259E-06	7.6990E+18	1.4348E+17
Cs-134	1.0848E+02	8.3844E-05	3.7681E+20	9.1123E+15
Cs-136	3.2384E+01	4.4185E-07	1.9565E+18	2.7223E+15
Cs-137	8.7298E+01	1.0036E-03	4.4117E+21	7.3329E+15
Ba-139	1.0443E+01	6.3846E-10	2.7661E+15	3.6149E+14
Ba-140	1.6727E+01	2.2848E-07	9.8283E+17	5.3390E+14
La-140	2.5245E-01	4.5419E-10	1.9537E+15	7.2597E+12
La-141	1.3211E-01	2.3360E-11	9.9771E+13	4.3357E+12
La-142	9.8385E-02	6.8728E-12	2.9147E+13	3.3757E+12
Ce-141	3.9557E-01	1.3883E-08	5.9294E+16	1.2622E+13
Ce-143	3.7430E-01	5.6363E-10	2.3736E+15	1.1983E+13
Ce-144	3.1766E-01	9.9597E-08	4.1652E+17	1.0136E+13
Pr-143	1.4867E-01	2.2078E-09	9.2979E+15	4.7423E+12
Nd-147	6.1867E-02	7.6475E-10	3.1330E+15	1.9748E+12
Np-239	4.4465E+00	1.9167E-08	4.8295E+16	1.4215E+14
Pu-238	1.2825E-03	7.4916E-08	1.8956E+17	4.0922E+10
Pu-239	1.1234E-04	1.8074E-06	4.5541E+18	3.5844E+09
Pu-240	2.1040E-04	9.2335E-07	2.3169E+18	6.7133E+09
Pu-241	4.5349E-02	4.4023E-07	1.1000E+18	1.4470E+12
Am-241	3.0383E-05	8.8524E-09	2.2120E+16	9.6939E+08
Cm-242	7.7105E-03	2.3264E-09	5.7893E+15	2.4603E+11
Cm-244	5.0965E-04	6.2996E-09	1.5548E+16	1.6262E+10

RB Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	2.0585E+21	0.0000E+00	
Elemental I (atoms)	9.9991E+17	0.0000E+00	
Organic I (atoms)	1.8384E+17	0.0000E+00	
Aerosols (kg)	1.1072E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7954E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2499E-08
Total I (Ci)			3.0518E+03

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00

Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	6.7989E-12	2.1381E-19	2.2200E+06	1.1465E+02
Co-60	8.1405E-12	7.2015E-18	7.2281E+07	1.3726E+02
Kr-85	5.2478E-04	1.3376E-09	9.4765E+15	1.3639E+10
Kr-85m	7.4098E-03	9.0039E-13	6.3792E+12	1.9782E+11
Kr-87	1.0065E-02	3.5533E-13	2.4596E+12	2.8821E+11
Kr-88	1.8446E-02	1.4710E-12	1.0067E+13	5.0024E+11
Rb-86	7.3910E-09	9.0835E-17	6.3607E+08	3.9728E+05
Sr-89	1.1524E-08	3.9666E-16	2.6839E+09	1.9432E+05
Sr-90	1.5160E-09	1.1114E-14	7.4366E+10	2.5563E+04
Sr-91	1.3333E-08	3.6780E-18	2.4340E+07	2.2642E+05
Sr-92	1.1573E-08	9.2077E-19	6.0272E+06	2.0013E+05
Y-90	2.1872E-11	4.0201E-20	2.6900E+05	3.4726E+02
Y-91	1.4729E-10	6.0058E-18	3.9745E+07	2.4799E+03
Y-92	1.0193E-09	1.0593E-19	6.9341E+05	1.4401E+04
Y-93	1.5417E-10	4.6211E-20	2.9923E+05	2.6172E+03
Zr-95	1.7857E-10	8.3121E-18	5.2691E+07	3.0111E+03
Zr-97	1.6600E-10	8.6837E-20	5.3912E+05	2.8104E+03
Nb-95	1.7900E-10	4.5777E-18	2.9018E+07	3.0183E+03
Mo-99	2.2626E-09	4.7175E-18	2.8697E+07	3.8191E+04
Tc-99m	2.0177E-09	3.8373E-19	2.3342E+06	3.4008E+04
Ru-103	1.9825E-09	6.1428E-17	3.5916E+08	3.3432E+04
Ru-105	1.2101E-09	1.8003E-19	1.0325E+06	2.0720E+04
Ru-106	8.6293E-10	2.5793E-16	1.4654E+09	1.4551E+04
Rh-105	1.3253E-09	1.5702E-18	9.0056E+06	2.2348E+04
Sb-127	2.2606E-09	8.4649E-18	4.0139E+07	3.8145E+04
Sb-129	5.9942E-09	1.0659E-18	4.9761E+06	1.0268E+05
Te-127	2.2501E-09	8.5260E-19	4.0429E+06	3.7929E+04
Te-127m	3.8613E-10	4.0936E-17	1.9411E+08	6.5108E+03
Te-129	6.2459E-09	2.9824E-19	1.3923E+06	1.0579E+05
Te-129m	1.2724E-09	4.2236E-17	1.9717E+08	2.1455E+04
Te-131m	4.6772E-09	5.8655E-18	2.6964E+07	7.9044E+04
Te-132	3.4039E-08	1.1212E-16	5.1152E+08	5.7445E+05
I-131	1.8566E-04	1.4975E-12	6.8843E+12	9.7572E+09
I-132	2.0986E-04	2.0331E-14	9.2756E+10	1.1849E+10
I-133	3.7504E-04	3.3107E-13	1.4991E+12	1.9868E+10
I-134	2.0049E-04	7.5157E-15	3.3777E+10	1.3141E+10
I-135	3.2996E-04	9.3955E-14	4.1912E+11	1.7819E+10
Xe-133	5.6006E-02	2.9921E-10	1.3548E+15	1.4565E+12
Xe-135	2.2922E-02	8.9760E-12	4.0040E+13	5.9849E+11
Cs-134	8.0976E-07	6.2586E-13	2.8127E+12	4.3508E+07
Cs-136	2.4173E-07	3.2982E-15	1.4605E+10	1.2996E+07
Cs-137	6.5164E-07	7.4917E-12	3.2931E+13	3.5012E+07
Ba-139	1.1084E-08	6.7764E-19	2.9359E+06	1.9647E+05
Ba-140	1.7753E-08	2.4250E-16	1.0431E+09	2.9942E+05
La-140	3.0197E-10	5.4328E-19	2.3370E+06	4.6918E+03
La-141	1.4022E-10	2.4793E-20	1.0589E+05	2.4056E+03
La-142	1.0442E-10	7.2945E-21	3.0936E+04	1.8410E+03
Ce-141	4.1982E-10	1.4734E-17	6.2929E+07	7.0793E+03
Ce-143	3.9726E-10	5.9821E-19	2.5193E+06	6.7124E+03
Ce-144	3.3716E-10	1.0571E-16	4.4208E+08	5.6851E+03
Pr-143	1.5785E-10	2.3442E-18	9.8720E+06	2.6610E+03
Nd-147	6.5664E-11	8.1168E-19	3.3252E+06	1.1075E+03
Np-239	4.7194E-09	2.0343E-17	5.1258E+07	7.9673E+04
Pu-238	1.3612E-12	7.9513E-17	2.0119E+08	2.2953E+01
Pu-239	1.1923E-13	1.9183E-15	4.8335E+09	2.0105E+00
Pu-240	2.2331E-13	9.8001E-16	2.4591E+09	3.7654E+00
Pu-241	4.8132E-11	4.6724E-16	1.1675E+09	8.1159E+02
Am-241	3.2248E-14	9.3957E-18	2.3478E+07	5.4374E-01
Cm-242	8.1836E-12	2.4692E-18	6.1446E+06	1.3799E+02
Cm-244	5.4093E-13	6.6861E-18	1.6502E+07	9.1210E+00

CR Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump
Noble gases (atoms)	1.0890E+16	0.0000E+00
Elemental I (atoms)	8.2312E+12	0.0000E+00

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Organic I (atoms)      5.5828E+11  0.0000E+00
Aerosols (kg)          8.1673E-12  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         9.0590E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.1341E-13
Total I (Ci)                                   1.3010E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.5192E+15
Elemental I (atoms)    0.0000E+00  1.0629E+13
Organic I (atoms)      0.0000E+00  6.5944E+11
Aerosols (kg)          0.0000E+00  1.0478E-11

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.0150E+15
Elemental I (atoms)    1.3266E+13  4.1028E+11
Organic I (atoms)      1.0621E+12  3.2848E+10
Aerosols (kg)          1.3075E-11  4.0439E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    1.6410E+15  0.0000E+00
Elemental I (atoms)    2.7405E+12  0.0000E+00
Organic I (atoms)      1.3071E+11  0.0000E+00
Aerosols (kg)          2.7150E-12  0.0000E+00

EAB Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.5584E-03  3.5186E-02  5.6741E-03
Accumulated dose (rem)  5.3841E-03  5.2615E-02  7.0530E-03

LPZ Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.0932E-04  3.9314E-03  6.3398E-04
Accumulated dose (rem)  6.0158E-04  5.8788E-03  7.8804E-04

CR Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.3498E-04  9.5724E-02  3.8682E-03
Accumulated dose (rem)  9.4805E-04  1.4395E-01  5.5115E-03

DW Compartment Nuclide Inventory:

Time (h) =   1.5000       Ci           kg          Atoms       Decay
Co-58                  2.1958E+01  6.9055E-07  7.1700E+18  2.8418E+15
Co-60                  2.6296E+01  2.3263E-05  2.3349E+20  3.4026E+15
Kr-85                  9.2911E+05  2.3681E+00  1.6778E+25  7.1883E+19
Kr-85m                 1.2142E+07  1.4754E-03  1.0453E+22  9.9731E+20
Kr-87                  1.3569E+07  4.7902E-04  3.3158E+21  1.3078E+21
Kr-88                  2.8906E+07  2.3052E-03  1.5776E+22  2.4599E+21
Rb-86                  7.5697E+02  9.3032E-06  6.5145E+19  2.6247E+17
Sr-89                  3.7215E+04  1.2810E-03  8.6676E+21  4.8167E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  6.3367E+17
Sr-91                  4.1526E+04  1.1455E-05  7.5809E+19  5.5684E+18
Sr-92                  3.2898E+04  2.6173E-06  1.7132E+19  4.8331E+18
Y-90                   5.6082E+01  1.0308E-07  6.8974E+17  6.6431E+15
Y-91                   4.7317E+02  1.9294E-05  1.2768E+20  6.1135E+16
Y-92                   1.1457E+03  1.1907E-07  7.7940E+17  7.6140E+16
Y-93                   4.8123E+02  1.4424E-07  9.3402E+17  6.4393E+16
Zr-95                  5.7671E+02  2.6845E-05  1.7017E+20  7.4638E+16
Zr-97                  5.2537E+02  2.7482E-07  1.7062E+18  6.9353E+16
Nb-95                  5.7824E+02  1.4787E-05  9.3739E+19  7.4819E+16
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Mo-99	7.2707E+03	1.5159E-05	9.2214E+19	9.4560E+17
Tc-99m	6.5143E+03	1.2389E-06	7.5360E+18	8.4069E+17
Ru-103	6.4019E+03	1.9836E-04	1.1598E+21	8.2866E+17
Ru-105	3.6156E+03	5.3788E-07	3.0849E+18	5.0522E+17
Ru-106	2.7874E+03	8.3317E-04	4.7335E+21	3.6069E+17
Rh-105	4.2762E+03	5.0662E-06	2.9057E+19	5.5362E+17
Sb-127	7.2751E+03	2.7242E-05	1.2918E+20	9.4479E+17
Sb-129	1.7871E+04	3.1779E-06	1.4835E+19	2.5025E+18
Te-127	7.2671E+03	2.7536E-06	1.3057E+19	9.3857E+17
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	1.6139E+17
Te-129	1.9481E+04	9.3022E-07	4.3426E+18	2.5719E+18
Te-129m	4.1102E+03	1.3644E-04	6.3694E+20	5.3182E+17
Te-131m	1.4935E+04	1.8730E-05	8.6102E+19	1.9544E+18
Te-132	1.0947E+05	3.6058E-04	1.6451E+21	1.4226E+19
I-131	4.0967E+05	3.3045E-03	1.5191E+22	1.1965E+20
I-132	5.8016E+05	5.6206E-05	2.5642E+20	1.7014E+20
I-133	8.1478E+05	7.1925E-04	3.2567E+21	2.4465E+20
I-134	2.9827E+05	1.1181E-05	5.0248E+19	1.8820E+20
I-135	6.9164E+05	1.9695E-04	8.7854E+20	2.2187E+20
Xe-133	9.9114E+07	5.2951E-01	2.3976E+24	7.6776E+21
Xe-135	4.1427E+07	1.6222E-02	7.2365E+22	3.2270E+21
Cs-134	8.2996E+04	6.4148E-02	2.8829E+23	2.8736E+19
Cs-136	2.4749E+04	3.3769E-04	1.4953E+21	8.5868E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	2.3124E+19
Ba-139	2.7845E+04	1.7023E-06	7.3754E+18	4.6473E+18
Ba-140	5.7285E+04	7.8248E-04	3.3659E+21	7.4204E+18
La-140	7.0439E+02	1.2673E-06	5.4513E+18	7.9751E+16
La-141	4.1471E+02	7.3331E-08	3.1320E+17	5.8538E+16
La-142	2.6941E+02	1.8820E-08	7.9814E+16	4.3726E+16
Ce-141	1.3562E+03	4.7598E-05	2.0329E+20	1.7550E+17
Ce-143	1.2699E+03	1.9123E-06	8.0530E+18	1.6600E+17
Ce-144	1.0891E+03	3.4146E-04	1.4280E+21	1.4093E+17
Pr-143	5.0946E+02	7.5657E-06	3.1861E+19	6.5898E+16
Nd-147	2.1184E+02	2.6186E-06	1.0727E+19	2.7445E+16
Np-239	1.5152E+04	6.5313E-05	1.6457E+20	1.9723E+18
Pu-238	4.3973E+00	2.5686E-04	6.4992E+20	5.6897E+14
Pu-239	3.8519E-01	6.1971E-03	1.5615E+22	4.9838E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	9.3340E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	2.0118E+16
Am-241	1.0417E-01	3.0352E-05	7.5843E+19	1.3478E+13
Cm-242	2.6434E+01	7.9757E-06	1.9847E+19	3.4206E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	2.2610E+14

DW Transport Group Inventory:

Time (h) = 1.5000	Atmosphere	Sump	
Noble gases (atoms)	1.9277E+25	0.0000E+00	
Elemental I (atoms)	9.0098E+20	3.4595E+22	
Organic I (atoms)	1.0836E+21	0.0000E+00	
Aerosols (kg)	8.8768E-01	3.5140E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3398E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6739E-04
Total I (Ci)			2.7945E+06

DW to RB Transport Group Inventory:

Time (h) = 1.5000 Leakage Transport

Noble gases (atoms)	6.6893E+21
Elemental I (atoms)	1.2956E+18
Organic I (atoms)	4.5988E+17
Aerosols (kg)	1.3847E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5320E+21
Elemental I (atoms)	0.0000E+00	6.8409E+17
Organic I (atoms)	0.0000E+00	2.4282E+17
Aerosols (kg)	0.0000E+00	7.3110E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 1.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5320E+21
Elemental I (atoms)	0.0000E+00	6.8409E+17
Organic I (atoms)	0.0000E+00	2.4282E+17
Aerosols (kg)	0.0000E+00	7.3110E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.5000	Ci	kg	Atoms	Decay
Co-58	1.3266E-02	4.1721E-10	4.3319E+15	9.0521E+11
Co-60	1.5887E-02	1.4055E-08	1.4107E+17	1.0839E+12
Kr-85	3.2228E+02	8.2145E-04	5.8199E+21	1.8016E+16
Kr-85m	4.2118E+03	5.1179E-07	3.6260E+18	2.4663E+17
Kr-87	4.7066E+03	1.6616E-07	1.1502E+18	3.1183E+17
Kr-88	1.0027E+04	7.9963E-07	5.4721E+18	6.0346E+17
Rb-86	1.2259E+00	1.5067E-08	1.0550E+17	1.5859E+14
Sr-89	2.2484E+01	7.7392E-07	5.2367E+18	1.5342E+15
Sr-90	2.9588E+00	2.1691E-05	1.4514E+20	2.0186E+14
Sr-91	2.5089E+01	6.9210E-09	4.5801E+16	1.7526E+15
Sr-92	1.9876E+01	1.5813E-09	1.0351E+16	1.4750E+15
Y-90	4.7686E-02	8.7648E-11	5.8648E+14	2.7550E+12
Y-91	2.8819E-01	1.1751E-08	7.7768E+16	1.9582E+13
Y-92	2.4287E+00	2.5240E-10	1.6521E+15	1.0861E+14
Y-93	2.9075E-01	8.7146E-11	5.6430E+14	2.0282E+13
Zr-95	3.4843E-01	1.6219E-08	1.0281E+17	2.3775E+13
Zr-97	3.1741E-01	1.6604E-10	1.0308E+15	2.1944E+13
Nb-95	3.4935E-01	8.9341E-09	5.6634E+16	2.3834E+13
Mo-99	4.3927E+00	9.1589E-09	5.5713E+16	3.0071E+14
Tc-99m	3.9357E+00	7.4848E-10	4.5530E+15	2.6740E+14
Ru-103	3.8678E+00	1.1984E-07	7.0070E+17	2.6394E+14
Ru-105	2.1844E+00	3.2497E-10	1.8638E+15	1.5682E+14
Ru-106	1.6841E+00	5.0338E-07	2.8598E+18	1.1490E+14
Rh-105	2.5835E+00	3.0609E-09	1.7555E+16	1.7627E+14
Sb-127	4.3954E+00	1.6459E-08	7.8045E+16	3.0060E+14
Sb-129	1.0797E+01	1.9200E-09	8.9631E+15	7.7619E+14
Te-127	4.3905E+00	1.6636E-09	7.8887E+15	2.9871E+14
Te-127m	7.5360E-01	7.9893E-08	3.7884E+17	5.1413E+13
Te-129	1.1770E+01	5.6201E-10	2.6236E+15	8.0507E+14
Te-129m	2.4833E+00	8.2431E-08	3.8482E+17	1.6941E+14
Te-131m	9.0235E+00	1.1316E-08	5.2020E+16	6.2022E+14
Te-132	6.6139E+01	2.1785E-07	9.9390E+17	4.5252E+15
I-131	5.5750E+02	4.4969E-06	2.0672E+19	6.8728E+16
I-132	6.1814E+02	5.9884E-08	2.7321E+17	8.3616E+16
I-133	1.1093E+03	9.7926E-07	4.4340E+18	1.3905E+17
I-134	4.0609E+02	1.5223E-08	6.8413E+16	8.0672E+16
I-135	9.4167E+02	2.6814E-07	1.1961E+18	1.2288E+17
Xe-133	3.4352E+04	1.8352E-04	8.3098E+20	1.9226E+18
Xe-135	1.4083E+04	5.5146E-06	2.4600E+19	7.9601E+17
Cs-134	1.3441E+02	1.0389E-04	4.6689E+20	1.7373E+16
Cs-136	4.0082E+01	5.4689E-07	2.4216E+18	5.1871E+15
Cs-137	1.0817E+02	1.2436E-03	5.4665E+21	1.3981E+16
Ba-139	1.6823E+01	1.0285E-09	4.4560E+15	1.3586E+15
Ba-140	3.4610E+01	4.7275E-07	2.0336E+18	2.3629E+15
La-140	6.8180E-01	1.2266E-09	5.2764E+15	3.7272E+13
La-141	2.5056E-01	4.4304E-11	1.8922E+14	1.8108E+13
La-142	1.6277E-01	1.1370E-11	4.8221E+13	1.2903E+13
Ce-141	8.1924E-01	2.8752E-08	1.2280E+17	5.5899E+13
Ce-143	7.6723E-01	1.1553E-09	4.8654E+15	5.2699E+13
Ce-144	6.5798E-01	2.0630E-07	8.6274E+17	4.4892E+13
Pr-143	3.0823E-01	4.5773E-09	1.9277E+16	2.1012E+13
Nd-147	1.2799E-01	1.5820E-09	6.4812E+15	8.7391E+12
Np-239	9.1543E+00	3.9460E-08	9.9428E+16	6.2702E+14
Pu-238	2.6567E-03	1.5518E-07	3.9266E+17	1.8125E+11
Pu-239	2.3272E-04	3.7441E-06	9.4341E+18	1.5876E+10
Pu-240	4.3583E-04	1.9126E-06	4.7993E+18	2.9734E+10
Pu-241	9.3937E-02	9.1190E-07	2.2787E+18	6.4088E+12
Am-241	6.2942E-05	1.8339E-08	4.5825E+16	4.2938E+09
Cm-242	1.5970E-02	4.8186E-09	1.1991E+16	1.0896E+12
Cm-244	1.0557E-03	1.3049E-08	3.2206E+16	7.2025E+10

RB Transport Group Inventory:

```
Time (h) =   1.5000    Atmosphere     Sump
Noble gases (atoms)    6.6857E+21  0.0000E+00
Elemental I (atoms)    1.2720E+18  0.0000E+00
Organic I (atoms)      4.5559E+17  0.0000E+00
Aerosols (kg)          1.3846E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.3051E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.8656E-08
Total I (Ci)                                   3.6327E+03

DW to  RB Transport Group Inventory:
Time (h) =   1.5000  Leakage Transport

Noble gases (atoms)      6.6893E+21
Elemental I (atoms)      1.2956E+18
Organic I (atoms)        4.5988E+17
Aerosols (kg)            1.3847E-03

RB toEnvironment Transport Group Inventory:

                        Pathway
Time (h) =   1.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   1.5000       Ci           kg         Atoms      Decay
Co-58                  5.1723E-11  1.6266E-18  1.6889E+07  2.0839E+03
Co-60                  6.1942E-11  5.4797E-17  5.4999E+08  2.4954E+03
Kr-85                  3.6991E-03  9.4283E-09  6.6799E+16  1.5112E+11
Kr-85m                 4.8342E-02  5.8742E-12  4.1618E+13  2.0458E+12
Kr-87                  5.4021E-02  1.9071E-12  1.3201E+13  2.5097E+12
Kr-88                  1.1508E-01  9.1779E-12  6.2807E+13  4.9727E+12
Rb-86                  1.5129E-08  1.8593E-16  1.3020E+09  1.1805E+06
Sr-89                  8.7661E-08  3.0174E-15  2.0417E+10  3.5319E+06
Sr-90                  1.1536E-08  8.4568E-14  5.6586E+11  4.6472E+05
Sr-91                  9.7815E-08  2.6984E-17  1.7857E+08  4.0003E+06
Sr-92                  7.7493E-08  6.1652E-18  4.0356E+07  3.2930E+06
Y-90                   2.1192E-10  3.8952E-19  2.6064E+06  7.4840E+03
Y-91                   1.1280E-09  4.5997E-17  3.0440E+08  4.5273E+04
Y-92                   1.2770E-08  1.3271E-18  8.6871E+06  3.9621E+05
Y-93                   1.1336E-09  3.3976E-19  2.2001E+06  4.6317E+04
Zr-95                  1.3584E-09  6.3234E-17  4.0085E+08  5.4731E+04
Zr-97                  1.2375E-09  6.4735E-19  4.0190E+06  5.0277E+04
Nb-95                  1.3621E-09  3.4832E-17  2.2081E+08  5.4869E+04
Mo-99                  1.7126E-08  3.5709E-17  2.1721E+08  6.9143E+05
Tc-99m                 1.5345E-08  2.9182E-18  1.7751E+07  6.1498E+05
Ru-103                 1.5080E-08  4.6725E-16  2.7319E+09  6.0759E+05
Ru-105                 8.5167E-09  1.2670E-18  7.2666E+06  3.5439E+05
Ru-106                 6.5659E-09  1.9626E-15  1.1150E+10  2.6451E+05
Rh-105                 1.0073E-08  1.1934E-17  6.8444E+07  4.0567E+05
Sb-127                 1.7137E-08  6.4170E-17  3.0428E+08  6.9142E+05
Sb-129                 4.2095E-08  7.4856E-18  3.4945E+07  1.7532E+06
Te-127                 1.7118E-08  6.4862E-18  3.0757E+07  6.8725E+05
Te-127m                2.9381E-09  3.1149E-16  1.4770E+09  1.1836E+05
Te-129                 4.5888E-08  2.1912E-18  1.0229E+07  1.8308E+06
Te-129m                9.6818E-09  3.2138E-16  1.5003E+09  3.9002E+05
Te-131m                3.5181E-08  4.4119E-17  2.0282E+08  1.4240E+06
Te-132                 2.5786E-07  8.4937E-16  3.8750E+09  1.0407E+07
I-131                  4.1381E-04  3.3378E-12  1.5344E+13  3.0523E+10
I-132                  4.1611E-04  4.0313E-14  1.8392E+11  3.3888E+10
I-133                  8.2353E-04  7.2698E-13  3.2917E+12  6.1465E+10
I-134                  3.0148E-04  1.1301E-14  5.0788E+10  3.1230E+10
I-135                  6.9908E-04  1.9906E-13  8.8799E+11  5.3691E+10
Xe-133                 3.9397E-01  2.1048E-09  9.5302E+15  1.6111E+13
Xe-135                 1.5842E-01  6.2033E-11  2.7672E+14  6.5412E+12
Cs-134                 1.6588E-06  1.2820E-12  5.7617E+12  1.2935E+08
Cs-136                 4.9464E-07  6.7490E-15  2.9885E+10  3.8606E+07
Cs-137                 1.3349E-06  1.5347E-11  6.7460E+13  1.0409E+08
Ba-139                 6.5590E-08  4.0099E-18  1.7373E+07  2.9396E+06
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Ba-140                 1.3494E-07  1.8432E-15  7.9284E+09  5.4385E+06
La-140                 3.1406E-09  5.6503E-18  2.4305E+07  1.0699E+05
La-141                 9.7686E-10  1.7273E-19  7.3774E+05  4.0821E+04
La-142                 6.3460E-10  4.4331E-20  1.8800E+05  2.8112E+04
Ce-141                 3.1937E-09  1.1209E-16  4.7873E+08  1.2867E+05
Ce-143                 2.9913E-09  4.5044E-18  1.8969E+07  1.2103E+05
Ce-144                 2.5653E-09  8.0431E-16  3.3637E+09  1.0335E+05
Pr-143                 1.2026E-09  1.7858E-17  7.5206E+07  4.8408E+04
Nd-147                 4.9899E-10  6.1681E-18  2.5269E+07  2.0113E+04
Np-239                 3.5691E-08  1.5385E-16  3.8765E+08  1.4415E+06
Pu-238                 1.0358E-11  6.0503E-16  1.5309E+09  4.1727E+02
Pu-239                 9.0733E-13  1.4597E-14  3.6781E+10  3.6551E+01
Pu-240                 1.6992E-12  7.4570E-15  1.8711E+10  6.8453E+01
Pu-241                 3.6624E-10  3.5553E-15  8.8840E+09  1.4754E+04
Am-241                 2.4541E-13  7.1502E-17  1.7867E+08  9.8857E+00
Cm-242                 6.2265E-11  1.8787E-17  4.6751E+07  2.5085E+03
Cm-244                 4.1160E-12  5.0876E-17  1.2557E+08  1.6581E+02

CR Transport Group Inventory:
Time (h) =   1.5000    Atmosphere     Sump
Noble gases (atoms)    7.6723E+16  0.0000E+00
Elemental I (atoms)    1.7070E+13  0.0000E+00
Organic I (atoms)      2.3996E+12  0.0000E+00
Aerosols (kg)          1.6820E-11  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.0067E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.4903E-13
Total I (Ci)                                   2.6540E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.9052E+16
Elemental I (atoms)    0.0000E+00  2.3479E+13
Organic I (atoms)      0.0000E+00  2.8690E+12
Aerosols (kg)          0.0000E+00  2.2985E-11

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.3215E+16
Elemental I (atoms)    4.1310E+13  1.2776E+12
Organic I (atoms)      5.8844E+12  1.8199E+11
Aerosols (kg)          4.0372E-11  1.2486E-12

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.5000     Filtered   Transported
Noble gases (atoms)    1.5516E+16  0.0000E+00
Elemental I (atoms)    7.4965E+12  0.0000E+00
Organic I (atoms)      6.3432E+11  0.0000E+00
Aerosols (kg)          7.4128E-12  0.0000E+00

EAB Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3731E-02  6.1618E-02  1.5683E-02
Accumulated dose (rem)  1.9115E-02  1.1423E-01  2.2736E-02

LPZ Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5342E-03  6.8847E-03  1.7523E-03
Accumulated dose (rem)  2.1358E-03  1.2763E-02  2.5403E-03

CR Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3662E-03  1.9344E-01  9.4896E-03
Accumulated dose (rem)  4.3143E-03  3.3739E-01  1.5001E-02
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DW Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.1954E+01	6.9041E-07	7.1686E+18	4.3041E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	5.1539E+15
Kr-85	1.3592E+06	3.4645E+00	2.4546E+25	1.5095E+20
Kr-85m	1.6441E+07	1.9978E-03	1.4154E+22	1.9894E+21
Kr-87	1.5115E+07	5.3361E-04	3.6937E+21	2.3106E+21
Kr-88	3.7430E+07	2.9850E-03	2.0428E+22	4.7675E+21
Rb-86	7.5639E+02	9.2960E-06	6.5095E+19	3.1286E+17
Sr-89	3.7204E+04	1.2806E-03	8.6651E+21	7.2949E+18
Sr-90	4.8972E+03	3.5902E-02	2.4023E+23	9.5983E+17
Sr-91	4.0038E+04	1.1045E-05	7.3093E+19	8.2842E+18
Sr-92	2.8949E+04	2.3031E-06	1.5076E+19	6.8898E+18
Y-90	5.6074E+01	1.0306E-07	6.8963E+17	1.0026E+16
Y-91	4.7306E+02	1.9290E-05	1.2766E+20	9.2588E+16
Y-92	1.0497E+03	1.0909E-07	7.1409E+17	1.0861E+17
Y-93	4.6500E+02	1.3938E-07	9.0251E+17	9.5900E+16
Zr-95	5.7658E+02	2.6839E-05	1.7013E+20	1.1304E+17
Zr-97	5.1470E+02	2.6924E-07	1.6716E+18	1.0399E+17
Nb-95	5.7823E+02	1.4787E-05	9.3739E+19	1.1333E+17
Mo-99	7.2326E+03	1.5080E-05	9.1732E+19	1.4286E+18
Tc-99m	6.5089E+03	1.2378E-06	7.5298E+18	1.2719E+18
Ru-103	6.3996E+03	1.9829E-04	1.1593E+21	1.2550E+18
Ru-105	3.3441E+03	4.9749E-07	2.8533E+18	7.3686E+17
Ru-106	2.7873E+03	8.3314E-04	4.7333E+21	5.4633E+17
Rh-105	4.2684E+03	5.0571E-06	2.9004E+19	8.3794E+17
Sb-127	7.2478E+03	2.7140E-05	1.2869E+20	1.4284E+18
Sb-129	1.6493E+04	2.9329E-06	1.3692E+19	3.6462E+18
Te-127	7.2647E+03	2.7527E-06	1.3053E+19	1.4207E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.4447E+17
Te-129	1.8672E+04	8.9158E-07	4.1622E+18	3.8108E+18
Te-129m	4.1101E+03	1.3643E-04	6.3691E+20	8.0555E+17
Te-131m	1.4764E+04	1.8515E-05	8.5114E+19	2.9434E+18
Te-132	1.0899E+05	3.5899E-04	1.6378E+21	2.1501E+19
I-131	4.1769E+05	3.3692E-03	1.5488E+22	1.4726E+20
I-132	5.9069E+05	5.7225E-05	2.6108E+20	2.0957E+20
I-133	8.1826E+05	7.2233E-04	3.2706E+21	2.9914E+20
I-134	2.0512E+05	7.6891E-06	3.4556E+19	2.0481E+20
I-135	6.7019E+05	1.9084E-04	8.5130E+20	2.6731E+20
Xe-133	1.4478E+08	7.7348E-01	3.5023E+24	1.6107E+22
Xe-135	6.0150E+07	2.3554E-02	1.0507E+23	6.7491E+21
Cs-134	8.2994E+04	6.4146E-02	2.8828E+23	3.4263E+19
Cs-136	2.4722E+04	3.3731E-04	1.4936E+21	1.0234E+19
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.7573E+19
Ba-139	2.1655E+04	1.3239E-06	5.7356E+18	6.2871E+18
Ba-140	5.7220E+04	7.8160E-04	3.3621E+21	1.1233E+19
La-140	7.0403E+02	1.2666E-06	5.4485E+18	1.2012E+17
La-141	3.7971E+02	6.7141E-08	2.8676E+17	8.4975E+16
La-142	2.1517E+02	1.5031E-08	6.3745E+16	5.9795E+16
Ce-141	1.3561E+03	4.7593E-05	2.0327E+20	2.6583E+17
Ce-143	1.2566E+03	1.8923E-06	7.9689E+18	2.5014E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	2.1346E+17
Pr-143	5.0946E+02	7.5656E-06	3.1861E+19	9.9814E+16
Nd-147	2.1156E+02	2.6151E-06	1.0713E+19	4.1544E+16
Np-239	1.5059E+04	6.4914E-05	1.6356E+20	2.9783E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	8.6183E+14
Pu-239	3.8521E-01	6.1975E-03	1.5616E+22	7.5492E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.4138E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	3.0473E+16
Am-241	1.0418E-01	3.0353E-05	7.5847E+19	2.0416E+13
Cm-242	2.6431E+01	7.9749E-06	1.9846E+19	5.1810E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.4247E+14

DW Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8191E+25	0.0000E+00	
Elemental I (atoms)	8.9461E+20	4.8075E+22	
Organic I (atoms)	1.4880E+21	0.0000E+00	
Aerosols (kg)	8.8765E-01	4.8455E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3585E-04

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 1.6879E-04
Total I (Ci) 2.7020E+06

DW to RB Transport Group Inventory:
Time (h) = 2.0000 Leakage Transport

Noble gases (atoms) 1.4107E+22
Elemental I (atoms) 1.5765E+18
Organic I (atoms) 8.6220E+17
Aerosols (kg) 1.6620E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3237E+17
Organic I (atoms)	0.0000E+00	4.5524E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3237E+17
Organic I (atoms)	0.0000E+00	4.5524E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.0124E-02	6.3288E-10	6.5712E+15	2.0628E+12
Co-60	2.4105E-02	2.1324E-08	2.1403E+17	2.4704E+12
Kr-85	6.7985E+02	1.7328E-03	1.2277E+22	5.3052E+16
Kr-85m	8.2233E+03	9.9924E-07	7.0795E+18	6.8532E+17
Kr-87	7.5600E+03	2.6690E-07	1.8475E+18	7.5283E+17
Kr-88	1.8721E+04	1.4930E-06	1.0217E+19	1.6225E+18
Rb-86	1.4614E+00	1.7960E-08	1.2576E+17	2.4966E+14
Sr-89	3.4104E+01	1.1739E-06	7.9430E+18	3.4961E+15
Sr-90	4.4891E+00	3.2910E-05	2.2021E+20	4.6007E+14
Sr-91	3.6702E+01	1.0125E-08	6.7002E+16	3.9001E+15
Sr-92	2.6537E+01	2.1112E-09	1.3819E+16	3.0966E+15
Y-90	8.4673E-02	1.5563E-10	1.0414E+15	7.0885E+12
Y-91	4.3910E-01	1.7905E-08	1.1849E+17	4.4756E+13
Y-92	4.6961E+00	4.8804E-10	3.1946E+15	3.2918E+14
Y-93	4.2625E-01	1.2776E-10	8.2730E+14	4.5197E+13
Zr-95	5.2853E-01	2.4602E-08	1.5596E+17	5.4178E+13
Zr-97	4.7181E-01	2.4681E-10	1.5323E+15	4.9344E+13
Nb-95	5.3005E-01	1.3555E-08	8.5927E+16	5.4320E+13
Mo-99	6.6299E+00	1.3823E-08	8.4087E+16	6.8299E+14
Tc-99m	5.9665E+00	1.1347E-09	6.9023E+15	6.0878E+14
Ru-103	5.8663E+00	1.8177E-07	1.0627E+18	6.0142E+14
Ru-105	3.0655E+00	4.5603E-10	2.6155E+15	3.3975E+14
Ru-106	2.5551E+00	7.6371E-07	4.3388E+18	2.6186E+14
Rh-105	3.9127E+00	4.6356E-09	2.6587E+16	4.0135E+14
Sb-127	6.6439E+00	2.4879E-08	1.1797E+17	6.8341E+14
Sb-129	1.5118E+01	2.6885E-09	1.2551E+16	1.6793E+15
Te-127	6.6594E+00	2.5233E-09	1.1965E+16	6.8040E+14
Te-127m	1.1434E+00	1.2122E-07	5.7480E+17	1.1718E+14
Te-129	1.7116E+01	8.1728E-10	3.8153E+15	1.7846E+15
Te-129m	3.7676E+00	1.2506E-07	5.8384E+17	3.8611E+14
Te-131m	1.3534E+01	1.6972E-08	7.8021E+16	1.4029E+15
Te-132	9.9905E+01	3.2907E-07	1.5013E+18	1.0283E+16
I-131	6.8567E+02	5.5308E-06	2.5425E+19	1.1097E+17
I-132	7.1430E+02	6.9200E-08	3.1571E+17	1.2917E+17
I-133	1.3440E+03	1.1865E-06	5.3722E+18	2.2246E+17
I-134	3.3692E+02	1.2630E-08	5.6760E+16	1.0595E+17
I-135	1.1008E+03	3.1346E-07	1.3983E+18	1.9240E+17
Xe-133	7.2325E+04	3.8639E-04	1.7495E+21	5.6534E+18
Xe-135	2.9189E+04	1.1430E-05	5.0987E+19	2.3148E+18
Cs-134	1.6035E+02	1.2393E-04	5.5697E+20	2.7362E+16

Cs-136	4.7764E+01	6.5170E-07	2.8857E+18	8.1639E+15
Cs-137	1.2904E+02	1.4836E-03	6.5213E+21	2.2019E+16
Ba-139	1.9850E+01	1.2136E-09	5.2577E+15	2.6464E+15
Ba-140	5.2451E+01	7.1646E-07	3.0819E+18	5.3814E+15
La-140	1.2619E+00	2.2703E-09	9.7658E+15	9.9928E+13
La-141	3.4806E-01	6.1546E-11	2.6286E+14	3.8979E+13
La-142	1.9724E-01	1.3778E-11	5.8433E+13	2.5534E+13
Ce-141	1.2427E+00	4.3614E-08	1.8628E+17	1.2738E+14
Ce-143	1.1519E+00	1.7346E-09	7.3048E+15	1.1928E+14
Ce-144	9.9827E-01	3.1299E-07	1.3089E+18	1.0231E+14
Pr-143	4.6804E-01	6.9505E-09	2.9271E+16	4.7913E+13
Nd-147	1.9393E-01	2.3972E-09	9.8206E+15	1.9900E+13
Np-239	1.3804E+01	5.9504E-08	1.4993E+17	1.4233E+15
Pu-238	4.0308E-03	2.3545E-07	5.9576E+17	4.1310E+11
Pu-239	3.5311E-04	5.6810E-06	1.4315E+19	3.6186E+10
Pu-240	6.6126E-04	2.9019E-06	7.2816E+18	6.7768E+10
Pu-241	1.4252E-01	1.3836E-06	3.4573E+18	1.4607E+13
Am-241	9.5507E-05	2.7827E-08	6.9535E+16	9.7869E+09
Cm-242	2.4229E-02	7.3104E-09	1.8192E+16	2.4833E+12
Cm-244	1.6018E-03	1.9799E-08	4.8865E+16	1.6415E+11

RB Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	1.4097E+22	0.0000E+00	
Elemental I (atoms)	1.5405E+18	0.0000E+00	
Organic I (atoms)	8.5205E+17	0.0000E+00	
Aerosols (kg)	1.6619E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8188E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.4808E-08
Total I (Ci)			4.1818E+03

DW to RB Transport Group Inventory:

Time (h) = 2.0000	Leakage Transport
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5765E+18
Organic I (atoms)	8.6220E+17
Aerosols (kg)	1.6620E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.5654E-10	4.9229E-18	5.1115E+07	9.3677E+03
Co-60	1.8750E-10	1.6587E-16	1.6649E+09	1.1219E+04
Kr-85	1.3837E-02	3.5268E-08	2.4987E+17	7.5211E+11
Kr-85m	1.6737E-01	2.0337E-11	1.4409E+14	9.5469E+12
Kr-87	1.5387E-01	5.4321E-12	3.7601E+13	9.9888E+12
Kr-88	3.8103E-01	3.0387E-11	2.0795E+14	2.2365E+13
Rb-86	2.5877E-08	3.1802E-16	2.2270E+09	2.6038E+06
Sr-89	2.6528E-07	9.1312E-15	6.1786E+10	1.5876E+07
Sr-90	3.4919E-08	2.5599E-13	1.7129E+12	2.0894E+06
Sr-91	2.8549E-07	7.8756E-17	5.2118E+08	1.7488E+07
Sr-92	2.0642E-07	1.6422E-17	1.0750E+08	1.3431E+07
Y-90	7.7696E-10	1.4281E-18	9.5556E+06	3.9897E+04
Y-91	3.4354E-09	1.4009E-16	9.2705E+08	2.0453E+05
Y-92	5.0024E-08	5.1987E-18	3.4030E+07	2.3882E+06
Y-93	3.3156E-09	9.9380E-19	6.4353E+06	2.0282E+05
Zr-95	4.1112E-09	1.9137E-16	1.2131E+09	2.4603E+05
Zr-97	3.6700E-09	1.9198E-18	1.1919E+07	2.2251E+05
Nb-95	4.1230E-09	1.0544E-16	6.6839E+08	2.4669E+05
Mo-99	5.1571E-08	1.0753E-16	6.5408E+08	3.0962E+06
Tc-99m	4.6411E-08	8.8263E-18	5.3690E+07	2.7629E+06
Ru-103	4.5631E-08	1.4139E-15	8.2666E+09	2.7310E+06

Ru-105	2.3845E-08	3.5473E-18	2.0345E+07	1.5009E+06
Ru-106	1.9875E-08	5.9406E-15	3.3750E+10	1.1892E+06
Rh-105	3.0436E-08	3.6059E-17	2.0681E+08	1.8218E+06
Sb-127	5.1680E-08	1.9352E-16	9.1764E+08	3.0997E+06
Sb-129	1.1760E-07	2.0913E-17	9.7627E+07	7.4130E+06
Te-127	5.1800E-08	1.9628E-17	9.3073E+07	3.0889E+06
Te-127m	8.8941E-09	9.4291E-16	4.4711E+09	5.3217E+05
Te-129	1.3314E-07	6.3573E-18	2.9678E+07	7.9813E+06
Te-129m	2.9307E-08	9.7282E-16	4.5414E+09	1.7535E+06
Te-131m	1.0527E-07	1.3202E-16	6.0689E+08	6.3457E+06
Te-132	7.7712E-07	2.5597E-15	1.1678E+10	4.6631E+07
I-131	7.8518E-04	6.3334E-12	2.9115E+13	7.2120E+10
I-132	7.1135E-04	6.8915E-14	3.1441E+11	7.3547E+10
I-133	1.5394E-03	1.3590E-12	6.1533E+12	1.4357E+11
I-134	3.8591E-04	1.4466E-14	6.5012E+10	5.5797E+10
I-135	1.2609E-03	3.5904E-13	1.6016E+12	1.2204E+11
Xe-133	1.4705E+00	7.8562E-09	3.5572E+16	8.0042E+13
Xe-135	5.7922E-01	2.2681E-10	1.0118E+15	3.1972E+13
Cs-134	2.8393E-06	2.1945E-12	9.8624E+12	2.8547E+08
Cs-136	8.4577E-07	1.1540E-14	5.1099E+10	8.5132E+07
Cs-137	2.2850E-06	2.6270E-11	1.1547E+14	2.2973E+08
Ba-139	1.5441E-07	9.4397E-18	4.0897E+07	1.0941E+07
Ba-140	4.0800E-07	5.5731E-15	2.3973E+10	2.4430E+07
La-140	1.2006E-08	2.1600E-17	9.2913E+07	5.9656E+05
La-141	2.7074E-09	4.7874E-19	2.0447E+06	1.7157E+05
La-142	1.5342E-09	1.0718E-19	4.5453E+05	1.0669E+05
Ce-141	9.6653E-09	3.3921E-16	1.4488E+09	5.7841E+05
Ce-143	8.9602E-09	1.3493E-17	5.6821E+07	5.3975E+05
Ce-144	7.7651E-09	2.4346E-15	1.0182E+10	4.6464E+05
Pr-143	3.6444E-09	5.4120E-17	2.2792E+08	2.1784E+05
Nd-147	1.5085E-09	1.8647E-17	7.6390E+07	9.0337E+04
Np-239	1.0738E-07	4.6286E-16	1.1663E+09	6.4503E+06
Pu-238	3.1354E-11	1.8315E-15	4.6342E+09	1.8761E+03
Pu-239	2.7467E-12	4.4191E-14	1.1135E+11	1.6434E+02
Pu-240	5.1437E-12	2.2573E-14	5.6641E+10	3.0777E+02
Pu-241	1.1086E-09	1.0762E-14	2.6893E+10	6.6336E+04
Am-241	7.4295E-13	2.1647E-16	5.4091E+08	4.4451E+01
Cm-242	1.8847E-10	5.6864E-17	1.4151E+08	1.1277E+04
Cm-244	1.2459E-11	1.5401E-16	3.8010E+08	7.4551E+02

CR Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8684E+17	0.0000E+00	
Elemental I (atoms)	2.9620E+13	0.0000E+00	
Organic I (atoms)	7.1278E+12	0.0000E+00	
Aerosols (kg)	2.8953E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7851E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6636E-13
Total I (Ci)			4.6828E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1340E+17
Elemental I (atoms)	0.0000E+00	4.3785E+13
Organic I (atoms)	0.0000E+00	8.9519E+12
Aerosols (kg)	0.0000E+00	4.2538E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5299E+17
Elemental I (atoms)	8.5627E+13	2.6482E+12
Organic I (atoms)	1.9160E+13	5.9259E+11
Aerosols (kg)	8.3046E-11	2.5684E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported

Noble gases (atoms)	7.9405E+16	0.0000E+00
Elemental I (atoms)	1.6413E+13	0.0000E+00
Organic I (atoms)	2.3572E+12	0.0000E+00
Aerosols (kg)	1.6152E-11	0.0000E+00

EAB Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.4448E-03	9.1791E-03	2.7353E-03
Accumulated dose (rem)	2.1560E-02	1.2341E-01	2.5471E-02

LPZ Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.7316E-04	1.0256E-03	3.0562E-04
Accumulated dose (rem)	2.4089E-03	1.3789E-02	2.8459E-03

CR Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.1212E-03	5.1714E-02	2.7573E-03
Accumulated dose (rem)	5.4355E-03	3.8910E-01	1.7758E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.0928E+00	3.4368E-08	3.5684E+17	4.3186E+15
Co-60	1.3091E+00	1.1581E-06	1.1623E+19	5.1714E+15
Kr-85	1.3591E+06	3.4642E+00	2.4543E+25	1.6905E+20
Kr-85m	1.6187E+07	1.9669E-03	1.3936E+22	2.2067E+21
Kr-87	1.4312E+07	5.0526E-04	3.4974E+21	2.5065E+21
Kr-88	3.6524E+07	2.9128E-03	1.9933E+22	5.2599E+21
Rb-86	3.7648E+01	4.6269E-07	3.2400E+18	3.1336E+17
Sr-89	1.8520E+03	6.3746E-05	4.3133E+20	7.3195E+18
Sr-90	2.4379E+02	1.7872E-03	1.1959E+22	9.6308E+17
Sr-91	1.9787E+03	5.4584E-07	3.6122E+18	8.3106E+18
Sr-92	1.4047E+03	1.1176E-07	7.3154E+17	6.9087E+18
Y-90	3.0524E+00	5.6104E-09	3.7541E+16	1.0064E+16
Y-91	2.3590E+01	9.6191E-07	6.3656E+18	9.2902E+16
Y-92	7.9102E+01	8.2207E-09	5.3811E+16	1.0930E+17
Y-93	2.2990E+01	6.8908E-09	4.4621E+16	9.6207E+16
Zr-95	2.8701E+01	1.3360E-06	8.4691E+18	1.1342E+17
Zr-97	2.5518E+01	1.3348E-08	8.2871E+16	1.0433E+17
Nb-95	2.8785E+01	7.3613E-07	4.6664E+18	1.1371E+17
Mo-99	3.5967E+02	7.4991E-07	4.5617E+18	1.4334E+18
Tc-99m	3.2396E+02	6.1609E-08	3.7477E+17	1.2762E+18
Ru-103	3.1855E+02	9.8703E-06	5.7709E+19	1.2592E+18
Ru-105	1.6390E+02	2.4382E-08	1.3984E+17	7.3906E+17
Ru-106	1.3876E+02	4.1474E-05	2.3563E+20	5.4818E+17
Rh-105	2.1239E+02	2.5164E-07	1.4432E+18	8.4077E+17
Sb-127	3.6054E+02	1.3501E-06	6.4017E+18	1.4332E+18
Sb-129	8.0796E+02	1.4368E-07	6.7074E+17	3.6570E+18
Te-127	3.6162E+02	1.3702E-07	6.4974E+17	1.4255E+18
Te-127m	6.2094E+01	6.5830E-06	3.1215E+19	2.4529E+17
Te-129	9.2100E+02	4.3978E-08	2.0530E+17	3.8228E+18
Te-129m	2.0460E+02	6.7917E-06	3.1706E+19	8.0827E+17
Te-131m	7.3326E+02	9.1956E-07	4.2273E+18	2.9532E+18
Te-132	5.4207E+03	1.7855E-05	8.1459E+19	2.1573E+19
I-131	5.0440E+04	4.0686E-04	1.8704E+21	1.4793E+20
I-132	6.9402E+04	6.7236E-06	3.0674E+19	2.1050E+20
I-133	9.8518E+04	8.6968E-05	3.9379E+20	3.0046E+20
I-134	2.2895E+04	8.5824E-07	3.8571E+18	2.0512E+20
I-135	8.0116E+04	2.2813E-05	1.0177E+20	2.6838E+20
Xe-133	1.4469E+08	7.7298E-01	3.5000E+24	1.8034E+22
Xe-135	5.9688E+07	2.3373E-02	1.0426E+23	7.5472E+21
Cs-134	4.1315E+03	3.1933E-03	1.4351E+22	3.4318E+19
Cs-136	1.2304E+03	1.6788E-05	7.4338E+19	1.0251E+19
Cs-137	3.3249E+03	3.8226E-02	1.6803E+23	2.7617E+19
Ba-139	1.0251E+03	6.2672E-08	2.7152E+17	6.3011E+18
Ba-140	2.8478E+03	3.8900E-05	1.6733E+20	1.1271E+19
La-140	3.9889E+01	7.1765E-08	3.0870E+17	1.2059E+17
La-141	1.8572E+01	3.2839E-09	1.4026E+16	8.5225E+16

La-142	1.0240E+01	7.1536E-10	3.0338E+15	5.9934E+16
Ce-141	6.7503E+01	2.3691E-06	1.0118E+19	2.6672E+17
Ce-143	6.2425E+01	9.4002E-08	3.9587E+17	2.5097E+17
Ce-144	5.4212E+01	1.6997E-05	7.1082E+19	2.1418E+17
Pr-143	2.5369E+01	3.7674E-07	1.5866E+18	1.0015E+17
Nd-147	1.0529E+01	1.3015E-07	5.3318E+17	4.1685E+16
Np-239	7.4875E+02	3.2275E-06	8.1324E+18	2.9883E+18
Pu-238	2.1890E-01	1.2787E-05	3.2354E+19	8.6475E+14
Pu-239	1.9177E-02	3.0852E-04	7.7739E+20	7.5747E+13
Pu-240	3.5911E-02	1.5759E-04	3.9544E+20	1.4186E+14
Pu-241	7.7400E+00	7.5136E-05	1.8775E+20	3.0576E+16
Am-241	5.1862E-03	1.5111E-06	3.7759E+18	2.0485E+13
Cm-242	1.3158E+00	3.9699E-07	9.8792E+17	5.1986E+15
Cm-244	8.6986E-02	1.0752E-06	2.6537E+18	3.4363E+14

DW Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	2.8185E+25	0.0000E+00	
Elemental I (atoms)	4.4456E+19	4.8566E+22	
Organic I (atoms)	1.4852E+21	0.0000E+00	
Aerosols (kg)	4.4188E-02	4.8943E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.6385E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.0325E-05
Total I (Ci)			3.2137E+05

DW to RB Transport Group Inventory:

Time (h) = 2.1000	Leakage Transport
Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5520E+17
Aerosols (kg)	1.6722E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3550E+17
Organic I (atoms)	0.0000E+00	4.8369E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3550E+17
Organic I (atoms)	0.0000E+00	4.8369E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	2.0558E-02	6.4652E-10	6.7128E+15	2.3367E+12
Co-60	2.4625E-02	2.1785E-08	2.1865E+17	2.7984E+12
Kr-85	7.6480E+02	1.9494E-03	1.3811E+22	6.3239E+16
Kr-85m	9.1088E+03	1.1068E-06	7.8418E+18	8.0759E+17
Kr-87	8.0535E+03	2.8432E-07	1.9680E+18	8.6308E+17
Kr-88	2.0553E+04	1.6391E-06	1.1217E+19	1.8997E+18
Rb-86	1.4761E+00	1.8141E-08	1.2703E+17	2.6932E+14
Sr-89	3.4838E+01	1.1992E-06	8.1141E+18	3.9602E+15
Sr-90	4.5861E+00	3.3621E-05	2.2496E+20	5.2115E+14
Sr-91	3.7222E+01	1.0268E-08	6.7952E+16	4.3977E+15
Sr-92	2.6425E+01	2.1023E-09	1.3761E+16	3.4531E+15
Y-90	9.0657E-02	1.6663E-10	1.1150E+15	8.2305E+12
Y-91	4.4922E-01	1.8318E-08	1.2122E+17	5.0729E+13
Y-92	5.1495E+00	5.3516E-10	3.5030E+15	3.9139E+14
Y-93	4.3248E-01	1.2963E-10	8.3939E+14	5.0978E+13
Zr-95	5.3992E-01	2.5132E-08	1.5932E+17	6.1370E+13
Zr-97	4.8003E-01	2.5110E-10	1.5589E+15	5.5751E+13
Nb-95	5.4149E-01	1.3848E-08	8.7783E+16	6.1532E+13

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Mo-99                  6.7660E+00  1.4107E-08  8.5813E+16  7.7316E+14
Tc-99m                 6.0941E+00  1.1590E-09  7.0500E+15  6.8950E+14
Ru-103                 5.9925E+00  1.8568E-07  1.0856E+18  6.8124E+14
Ru-105                 3.0831E+00  4.5866E-10  2.6306E+15  3.8114E+14
Ru-106                 2.6102E+00  7.8020E-07  4.4325E+18  2.9663E+14
Rh-105                 3.9955E+00  4.7337E-09  2.7149E+16  4.5454E+14
Sb-127                 6.7823E+00  2.5397E-08  1.2043E+17  7.7379E+14
Sb-129                 1.5199E+01  2.7028E-09  1.2618E+16  1.8834E+15
Te-127                 6.8026E+00  2.5776E-09  1.2223E+16  7.7068E+14
Te-127m                1.1681E+00  1.2384E-07  5.8721E+17  1.3274E+14
Te-129                 1.7326E+01  8.2730E-10  3.8621E+15  2.0107E+15
Te-129m                3.8489E+00  1.2776E-07  5.9644E+17  4.3738E+14
Te-131m                1.3794E+01  1.7298E-08  7.9522E+16  1.5868E+15
Te-132                 1.0197E+02  3.3588E-07  1.5324E+18  1.1642E+16
I-131                  6.9503E+02  5.6062E-06  2.5772E+19  1.2023E+17
I-132                  7.0934E+02  6.8720E-08  3.1352E+17  1.3872E+17
I-133                  1.3583E+03  1.1991E-06  5.4293E+18  2.4059E+17
I-134                  3.1567E+02  1.1833E-08  5.3179E+16  1.1032E+17
I-135                  1.1046E+03  3.1453E-07  1.4031E+18  2.0719E+17
Xe-133                 8.1329E+04  4.3449E-04  1.9674E+21  6.7369E+18
Xe-135                 3.2705E+04  1.2807E-05  5.7129E+19  2.7520E+18
Cs-134                 1.6199E+02  1.2520E-04  5.6267E+20  2.9519E+16
Cs-136                 4.8242E+01  6.5823E-07  2.9147E+18  8.8066E+15
Cs-137                 1.3036E+02  1.4988E-03  6.5881E+21  2.3756E+16
Ba-139                 1.9284E+01  1.1790E-09  5.1078E+15  2.9098E+15
Ba-140                 5.3572E+01  7.3177E-07  3.1477E+18  6.0951E+15
La-140                 1.3659E+00  2.4573E-09  1.0570E+16  1.1691E+14
La-141                 3.4936E-01  6.1776E-11  2.6385E+14  4.3673E+13
La-142                 1.9264E-01  1.3457E-11  5.7070E+13  2.8159E+13
Ce-141                 1.2695E+00  4.4553E-08  1.9029E+17  1.4429E+14
Ce-143                 1.1743E+00  1.7683E-09  7.4469E+15  1.3494E+14
Ce-144                 1.0198E+00  3.1974E-07  1.3372E+18  1.1590E+14
Pr-143                 4.7827E-01  7.1025E-09  2.9911E+16  5.4281E+13
Nd-147                 1.9807E-01  2.4483E-09  1.0030E+16  2.2539E+13
Np-239                 1.4085E+01  6.0715E-08  1.5298E+17  1.6110E+15
Pu-238                 4.1179E-03  2.4054E-07  6.0863E+17  4.6795E+11
Pu-239                 3.6074E-04  5.8038E-06  1.4624E+19  4.0991E+10
Pu-240                 6.7554E-04  2.9646E-06  7.4389E+18  7.6767E+10
Pu-241                 1.4560E-01  1.4134E-06  3.5319E+18  1.6546E+13
Am-241                 9.7572E-05  2.8429E-08  7.1038E+16  1.1087E+10
Cm-242                 2.4752E-02  7.4681E-09  1.8584E+16  2.8130E+12
Cm-244                 1.6363E-03  2.0226E-08  4.9920E+16  1.8595E+11

RB Transport Group Inventory:
Time (h) =   2.1000    Atmosphere     Sump
Noble gases (atoms)    1.5856E+22  0.0000E+00
Elemental I (atoms)    1.5557E+18  0.0000E+00
Organic I (atoms)      9.4348E+17  0.0000E+00
Aerosols (kg)          1.6795E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.8539E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.5194E-08
Total I (Ci)                                   4.1829E+03

DW to  RB Transport Group Inventory:
Time (h) =   2.1000  Leakage Transport

Noble gases (atoms)      1.5869E+22
Elemental I (atoms)      1.5867E+18
Organic I (atoms)        9.5520E+17
Aerosols (kg)            1.6722E-03

RB toEnvironment Transport Group Inventory:

                        Pathway
Time (h) =   2.1000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:
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Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.6179E-10	5.0880E-18	5.2829E+07	1.1523E+04
Co-60	1.9380E-10	1.7144E-16	1.7208E+09	1.3801E+04
Kr-85	1.4594E-02	3.7197E-08	2.6354E+17	9.4650E+11
Kr-85m	1.7381E-01	2.1121E-11	1.4964E+14	1.1880E+13
Kr-87	1.5368E-01	5.4253E-12	3.7554E+13	1.2093E+13
Kr-88	3.9218E-01	3.1276E-11	2.1404E+14	2.7653E+13
Rb-86	2.5790E-08	3.1695E-16	2.2194E+09	2.9473E+06
Sr-89	2.7417E-07	9.4373E-15	6.3857E+10	1.9528E+07
Sr-90	3.6092E-08	2.6459E-13	1.7704E+12	2.5701E+06
Sr-91	2.9293E-07	8.0808E-17	5.3477E+08	2.1404E+07
Sr-92	2.0796E-07	1.6545E-17	1.0830E+08	1.6237E+07
Y-90	8.3647E-10	1.5374E-18	1.0287E+07	5.0524E+04
Y-91	3.5559E-09	1.4500E-16	9.5956E+08	2.5182E+05
Y-92	5.4285E-08	5.6416E-18	3.6929E+07	3.0629E+06
Y-93	3.4035E-09	1.0201E-18	6.6059E+06	2.4831E+05
Zr-95	4.2491E-09	1.9779E-16	1.2538E+09	3.0263E+05
Zr-97	3.7777E-09	1.9761E-18	1.2269E+07	2.7293E+05
Nb-95	4.2615E-09	1.0898E-16	6.9084E+08	3.0345E+05
Mo-99	5.3247E-08	1.1102E-16	6.7534E+08	3.8058E+06
Tc-99m	4.7960E-08	9.1209E-18	5.5482E+07	3.3982E+06
Ru-103	4.7160E-08	1.4612E-15	8.5435E+09	3.3592E+06
Ru-105	2.4264E-08	3.6096E-18	2.0702E+07	1.8267E+06
Ru-106	2.0542E-08	6.1400E-15	3.4883E+10	1.4629E+06
Rh-105	3.1444E-08	3.7253E-17	2.1366E+08	2.2404E+06
Sb-127	5.3375E-08	1.9987E-16	9.4774E+08	3.8109E+06
Sb-129	1.1961E-07	2.1271E-17	9.9299E+07	9.0191E+06
Te-127	5.3536E-08	2.0286E-17	9.6191E+07	3.7994E+06
Te-127m	9.1927E-09	9.7457E-16	4.6213E+09	6.5461E+05
Te-129	1.3635E-07	6.5107E-18	3.0394E+07	9.7605E+06
Te-129m	3.0290E-08	1.0055E-15	4.6939E+09	2.1570E+06
Te-131m	1.0856E-07	1.3614E-16	6.2582E+08	7.7934E+06
Te-132	8.0250E-07	2.6433E-15	1.2060E+10	5.7325E+07
I-131	7.9005E-04	6.3726E-12	2.9295E+13	8.2646E+10
I-132	6.9793E-04	6.7615E-14	3.0847E+11	8.2984E+10
I-133	1.5444E-03	1.3633E-12	6.1730E+12	1.6418E+11
I-134	3.5891E-04	1.3454E-14	6.0463E+10	6.0771E+10
I-135	1.2559E-03	3.5762E-13	1.5953E+12	1.3886E+11
Xe-133	1.5502E+00	8.2818E-09	3.7499E+16	1.0070E+14
Xe-135	6.0708E-01	2.3772E-10	1.0604E+15	4.0089E+13
Cs-134	2.8302E-06	2.1874E-12	9.8306E+12	3.2316E+08
Cs-136	8.4286E-07	1.1500E-14	5.0923E+10	9.6360E+07
Cs-137	2.2776E-06	2.6185E-11	1.1510E+14	2.6007E+08
Ba-139	1.5176E-07	9.2782E-18	4.0198E+07	1.3014E+07
Ba-140	4.2160E-07	5.7589E-15	2.4772E+10	3.0047E+07
La-140	1.3025E-08	2.3433E-17	1.0080E+08	7.6052E+05
La-141	2.7494E-09	4.8617E-19	2.0764E+06	2.0851E+05
La-142	1.5160E-09	1.0590E-19	4.4914E+05	1.2735E+05
Ce-141	9.9892E-09	3.5058E-16	1.4973E+09	7.1147E+05
Ce-143	9.2417E-09	1.3916E-17	5.8606E+07	6.6298E+05
Ce-144	8.0258E-09	2.5163E-15	1.0523E+10	5.7155E+05
Pr-143	3.7678E-09	5.5953E-17	2.3563E+08	2.6800E+05
Nd-147	1.5587E-09	1.9268E-17	7.8935E+07	1.1110E+05
Np-239	1.1085E-07	4.7781E-16	1.2040E+09	7.9277E+06
Pu-238	3.2407E-11	1.8930E-15	4.7898E+09	2.3077E+03
Pu-239	2.8390E-12	4.5675E-14	1.1509E+11	2.0216E+02
Pu-240	5.3164E-12	2.3331E-14	5.8543E+10	3.7858E+02
Pu-241	1.1459E-09	1.1124E-14	2.7796E+10	8.1598E+04
Am-241	7.6792E-13	2.2374E-16	5.5909E+08	5.4679E+01
Cm-242	1.9479E-10	5.8773E-17	1.4626E+08	1.3872E+04
Cm-244	1.2878E-11	1.5918E-16	3.9286E+08	9.1704E+02

CR Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	3.0250E+17	0.0000E+00	
Elemental I (atoms)	2.9530E+13	0.0000E+00	
Organic I (atoms)	7.4019E+12	0.0000E+00	
Aerosols (kg)	2.8873E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8042E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6805E-13
Total I (Ci)			4.6472E-03

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2522E+17
Elemental I (atoms)	0.0000E+00	4.5888E+13
Organic I (atoms)	0.0000E+00	9.7459E+12
Aerosols (kg)	0.0000E+00	4.4555E-11

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.7960E+17
Elemental I (atoms)	9.0217E+13	2.7902E+12
Organic I (atoms)	2.0893E+13	6.4619E+11
Aerosols (kg)	8.7447E-11	2.7046E-12

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	1.0215E+17	0.0000E+00
Elemental I (atoms)	1.8698E+13	0.0000E+00
Organic I (atoms)	2.9184E+12	0.0000E+00
Aerosols (kg)	1.8384E-11	0.0000E+00

EAB Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.4472E-03	1.9727E-02	6.0713E-03
Accumulated dose (rem)	2.7007E-02	1.4314E-01	3.1542E-02

LPZ Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.0862E-04	2.2042E-03	6.7835E-04
Accumulated dose (rem)	3.0176E-03	1.5993E-02	3.5243E-03

CR Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.3576E-03	1.0467E-01	5.6677E-03
Accumulated dose (rem)	7.7931E-03	4.9377E-01	2.3426E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	5.9959E-01	1.8856E-08	1.9578E+17	4.3374E+15
Co-60	7.1828E-01	6.3543E-07	6.3777E+18	5.1938E+15
Kr-85	1.3588E+06	3.4635E+00	2.4538E+25	2.0526E+20
Kr-85m	1.5691E+07	1.9066E-03	1.3508E+22	2.6313E+21
Kr-87	1.2831E+07	4.5298E-04	3.1355E+21	2.8677E+21
Kr-88	3.4777E+07	2.7734E-03	1.8980E+22	6.2094E+21
Rb-86	2.0651E+01	2.5380E-07	1.7772E+18	3.1401E+17
Sr-89	1.0161E+03	3.4974E-05	2.3665E+20	7.3513E+18
Sr-90	1.3377E+02	9.8065E-04	6.5618E+21	9.6726E+17
Sr-91	1.0700E+03	2.9516E-07	1.9533E+18	8.3444E+18
Sr-92	7.3233E+02	5.8263E-08	3.8138E+17	6.9323E+18
Y-90	1.9608E+00	3.6041E-09	2.4116E+16	1.0118E+16
Y-91	1.2987E+01	5.2957E-07	3.5045E+18	9.3307E+16
Y-92	7.0873E+01	7.3654E-09	4.8213E+16	1.1083E+17
Y-93	1.2443E+01	3.7294E-09	2.4150E+16	9.6599E+16
Zr-95	1.5747E+01	7.3300E-07	4.6466E+18	1.1392E+17
Zr-97	1.3887E+01	7.2644E-09	4.5100E+16	1.0476E+17
Nb-95	1.5794E+01	4.0392E-07	2.5605E+18	1.1421E+17
Mo-99	1.9694E+02	4.1062E-07	2.4978E+18	1.4395E+18
Tc-99m	1.7768E+02	3.3791E-08	2.0555E+17	1.2817E+18
Ru-103	1.7477E+02	5.4151E-06	3.1660E+19	1.2647E+18
Ru-105	8.7165E+01	1.2967E-08	7.4371E+16	7.4184E+17
Ru-106	7.6134E+01	2.2757E-05	1.2929E+20	5.5056E+17
Rh-105	1.1643E+02	1.3794E-07	7.9116E+17	8.4441E+17

Sb-127	1.9753E+02	7.3967E-07	3.5074E+18	1.4394E+18
Sb-129	4.2933E+02	7.6347E-08	3.5641E+17	3.6707E+18
Te-127	1.9839E+02	7.5173E-08	3.5646E+17	1.4317E+18
Te-127m	3.4071E+01	3.6121E-06	1.7128E+19	2.4636E+17
Te-129	4.9587E+02	2.3678E-08	1.1054E+17	3.8381E+18
Te-129m	1.1226E+02	3.7265E-06	1.7397E+19	8.1179E+17
Te-131m	4.0049E+02	5.0224E-07	2.3088E+18	2.9657E+18
Te-132	2.9691E+03	9.7797E-06	4.4617E+19	2.1666E+19
I-131	4.2146E+04	3.3996E-04	1.5628E+21	1.4910E+20
I-132	5.4834E+04	5.3123E-06	2.4236E+19	2.1207E+20
I-133	8.1830E+04	7.2236E-05	3.2708E+20	3.0274E+20
I-134	1.6344E+04	6.1266E-07	2.7534E+18	2.0562E+20
I-135	6.5599E+04	1.8679E-05	8.3326E+19	2.7022E+20
Xe-133	1.4450E+08	7.7197E-01	3.4954E+24	2.1886E+22
Xe-135	5.8773E+07	2.3015E-02	1.0267E+23	9.1250E+21
Cs-134	2.2670E+03	1.7521E-03	7.8743E+21	3.4389E+19
Cs-136	6.7483E+02	9.2076E-06	4.0772E+19	1.0272E+19
Cs-137	1.8244E+03	2.0974E-02	9.2198E+22	2.7674E+19
Ba-139	5.0866E+02	3.1098E-08	1.3473E+17	6.3179E+18
Ba-140	1.5619E+03	2.1335E-05	9.1772E+19	1.1320E+19
La-140	2.7185E+01	4.8909E-08	2.1038E+17	1.2131E+17
La-141	9.8371E+00	1.7394E-09	7.4291E+15	8.5538E+16
La-142	5.1357E+00	3.5876E-10	1.5215E+15	6.0103E+16
Ce-141	3.7034E+01	1.2997E-06	5.5512E+18	2.6788E+17
Ce-143	3.4109E+01	5.1363E-08	2.1630E+17	2.5204E+17
Ce-144	2.9746E+01	9.3261E-06	3.9002E+19	2.1511E+17
Pr-143	1.3929E+01	2.0685E-07	8.7109E+17	1.0059E+17
Nd-147	5.7742E+00	7.1375E-08	2.9240E+17	4.1866E+16
Np-239	4.0984E+02	1.7666E-06	4.4513E+18	3.0012E+18
Pu-238	1.2011E-01	7.0160E-06	1.7753E+19	8.6851E+14
Pu-239	1.0523E-02	1.6929E-04	4.2657E+20	7.6077E+13
Pu-240	1.9704E-02	8.6473E-05	2.1698E+20	1.4248E+14
Pu-241	4.2469E+00	4.1227E-05	1.0302E+20	3.0709E+16
Am-241	2.8458E-03	8.2917E-07	2.0719E+18	2.0574E+13
Cm-242	7.2193E-01	2.1782E-07	5.4205E+17	5.2212E+15
Cm-244	4.7729E-02	5.8996E-07	1.4561E+18	3.4513E+14

DW Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	2.8172E+25	0.0000E+00	
Elemental I (atoms)	4.4293E+19	4.8566E+22	
Organic I (atoms)	1.4797E+21	0.0000E+00	
Aerosols (kg)	2.4245E-02	4.8963E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3657E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6888E-05
Total I (Ci)			2.6075E+05

DW to RB Transport Group Inventory:

Time (h) = 2.3000 Leakage Transport

Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5922E+18
Organic I (atoms)	1.1407E+18
Aerosols (kg)	1.6764E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3720E+17
Organic I (atoms)	0.0000E+00	5.4043E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3720E+17
Organic I (atoms)	0.0000E+00	5.4043E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	2.0659E-02	6.4970E-10	6.7458E+15	2.8865E+12
Co-60	2.4748E-02	2.1894E-08	2.1975E+17	3.4570E+12
Kr-85	9.3467E+02	2.3823E-03	1.6879E+22	8.7008E+16
Kr-85m	1.0793E+04	1.3115E-06	9.2916E+18	1.0862E+18
Kr-87	8.8257E+03	3.1158E-07	2.1568E+18	1.0999E+18
Kr-88	2.3921E+04	1.9077E-06	1.3055E+19	2.5227E+18
Rb-86	1.4792E+00	1.8179E-08	1.2730E+17	3.0871E+14
Sr-89	3.5009E+01	1.2050E-06	8.1537E+18	4.8919E+15
Sr-90	4.6090E+00	3.3789E-05	2.2609E+20	6.4381E+14
Sr-91	3.6866E+01	1.0170E-08	6.7302E+16	5.3860E+15
Sr-92	2.5233E+01	2.0075E-09	1.3140E+16	4.1421E+15
Y-90	1.0073E-01	1.8514E-10	1.2388E+15	1.0715E+13
Y-91	4.5293E-01	1.8469E-08	1.2222E+17	6.2753E+13
Y-92	5.9627E+00	6.1968E-10	4.0563E+15	5.3285E+14
Y-93	4.2871E-01	1.2850E-10	8.3208E+14	6.2465E+13
Zr-95	5.4257E-01	2.5256E-08	1.6010E+17	7.5809E+13
Zr-97	4.7848E-01	2.5030E-10	1.5539E+15	6.8537E+13
Nb-95	5.4420E-01	1.3917E-08	8.8221E+16	7.6014E+13
Mo-99	6.7855E+00	1.4148E-08	8.6061E+16	9.5392E+14
Tc-99m	6.1220E+00	1.1643E-09	7.0822E+15	8.5154E+14
Ru-103	6.0216E+00	1.8658E-07	1.0909E+18	8.4150E+14
Ru-105	3.0033E+00	4.4679E-10	2.5625E+15	4.6232E+14
Ru-106	2.6232E+00	7.8408E-07	4.4546E+18	3.6644E+14
Rh-105	4.0117E+00	4.7529E-09	2.7260E+16	5.6127E+14
Sb-127	6.8059E+00	2.5485E-08	1.2085E+17	9.5504E+14
Sb-129	1.4793E+01	2.6306E-09	1.2280E+16	2.2834E+15
Te-127	6.8355E+00	2.5901E-09	1.2282E+16	9.5194E+14
Te-127m	1.1739E+00	1.2446E-07	5.9015E+17	1.6398E+14
Te-129	1.7085E+01	8.1583E-10	3.8086E+15	2.4584E+15
Te-129m	3.8680E+00	1.2840E-07	5.9941E+17	5.4031E+14
Te-131m	1.3799E+01	1.7305E-08	7.9551E+16	1.9549E+15
Te-132	1.0230E+02	3.3696E-07	1.5373E+18	1.4367E+16
I-131	7.0027E+02	5.6485E-06	2.5966E+19	1.3886E+17
I-132	6.8136E+02	6.6010E-08	3.0115E+17	1.5725E+17
I-133	1.3604E+03	1.2009E-06	5.4377E+18	2.7688E+17
I-134	2.7172E+02	1.0186E-08	4.5775E+16	1.1815E+17
I-135	1.0906E+03	3.1055E-07	1.3853E+18	2.3649E+17
Xe-133	9.9306E+04	5.3053E-04	2.4022E+21	9.2635E+18
Xe-135	3.9572E+04	1.5496E-05	6.9124E+19	3.7645E+18
Cs-134	1.6238E+02	1.2550E-04	5.6402E+20	3.3843E+16
Cs-136	4.8337E+01	6.5952E-07	2.9204E+18	1.0094E+16
Cs-137	1.3068E+02	1.5023E-03	6.6039E+21	2.7235E+16
Ba-139	1.7526E+01	1.0715E-09	4.6421E+15	3.4004E+15
Ba-140	5.3815E+01	7.3509E-07	3.1620E+18	7.5276E+15
La-140	1.5500E+00	2.7887E-09	1.1996E+16	1.5454E+14
La-141	3.3894E-01	5.9933E-11	2.5597E+14	5.2854E+13
La-142	1.7695E-01	1.2361E-11	5.2423E+13	3.3086E+13
Ce-141	1.2757E+00	4.4770E-08	1.9121E+17	1.7824E+14
Ce-143	1.1752E+00	1.7697E-09	7.4528E+15	1.6628E+14
Ce-144	1.0249E+00	3.2133E-07	1.3438E+18	1.4317E+14
Pr-143	4.8095E-01	7.1423E-09	3.0078E+16	6.7073E+13
Nd-147	1.9895E-01	2.4593E-09	1.0075E+16	2.7835E+13
Np-239	1.4121E+01	6.0868E-08	1.5337E+17	1.9873E+15
Pu-238	4.1385E-03	2.4174E-07	6.1167E+17	5.7808E+11
Pu-239	3.6256E-04	5.8329E-06	1.4697E+19	5.0639E+10
Pu-240	6.7891E-04	2.9794E-06	7.4761E+18	9.4834E+10
Pu-241	1.4633E-01	1.4205E-06	3.5496E+18	2.0440E+13
Am-241	9.8065E-05	2.8572E-08	7.1397E+16	1.3696E+10
Cm-242	2.4874E-02	7.5052E-09	1.8676E+16	3.4749E+12
Cm-244	1.6445E-03	2.0327E-08	5.0169E+16	2.2971E+11

RB Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	1.9374E+22	0.0000E+00	
Elemental I (atoms)	1.5562E+18	0.0000E+00	
Organic I (atoms)	1.1254E+18	0.0000E+00	
Aerosols (kg)	1.6836E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8688E-08

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 3.5280E-08
Total I (Ci) 4.1044E+03

DW to RB Transport Group Inventory:
Time (h) = 2.3000 Leakage Transport

Noble gases (atoms) 1.9391E+22
Elemental I (atoms) 1.5922E+18
Organic I (atoms) 1.1407E+18
Aerosols (kg) 1.6764E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	1.7446E-10	5.4864E-18	5.6965E+07	1.6082E+04
Co-60	2.0899E-10	1.8488E-16	1.8557E+09	1.9262E+04
Kr-85	1.6488E-02	4.2025E-08	2.9774E+17	1.3723E+12
Kr-85m	1.9039E-01	2.3135E-11	1.6391E+14	1.6872E+13
Kr-87	1.5569E-01	5.4964E-12	3.8046E+13	1.6337E+13
Kr-88	4.2197E-01	3.3652E-11	2.3029E+14	3.8816E+13
Rb-86	2.5820E-08	3.1732E-16	2.2220E+09	3.6346E+06
Sr-89	2.9563E-07	1.0176E-14	6.8855E+10	2.7253E+07
Sr-90	3.8921E-08	2.8533E-13	1.9092E+12	3.5872E+06
Sr-91	3.1132E-07	8.5881E-17	5.6834E+08	2.9598E+07
Sr-92	2.1308E-07	1.6952E-17	1.1097E+08	2.1949E+07
Y-90	9.7296E-10	1.7883E-18	1.1966E+07	7.4407E+04
Y-91	3.8454E-09	1.5680E-16	1.0377E+09	3.5206E+05
Y-92	6.3538E-08	6.6031E-18	4.3223E+07	4.5954E+06
Y-93	3.6203E-09	1.0851E-18	7.0266E+06	3.4356E+05
Zr-95	4.5817E-09	2.1327E-16	1.3520E+09	4.2236E+05
Zr-97	4.0406E-09	2.1136E-18	1.3122E+07	3.7894E+05
Nb-95	4.5955E-09	1.1752E-16	7.4499E+08	4.2353E+05
Mo-99	5.7301E-08	1.1947E-16	7.2675E+08	5.3046E+06
Tc-99m	5.1698E-08	9.8318E-18	5.9807E+07	4.7418E+06
Ru-103	5.0850E-08	1.5756E-15	9.2119E+09	4.6880E+06
Ru-105	2.5362E-08	3.7729E-18	2.1639E+07	2.4997E+06
Ru-106	2.2152E-08	6.6213E-15	3.7617E+10	2.0417E+06
Rh-105	3.3877E-08	4.0136E-17	2.3020E+08	3.1253E+06
Sb-127	5.7473E-08	2.1521E-16	1.0205E+09	5.3138E+06
Sb-129	1.2492E-07	2.2214E-17	1.0370E+08	1.2336E+07
Te-127	5.7723E-08	2.1872E-17	1.0371E+08	5.3023E+06
Te-127m	9.9134E-09	1.0510E-15	4.9835E+09	9.1365E+05
Te-129	1.4428E-07	6.8894E-18	3.2162E+07	1.3472E+07
Te-129m	3.2664E-08	1.0843E-15	5.0617E+09	3.0105E+06
Te-131m	1.1653E-07	1.4613E-16	6.7177E+08	1.0845E+07
Te-132	8.6388E-07	2.8455E-15	1.2982E+10	7.9918E+07
I-131	8.0818E-04	6.5189E-12	2.9968E+13	1.0404E+11
I-132	6.7969E-04	6.5848E-14	3.0041E+11	1.0147E+11
I-133	1.5704E-03	1.3863E-12	6.2772E+12	2.0588E+11
I-134	3.1366E-04	1.1758E-14	5.2842E+10	6.9762E+10
I-135	1.2590E-03	3.5849E-13	1.5992E+12	1.7253E+11
Xe-133	1.7497E+00	9.3475E-09	4.2325E+16	1.4590E+14
Xe-135	6.7756E-01	2.6532E-10	1.1836E+15	5.7704E+13
Cs-134	2.8343E-06	2.1907E-12	9.8451E+12	3.9860E+08
Cs-136	8.4373E-07	1.1512E-14	5.0976E+10	1.1882E+08
Cs-137	2.2810E-06	2.6224E-11	1.1527E+14	3.2077E+08
Ba-139	1.4800E-07	9.0481E-18	3.9201E+07	1.7080E+07
Ba-140	4.5445E-07	6.2076E-15	2.6702E+10	4.1924E+07
La-140	1.5350E-08	2.7617E-17	1.1880E+08	1.1332E+06
La-141	2.8622E-09	5.0610E-19	2.1616E+06	2.8463E+05
La-142	1.4943E-09	1.0439E-19	4.4269E+05	1.6819E+05
Ce-141	1.0771E-08	3.7802E-16	1.6145E+09	9.9294E+05
Ce-143	9.9243E-09	1.4944E-17	6.2935E+07	9.2285E+05

Ce-144	8.6548E-09	2.7135E-15	1.1348E+10	7.9770E+05
Pr-143	4.0653E-09	6.0371E-17	2.5424E+08	3.7417E+05
Nd-147	1.6801E-09	2.0767E-17	8.5078E+07	1.5501E+05
Np-239	1.1925E-07	5.1401E-16	1.2952E+09	1.1047E+07
Pu-238	3.4948E-11	2.0414E-15	5.1653E+09	3.2209E+03
Pu-239	3.0616E-12	4.9257E-14	1.2411E+11	2.8216E+02
Pu-240	5.7331E-12	2.5160E-14	6.3132E+10	5.2839E+02
Pu-241	1.2357E-09	1.1996E-14	2.9975E+10	1.1389E+05
Am-241	8.2816E-13	2.4129E-16	6.0295E+08	7.6318E+01
Cm-242	2.1005E-10	6.3378E-17	1.5772E+08	1.9361E+04
Cm-244	1.3887E-11	1.7165E-16	4.2366E+08	1.2799E+03

CR Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	3.4168E+17	0.0000E+00	
Elemental I (atoms)	2.9597E+13	0.0000E+00	
Organic I (atoms)	8.0993E+12	0.0000E+00	
Aerosols (kg)	2.8945E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8825E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.7641E-13
Total I (Ci)			4.6309E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5257E+17
Elemental I (atoms)	0.0000E+00	5.0318E+13
Organic I (atoms)	0.0000E+00	1.1543E+13
Aerosols (kg)	0.0000E+00	4.8802E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.4114E+17
Elemental I (atoms)	9.9886E+13	3.0893E+12
Organic I (atoms)	2.4816E+13	7.6752E+11
Aerosols (kg)	9.6717E-11	2.9912E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	1.5176E+17	0.0000E+00
Elemental I (atoms)	2.3264E+13	0.0000E+00
Organic I (atoms)	4.1139E+12	0.0000E+00
Aerosols (kg)	2.2846E-11	0.0000E+00

EAB Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.0094E-03	1.0554E-02	3.3432E-03
Accumulated dose (rem)	3.0017E-02	1.5369E-01	3.4885E-02

LPZ Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.3625E-04	1.1792E-03	3.7354E-04
Accumulated dose (rem)	3.3538E-03	1.7172E-02	3.8978E-03

CR Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2506E-03	5.3303E-02	2.9357E-03
Accumulated dose (rem)	9.0437E-03	5.4707E-01	2.6362E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	4.4412E-01	1.3967E-08	1.4502E+17	4.3433E+15
Co-60	5.3206E-01	4.7069E-07	4.7242E+18	5.2009E+15

Kr-85	1.3587E+06	3.4631E+00	2.4536E+25	2.2335E+20
Kr-85m	1.5448E+07	1.8772E-03	1.3299E+22	2.8387E+21
Kr-87	1.2149E+07	4.2891E-04	2.9689E+21	3.0340E+21
Kr-88	3.3935E+07	2.7063E-03	1.8520E+22	6.6670E+21
Rb-86	1.5295E+01	1.8797E-07	1.3163E+18	3.1422E+17
Sr-89	7.5260E+02	2.5905E-05	1.7528E+20	7.3614E+18
Sr-90	9.9088E+01	7.2641E-04	4.8606E+21	9.6858E+17
Sr-91	7.8681E+02	2.1705E-07	1.4364E+18	8.3549E+18
Sr-92	5.2877E+02	4.2068E-08	2.7537E+17	6.9394E+18
Y-90	1.5582E+00	2.8640E-09	1.9164E+16	1.0137E+16
Y-91	9.6360E+00	3.9292E-07	2.6003E+18	9.3435E+16
Y-92	6.1968E+01	6.4400E-09	4.2155E+16	1.1153E+17
Y-93	9.1537E+00	2.7437E-09	1.7766E+16	9.6722E+16
Zr-95	1.1664E+01	5.4294E-07	3.4418E+18	1.1407E+17
Zr-97	1.0245E+01	5.3590E-09	3.3271E+16	1.0490E+17
Nb-95	1.1700E+01	2.9920E-07	1.8966E+18	1.1436E+17
Mo-99	1.4573E+02	3.0384E-07	1.8483E+18	1.4415E+18
Tc-99m	1.3159E+02	2.5025E-08	1.5223E+17	1.2835E+18
Ru-103	1.2945E+02	4.0109E-06	2.3451E+19	1.2664E+18
Ru-105	6.3567E+01	9.4565E-09	5.4237E+16	7.4269E+17
Ru-106	5.6395E+01	1.6857E-05	9.5767E+19	5.5131E+17
Rh-105	8.6203E+01	1.0213E-07	5.8575E+17	8.4556E+17
Sb-127	1.4621E+02	5.4749E-07	2.5961E+18	1.4413E+18
Sb-129	3.1296E+02	5.5653E-08	2.5981E+17	3.6749E+18
Te-127	1.4694E+02	5.5679E-08	2.6402E+17	1.4336E+18
Te-127m	2.5238E+01	2.6756E-06	1.2687E+19	2.4670E+17
Te-129	3.6375E+02	1.7369E-08	8.1086E+16	3.8429E+18
Te-129m	8.3157E+01	2.7604E-06	1.2886E+19	8.1289E+17
Te-131m	2.9597E+02	3.7117E-07	1.7063E+18	2.9697E+18
Te-132	2.1974E+03	7.2379E-06	3.3021E+19	2.1695E+19
I-131	3.9528E+04	3.1884E-04	1.4657E+21	1.4963E+20
I-132	4.9985E+04	4.8425E-06	2.2092E+19	2.1275E+20
I-133	7.6518E+04	6.7547E-05	3.0585E+20	3.0376E+20
I-134	1.4168E+04	5.3111E-07	2.3869E+18	2.0581E+20
I-135	6.0904E+04	1.7342E-05	7.7361E+19	2.7104E+20
Xe-133	1.4441E+08	7.7147E-01	3.4932E+24	2.3810E+22
Xe-135	5.8321E+07	2.2838E-02	1.0188E+23	9.9048E+21
Cs-134	1.6792E+03	1.2979E-03	5.8328E+21	3.4412E+19
Cs-136	4.9977E+02	6.8190E-06	3.0195E+19	1.0278E+19
Cs-137	1.3514E+03	1.5537E-02	6.8295E+22	2.7692E+19
Ba-139	3.5831E+02	2.1906E-08	9.4905E+16	6.3228E+18
Ba-140	1.1567E+03	1.5800E-05	6.7964E+19	1.1336E+19
La-140	2.2094E+01	3.9749E-08	1.7098E+17	1.2158E+17
La-141	7.1594E+00	1.2659E-09	5.4069E+15	8.5635E+16
La-142	3.6370E+00	2.5407E-10	1.0775E+15	6.0153E+16
Ce-141	2.7431E+01	9.6271E-07	4.1118E+18	2.6825E+17
Ce-143	2.5213E+01	3.7967E-08	1.5989E+17	2.5238E+17
Ce-144	2.2034E+01	6.9082E-06	2.8890E+19	2.1540E+17
Pr-143	1.0321E+01	1.5327E-07	6.4545E+17	1.0072E+17
Nd-147	4.2761E+00	5.2857E-08	2.1654E+17	4.1923E+16
Np-239	3.0321E+02	1.3070E-06	3.2933E+18	3.0052E+18
Pu-238	8.8972E-02	5.1971E-06	1.3150E+19	8.6969E+14
Pu-239	7.7946E-03	1.2540E-04	3.1598E+20	7.6180E+13
Pu-240	1.4596E-02	6.4054E-05	1.6073E+20	1.4267E+14
Pu-241	3.1459E+00	3.0539E-05	7.6311E+19	3.0751E+16
Am-241	2.1081E-03	6.1422E-07	1.5348E+18	2.0602E+13
Cm-242	5.3476E-01	1.6135E-07	4.0151E+17	5.2283E+15
Cm-244	3.5355E-02	4.3701E-07	1.0786E+18	3.4560E+14

DW Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.8166E+25	0.0000E+00	
Elemental I (atoms)	4.4213E+19	4.8566E+22	
Organic I (atoms)	1.4771E+21	0.0000E+00	
Aerosols (kg)	1.7959E-02	4.8970E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.2793E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5795E-05
Total I (Ci)			2.4110E+05

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport

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Noble gases (atoms)      2.1152E+22
Elemental I (atoms)      1.5950E+18
Organic I (atoms)        1.2331E+18
Aerosols (kg)            1.6777E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.6038E+21
Elemental I (atoms)    0.0000E+00  8.3805E+17
Organic I (atoms)      0.0000E+00  5.6872E+17
Aerosols (kg)          0.0000E+00  8.8234E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.6038E+21
Elemental I (atoms)    0.0000E+00  8.3805E+17
Organic I (atoms)      0.0000E+00  5.6872E+17
Aerosols (kg)          0.0000E+00  8.8234E-04

RB Compartment Nuclide Inventory:

Time (h) =   2.4000       Ci           kg         Atoms      Decay
Co-58                  2.0691E-02  6.5069E-10  6.7561E+15  3.1621E+12
Co-60                  2.4787E-02  2.1928E-08  2.2009E+17  3.7872E+12
Kr-85                  1.0196E+03  2.5988E-03  1.8412E+22  1.0059E+17
Kr-85m                 1.1593E+04  1.4087E-06  9.9802E+18  1.2418E+18
Kr-87                  9.1169E+03  3.2186E-07  2.2279E+18  1.2247E+18
Kr-88                  2.5465E+04  2.0308E-06  1.3898E+19  2.8661E+18
Rb-86                  1.4801E+00  1.8190E-08  1.2738E+17  3.2843E+14
Sr-89                  3.5061E+01  1.2068E-06  8.1660E+18  5.3589E+15
Sr-90                  4.6162E+00  3.3842E-05  2.2644E+20  7.0530E+14
Sr-91                  3.6655E+01  1.0112E-08  6.6917E+16  5.8760E+15
Sr-92                  2.4634E+01  1.9598E-09  1.2829E+16  4.4745E+15
Y-90                   1.0572E-01  1.9432E-10  1.3002E+15  1.2058E+13
Y-91                   4.5437E-01  1.8528E-08  1.2261E+17  6.8795E+13
Y-92                   6.3394E+00  6.5883E-10  4.3125E+15  6.1155E+14
Y-93                   4.2645E-01  1.2782E-10  8.2769E+14  6.8165E+13
Zr-95                  5.4339E-01  2.5294E-08  1.6034E+17  8.3047E+13
Zr-97                  4.7727E-01  2.4966E-10  1.5500E+15  7.4907E+13
Nb-95                  5.4505E-01  1.3939E-08  8.8359E+16  8.3274E+13
Mo-99                  6.7890E+00  1.4155E-08  8.6105E+16  1.0444E+15
Tc-99m                 6.1302E+00  1.1658E-09  7.0918E+15  9.3274E+14
Ru-103                 6.0306E+00  1.8686E-07  1.0925E+18  9.2183E+14
Ru-105                 2.9614E+00  4.4055E-10  2.5267E+15  5.0208E+14
Ru-106                 2.6273E+00  7.8531E-07  4.4615E+18  4.0144E+14
Rh-105                 4.0160E+00  4.7579E-09  2.7289E+16  6.1474E+14
Sb-127                 6.8115E+00  2.5506E-08  1.2095E+17  1.0458E+15
Sb-129                 1.4580E+01  2.5927E-09  1.2104E+16  2.4792E+15
Te-127                 6.8456E+00  2.5939E-09  1.2300E+16  1.0428E+15
Te-127m                1.1758E+00  1.2465E-07  5.9107E+17  1.7964E+14
Te-129                 1.6946E+01  8.0919E-10  3.7776E+15  2.6796E+15
Te-129m                3.8740E+00  1.2860E-07  6.0034E+17  5.9191E+14
Te-131m                1.3789E+01  1.7292E-08  7.9491E+16  2.1388E+15
Te-132                 1.0237E+02  3.3719E-07  1.5383E+18  1.5731E+16
I-131                  7.0257E+02  5.6671E-06  2.6052E+19  1.4822E+17
I-132                  6.6744E+02  6.4661E-08  2.9500E+17  1.6624E+17
I-133                  1.3608E+03  1.2013E-06  5.4393E+18  2.9503E+17
I-134                  2.5197E+02  9.4455E-09  4.2449E+16  1.2164E+17
I-135                  1.0831E+03  3.0843E-07  1.3758E+18  2.5099E+17
Xe-133                 1.0828E+05  5.7846E-04  2.6192E+21  1.0706E+19
Xe-135                 4.2923E+04  1.6808E-05  7.4979E+19  4.3383E+18
Cs-134                 1.6250E+02  1.2559E-04  5.6444E+20  3.6007E+16
Cs-136                 4.8362E+01  6.5987E-07  2.9219E+18  1.0738E+16
Cs-137                 1.3078E+02  1.5035E-03  6.6089E+21  2.8977E+16
Ba-139                 1.6693E+01  1.0205E-09  4.4214E+15  3.6285E+15
Ba-140                 5.3887E+01  7.3608E-07  3.1663E+18  8.2454E+15
La-140                 1.6416E+00  2.9534E-09  1.2704E+16  1.7519E+14
La-141                 3.3354E-01  5.8977E-11  2.5189E+14  5.7336E+13
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La-142	1.6944E-01	1.1836E-11	5.0197E+13	3.5394E+13
Ce-141	1.2776E+00	4.4838E-08	1.9150E+17	1.9526E+14
Ce-143	1.1746E+00	1.7688E-09	7.4488E+15	1.8194E+14
Ce-144	1.0265E+00	3.2183E-07	1.3459E+18	1.5684E+14
Pr-143	4.8185E-01	7.1557E-09	3.0134E+16	7.3488E+13
Nd-147	1.9921E-01	2.4625E-09	1.0088E+16	3.0489E+13
Np-239	1.4126E+01	6.0889E-08	1.5342E+17	2.1756E+15
Pu-238	4.1450E-03	2.4212E-07	6.1263E+17	6.3329E+11
Pu-239	3.6313E-04	5.8422E-06	1.4721E+19	5.5476E+10
Pu-240	6.7998E-04	2.9841E-06	7.4878E+18	1.0389E+11
Pu-241	1.4656E-01	1.4227E-06	3.5551E+18	2.2392E+13
Am-241	9.8221E-05	2.8618E-08	7.1511E+16	1.5004E+10
Cm-242	2.4913E-02	7.5168E-09	1.8705E+16	3.8068E+12
Cm-244	1.6471E-03	2.0359E-08	5.0248E+16	2.5165E+11

RB Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.1132E+22	0.0000E+00	
Elemental I (atoms)	1.5565E+18	0.0000E+00	
Organic I (atoms)	1.2160E+18	0.0000E+00	
Aerosols (kg)	1.6849E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8749E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5308E-08
Total I (Ci)			4.0660E+03

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport
Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5950E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6777E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	1.8171E-10	5.7146E-18	5.9335E+07	1.8502E+04
Co-60	2.1769E-10	1.9258E-16	1.9329E+09	2.2161E+04
Kr-85	1.7627E-02	4.4929E-08	3.1832E+17	1.6071E+12
Kr-85m	2.0042E-01	2.4354E-11	1.7254E+14	1.9562E+13
Kr-87	1.5762E-01	5.5645E-12	3.8517E+13	1.8494E+13
Kr-88	4.4026E-01	3.5110E-11	2.4027E+14	4.4753E+13
Rb-86	2.5924E-08	3.1860E-16	2.2310E+09	3.9799E+06
Sr-89	3.0792E-07	1.0599E-14	7.1717E+10	3.1355E+07
Sr-90	4.0542E-08	2.9721E-13	1.9887E+12	4.1272E+06
Sr-91	3.2192E-07	8.8806E-17	5.8770E+08	3.3902E+07
Sr-92	2.1635E-07	1.7212E-17	1.1267E+08	2.4867E+07
Y-90	1.0502E-09	1.9302E-18	1.2916E+07	8.7817E+04
Y-91	4.0109E-09	1.6355E-16	1.0823E+09	4.0540E+05
Y-92	6.8540E-08	7.1231E-18	4.6626E+07	5.4597E+06
Y-93	3.7452E-09	1.1226E-18	7.2691E+06	3.9362E+05
Zr-95	4.7723E-09	2.2214E-16	1.4082E+09	4.8592E+05
Zr-97	4.1916E-09	2.1926E-18	1.3613E+07	4.3489E+05
Nb-95	4.7869E-09	1.2242E-16	7.7601E+08	4.8729E+05
Mo-99	5.9624E-08	1.2432E-16	7.5621E+08	6.0992E+06
Tc-99m	5.3838E-08	1.0239E-17	6.2283E+07	5.4549E+06
Ru-103	5.2963E-08	1.6410E-15	9.5948E+09	5.3935E+06
Ru-105	2.6008E-08	3.8691E-18	2.2191E+07	2.8489E+06
Ru-106	2.3074E-08	6.8969E-15	3.9183E+10	2.3490E+06
Rh-105	3.5270E-08	4.1786E-17	2.3966E+08	3.5949E+06
Sb-127	5.9821E-08	2.2401E-16	1.0622E+09	6.1110E+06
Sb-129	1.2805E-07	2.2771E-17	1.0630E+08	1.4055E+07
Te-127	6.0121E-08	2.2781E-17	1.0802E+08	6.1002E+06

Te-127m	1.0326E-08	1.0947E-15	5.1910E+09	1.0512E+06
Te-129	1.4883E-07	7.1067E-18	3.3176E+07	1.5416E+07
Te-129m	3.4024E-08	1.1294E-15	5.2724E+09	3.4637E+06
Te-131m	1.2110E-07	1.5186E-16	6.9813E+08	1.2460E+07
Te-132	8.9905E-07	2.9614E-15	1.3510E+10	9.1899E+07
I-131	8.2109E-04	6.6230E-12	3.0446E+13	1.1498E+11
I-132	6.7411E-04	6.5307E-14	2.9794E+11	1.1059E+11
I-133	1.5908E-03	1.4043E-12	6.3584E+12	2.2710E+11
I-134	2.9455E-04	1.1042E-14	4.9622E+10	7.3845E+10
I-135	1.2662E-03	3.6054E-13	1.6083E+12	1.8948E+11
Xe-133	1.8697E+00	9.9886E-09	4.5228E+16	1.7081E+14
Xe-135	7.2006E-01	2.8197E-10	1.2578E+15	6.7332E+13
Cs-134	2.8462E-06	2.1998E-12	9.8862E+12	4.3651E+08
Cs-136	8.4707E-07	1.1558E-14	5.1178E+10	1.3010E+08
Cs-137	2.2905E-06	2.6334E-11	1.1575E+14	3.5128E+08
Ba-139	1.4660E-07	8.9626E-18	3.8830E+07	1.9083E+07
Ba-140	4.7326E-07	6.4645E-15	2.7807E+10	4.8229E+07
La-140	1.6664E-08	2.9980E-17	1.2896E+08	1.3445E+06
La-141	2.9293E-09	5.1796E-19	2.2122E+06	3.2399E+05
La-142	1.4881E-09	1.0395E-19	4.4085E+05	1.8846E+05
Ce-141	1.1219E-08	3.9373E-16	1.6816E+09	1.1424E+06
Ce-143	1.0316E-08	1.5534E-17	6.5418E+07	1.0604E+06
Ce-144	9.0150E-09	2.8265E-15	1.1820E+10	9.1778E+05
Pr-143	4.2357E-09	6.2901E-17	2.6489E+08	4.3057E+05
Nd-147	1.7495E-09	2.1626E-17	8.8597E+07	1.7832E+05
Np-239	1.2406E-07	5.3475E-16	1.3474E+09	1.2701E+07
Pu-238	3.6403E-11	2.1264E-15	5.3804E+09	3.7058E+03
Pu-239	3.1891E-12	5.1308E-14	1.2928E+11	3.2464E+02
Pu-240	5.9718E-12	2.6208E-14	6.5761E+10	6.0794E+02
Pu-241	1.2871E-09	1.2495E-14	3.1223E+10	1.3103E+05
Am-241	8.6266E-13	2.5135E-16	6.2807E+08	8.7808E+01
Cm-242	2.1879E-10	6.6016E-17	1.6428E+08	2.2275E+04
Cm-244	1.4465E-11	1.7880E-16	4.4130E+08	1.4726E+03

CR Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	3.6525E+17	0.0000E+00	
Elemental I (atoms)	2.9735E+13	0.0000E+00	
Organic I (atoms)	8.5218E+12	0.0000E+00	
Aerosols (kg)	2.9081E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9400E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.8285E-13
Total I (Ci)			4.6467E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6823E+17
Elemental I (atoms)	0.0000E+00	5.2640E+13
Organic I (atoms)	0.0000E+00	1.2553E+13
Aerosols (kg)	0.0000E+00	5.1028E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.7637E+17
Elemental I (atoms)	1.0495E+14	3.2460E+12
Organic I (atoms)	2.7021E+13	8.3569E+11
Aerosols (kg)	1.0158E-10	3.1415E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	1.7904E+17	0.0000E+00
Elemental I (atoms)	2.5557E+13	0.0000E+00
Organic I (atoms)	4.7560E+12	0.0000E+00
Aerosols (kg)	2.5086E-11	0.0000E+00

EAB Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.2159E-02	7.3132E-02	2.4470E-02
Accumulated dose (rem)	5.2176E-02	2.2683E-01	5.9355E-02

LPZ Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.4759E-03	8.1711E-03	2.7340E-03
Accumulated dose (rem)	5.8297E-03	2.5344E-02	6.6318E-03

CR Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.8801E-03	3.4265E-01	1.9704E-02
Accumulated dose (rem)	1.7924E-02	8.8972E-01	4.6066E-02

DW Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	7.3351E-02	2.3068E-09	2.3951E+16	4.3574E+15
Co-60	8.7895E-02	7.7756E-08	7.8043E+17	5.2178E+15
Kr-85	1.3579E+06	3.4611E+00	2.4521E+25	3.3190E+20
Kr-85m	1.4070E+07	1.7097E-03	1.2113E+22	4.0173E+21
Kr-87	8.7549E+06	3.0908E-04	2.1394E+21	3.8619E+21
Kr-88	2.9294E+07	2.3362E-03	1.5988E+22	9.1890E+21
Rb-86	2.5243E+00	3.1024E-08	2.1724E+17	3.1470E+17
Sr-89	1.2429E+02	4.2780E-06	2.8947E+19	7.3853E+18
Sr-90	1.6369E+01	1.2000E-04	8.0297E+20	9.7173E+17
Sr-91	1.2441E+02	3.4321E-08	2.2713E+17	8.3795E+18
Sr-92	7.4925E+01	5.9609E-09	3.9019E+16	6.9553E+18
Y-90	3.6183E-01	6.6506E-10	4.4501E+15	1.0192E+16
Y-91	1.6072E+00	6.5536E-08	4.3370E+17	9.3742E+16
Y-92	1.8153E+01	1.8866E-09	1.2349E+16	1.1392E+17
Y-93	1.4512E+00	4.3497E-10	2.8166E+15	9.7008E+16
Zr-95	1.9264E+00	8.9669E-08	5.6842E+17	1.1444E+17
Zr-97	1.6513E+00	8.6379E-10	5.3627E+15	1.0522E+17
Nb-95	1.9327E+00	4.9427E-08	3.1332E+17	1.1473E+17
Mo-99	2.3923E+01	4.9879E-08	3.0341E+17	1.4461E+18
Tc-99m	2.1705E+01	4.1277E-09	2.5109E+16	1.2876E+18
Ru-103	2.1375E+01	6.6230E-07	3.8723E+18	1.2705E+18
Ru-105	9.5622E+00	1.4225E-09	8.1587E+15	7.4464E+17
Ru-106	9.3160E+00	2.7846E-06	1.5820E+19	5.5310E+17
Rh-105	1.4191E+01	1.6813E-08	9.6431E+16	8.4829E+17
Sb-127	2.4045E+01	9.0039E-08	4.2695E+17	1.4460E+18
Sb-129	4.6956E+01	8.3501E-09	3.8981E+16	3.6845E+18
Te-127	2.4260E+01	9.1925E-09	4.3589E+16	1.4383E+18
Te-127m	4.1693E+00	4.4201E-07	2.0960E+18	2.4750E+17
Te-129	5.6505E+01	2.6981E-09	1.2596E+16	3.8539E+18
Te-129m	1.3736E+01	4.5596E-07	2.1286E+18	8.1554E+17
Te-131m	4.8221E+01	6.0473E-08	2.7800E+17	2.9790E+18
Te-132	3.6108E+02	1.1893E-06	5.4261E+18	2.1765E+19
I-131	3.3235E+04	2.6808E-04	1.2324E+21	1.5242E+20
I-132	3.5284E+04	3.4183E-06	1.5595E+19	2.1600E+20
I-133	6.3198E+04	5.5789E-05	2.5261E+20	3.0913E+20
I-134	7.4287E+03	2.7847E-07	1.2515E+18	2.0662E+20
I-135	4.8189E+04	1.3722E-05	6.1210E+19	2.7522E+20
Xe-133	1.4384E+08	7.6846E-01	3.4795E+24	3.5328E+22
Xe-135	5.5682E+07	2.1804E-02	9.7264E+22	1.4459E+22
Cs-134	2.7740E+02	2.1440E-04	9.6355E+20	3.4465E+19
Cs-136	8.2452E+01	1.1250E-06	4.9815E+18	1.0294E+19
Cs-137	2.2325E+02	2.5666E-03	1.1282E+22	2.7735E+19
Ba-139	4.3775E+01	2.6762E-09	1.1595E+16	6.3330E+18
Ba-140	1.9083E+02	2.6066E-06	1.1212E+19	1.1372E+19
La-140	5.5759E+00	1.0032E-08	4.3152E+16	1.2238E+17
La-141	1.0640E+00	1.8813E-10	8.0352E+14	8.5854E+16
La-142	4.5876E-01	3.2048E-11	1.3591E+14	6.0258E+16
Ce-141	4.5297E+00	1.5898E-07	6.7899E+17	2.6912E+17
Ce-143	4.1130E+00	6.1935E-09	2.6083E+16	2.5317E+17
Ce-144	3.6397E+00	1.1412E-06	4.7724E+18	2.1610E+17
Pr-143	1.7081E+00	2.5366E-08	1.0682E+17	1.0105E+17
Nd-147	7.0529E-01	8.7181E-09	3.5716E+16	4.2058E+16

Np-239	4.9723E+01	2.1433E-07	5.4005E+17	3.0148E+18
Pu-238	1.4698E-02	8.5856E-07	2.1724E+18	8.7252E+14
Pu-239	1.2878E-03	2.0718E-05	5.2203E+19	7.6428E+13
Pu-240	2.4112E-03	1.0582E-05	2.6552E+19	1.4314E+14
Pu-241	5.1970E-01	5.0450E-06	1.2606E+19	3.0851E+16
Am-241	3.4831E-04	1.0148E-07	2.5359E+17	2.0669E+13
Cm-242	8.8332E-02	2.6652E-08	6.6323E+16	5.2453E+15
Cm-244	5.8406E-03	7.2193E-08	1.7818E+17	3.4672E+14

DW Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8128E+25	0.0000E+00	
Elemental I (atoms)	4.3752E+19	4.8566E+22	
Organic I (atoms)	1.4617E+21	0.0000E+00	
Aerosols (kg)	2.9667E-03	4.8985E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0681E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3075E-05
Total I (Ci)			1.8733E+05

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4310E+17
Organic I (atoms)	0.0000E+00	7.3742E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4310E+17
Organic I (atoms)	0.0000E+00	7.3742E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

RB Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.0763E-02	6.5296E-10	6.7796E+15	4.8199E+12
Co-60	2.4879E-02	2.2010E-08	2.2091E+17	5.7735E+12
Kr-85	1.5290E+03	3.8971E-03	2.7610E+22	2.0582E+17
Kr-85m	1.5843E+04	1.9251E-06	1.3639E+19	2.3812E+18
Kr-87	9.8578E+03	3.4802E-07	2.4090E+18	2.0191E+18
Kr-88	3.2985E+04	2.6305E-06	1.8002E+19	5.2998E+18
Rb-86	1.4814E+00	1.8206E-08	1.2749E+17	4.4681E+14
Sr-89	3.5180E+01	1.2109E-06	8.1937E+18	8.1681E+15
Sr-90	4.6334E+00	3.3968E-05	2.2729E+20	1.0752E+15
Sr-91	3.5216E+01	9.7148E-09	6.4290E+16	8.7500E+15
Sr-92	2.1208E+01	1.6873E-09	1.1045E+16	6.3044E+15
Y-90	1.3533E-01	2.4875E-10	1.6644E+15	2.1495E+13
Y-91	4.6039E-01	1.8773E-08	1.2424E+17	1.0535E+14
Y-92	8.2083E+00	8.5305E-10	5.5839E+15	1.1792E+15
Y-93	4.1077E-01	1.2312E-10	7.9726E+14	1.0164E+14
Zr-95	5.4527E-01	2.5382E-08	1.6090E+17	1.2659E+14
Zr-97	4.6741E-01	2.4450E-10	1.5180E+15	1.1269E+14
Nb-95	5.4708E-01	1.3991E-08	8.8689E+16	1.2695E+14
Mo-99	6.7715E+00	1.4119E-08	8.5884E+16	1.5867E+15
Tc-99m	6.1437E+00	1.1684E-09	7.1073E+15	1.4209E+15
Ru-103	6.0504E+00	1.8747E-07	1.0961E+18	1.4050E+15
Ru-105	2.7067E+00	4.0266E-10	2.3094E+15	7.2861E+14
Ru-106	2.6370E+00	7.8820E-07	4.4780E+18	6.1197E+14
Rh-105	4.0170E+00	4.7592E-09	2.7296E+16	9.3580E+14

Sb-127	6.8062E+00	2.5486E-08	1.2085E+17	1.5904E+15
Sb-129	1.3291E+01	2.3636E-09	1.1034E+16	3.5931E+15
Te-127	6.8670E+00	2.6020E-09	1.2338E+16	1.5892E+15
Te-127m	1.1802E+00	1.2512E-07	5.9328E+17	2.7386E+14
Te-129	1.5994E+01	7.6373E-10	3.5654E+15	3.9652E+15
Te-129m	3.8881E+00	1.2906E-07	6.0251E+17	9.0234E+14
Te-131m	1.3650E+01	1.7117E-08	7.8690E+16	3.2361E+15
Te-132	1.0221E+02	3.3666E-07	1.5359E+18	2.3913E+16
I-131	7.1438E+02	5.7623E-06	2.6490E+19	2.0494E+17
I-132	5.8831E+02	5.6995E-08	2.6003E+17	2.1634E+17
I-133	1.3592E+03	1.1998E-06	5.4327E+18	4.0393E+17
I-134	1.5977E+02	5.9890E-09	2.6915E+16	1.3785E+17
I-135	1.0364E+03	2.9511E-07	1.3164E+18	3.3583E+17
Xe-133	1.6188E+05	8.6484E-04	3.9159E+21	2.1864E+19
Xe-135	6.1931E+04	2.4251E-05	1.0818E+20	8.6829E+18
Cs-134	1.6279E+02	1.2582E-04	5.6544E+20	4.9011E+16
Cs-136	4.8385E+01	6.6018E-07	2.9233E+18	1.4606E+16
Cs-137	1.3101E+02	1.5062E-03	6.6207E+21	3.9442E+16
Ba-139	1.2391E+01	7.5753E-10	3.2820E+15	4.7831E+15
Ba-140	5.4015E+01	7.3782E-07	3.1738E+18	1.2561E+16
La-140	2.1843E+00	3.9299E-09	1.6904E+16	3.2446E+14
La-141	3.0116E-01	5.3253E-11	2.2744E+14	8.2698E+13
La-142	1.2986E-01	9.0714E-12	3.8471E+13	4.7294E+13
Ce-141	1.2818E+00	4.4987E-08	1.9214E+17	2.9762E+14
Ce-143	1.1642E+00	1.7531E-09	7.3829E+15	2.7548E+14
Ce-144	1.0303E+00	3.2302E-07	1.3509E+18	2.3910E+14
Pr-143	4.8453E-01	7.1953E-09	3.0302E+16	1.1213E+14
Nd-147	1.9964E-01	2.4678E-09	1.0110E+16	4.6440E+13
Np-239	1.4075E+01	6.0668E-08	1.5287E+17	3.3034E+15
Pu-238	4.1604E-03	2.4302E-07	6.1492E+17	9.6545E+11
Pu-239	3.6451E-04	5.8644E-06	1.4777E+19	8.4576E+10
Pu-240	6.8251E-04	2.9952E-06	7.5157E+18	1.5838E+11
Pu-241	1.4711E-01	1.4280E-06	3.5684E+18	3.4137E+13
Am-241	9.8604E-05	2.8729E-08	7.1789E+16	2.2876E+10
Cm-242	2.5003E-02	7.5440E-09	1.8773E+16	5.8031E+12
Cm-244	1.6532E-03	2.0435E-08	5.0435E+16	3.8364E+11

RB Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	3.1669E+22	0.0000E+00	
Elemental I (atoms)	1.5586E+18	0.0000E+00	
Organic I (atoms)	1.7533E+18	0.0000E+00	
Aerosols (kg)	1.6879E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.9035E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5399E-08
Total I (Ci)			3.8580E+03

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.3392E-10	7.3566E-18	7.6383E+07	3.5381E+04
Co-60	2.8030E-10	2.4797E-16	2.4889E+09	4.2385E+04
Kr-85	2.7168E-02	6.9247E-08	4.9061E+17	3.4307E+12
Kr-85m	2.8151E-01	3.4207E-11	2.4235E+14	3.9299E+13
Kr-87	1.7516E-01	6.1839E-12	4.2805E+13	3.2243E+13

Kr-88	5.8611E-01	4.6742E-11	3.1987E+14	8.6903E+13
Rb-86	2.7437E-08	3.3720E-16	2.3613E+09	6.1141E+06
Sr-89	3.9636E-07	1.3643E-14	9.2314E+10	5.9956E+07
Sr-90	5.2203E-08	3.8270E-13	2.5607E+12	7.8935E+06
Sr-91	3.9676E-07	1.0945E-16	7.2433E+08	6.3137E+07
Sr-92	2.3894E-07	1.9010E-17	1.2443E+08	4.3441E+07
Y-90	1.6388E-09	3.0122E-18	2.0155E+07	1.9379E+05
Y-91	5.2063E-09	2.1229E-16	1.4049E+09	7.7923E+05
Y-92	1.0326E-07	1.0731E-17	7.0246E+07	1.2211E+07
Y-93	4.6280E-09	1.3872E-18	8.9824E+06	7.3419E+05
Zr-95	6.1433E-09	2.8596E-16	1.8128E+09	9.2921E+05
Zr-97	5.2661E-09	2.7547E-18	1.7102E+07	8.1934E+05
Nb-95	6.1637E-09	1.5763E-16	9.9921E+08	9.3197E+05
Mo-99	7.6292E-08	1.5907E-16	9.6761E+08	1.1620E+07
Tc-99m	6.9218E-08	1.3164E-17	8.0075E+07	1.0425E+07
Ru-103	6.8167E-08	2.1121E-15	1.2349E+10	1.0313E+07
Ru-105	3.0495E-08	4.5366E-18	2.6019E+07	5.1509E+06
Ru-106	2.9710E-08	8.8803E-15	5.0451E+10	4.4926E+06
Rh-105	4.5258E-08	5.3620E-17	3.0753E+08	6.8635E+06
Sb-127	7.6682E-08	2.8714E-16	1.3616E+09	1.1655E+07
Sb-129	1.4975E-07	2.6629E-17	1.2431E+08	2.5374E+07
Te-127	7.7367E-08	2.9316E-17	1.3901E+08	1.1663E+07
Te-127m	1.3296E-08	1.4096E-15	6.6842E+09	2.0105E+06
Te-129	1.8020E-07	8.6046E-18	4.0169E+07	2.8488E+07
Te-129m	4.3805E-08	1.4541E-15	6.7882E+09	6.6242E+06
Te-131m	1.5378E-07	1.9285E-16	8.8656E+08	2.3629E+07
Te-132	1.1515E-06	3.7929E-15	1.7304E+10	1.7519E+08
I-131	9.4271E-04	7.6040E-12	3.4956E+13	1.8584E+11
I-132	6.7190E-04	6.5093E-14	2.9697E+11	1.6490E+11
I-133	1.7940E-03	1.5837E-12	7.1707E+12	3.6313E+11
I-134	2.1088E-04	7.9049E-15	3.5526E+10	9.3993E+10
I-135	1.3679E-03	3.8952E-13	1.7376E+12	2.9541E+11
Xe-133	2.8733E+00	1.5350E-08	6.9505E+16	3.6395E+14
Xe-135	1.0708E+00	4.1932E-10	1.8705E+15	1.4048E+14
Cs-134	3.0151E-06	2.3304E-12	1.0473E+13	6.7093E+08
Cs-136	8.9618E-07	1.2228E-14	5.4145E+10	1.9983E+08
Cs-137	2.4265E-06	2.7897E-11	1.2263E+14	5.3994E+08
Ba-139	1.3960E-07	8.5347E-18	3.6976E+07	3.0767E+07
Ba-140	6.0856E-07	8.3127E-15	3.5757E+10	9.2164E+07
La-140	2.6708E-08	4.8051E-17	2.0669E+08	3.0464E+06
La-141	3.3931E-09	5.9997E-19	2.5625E+06	5.8165E+05
La-142	1.4630E-09	1.0220E-19	4.3344E+05	3.0895E+05
Ce-141	1.4441E-08	5.0680E-16	2.1646E+09	2.1844E+06
Ce-143	1.3117E-08	1.9752E-17	8.3180E+07	2.0125E+06
Ce-144	1.1607E-08	3.6393E-15	1.5220E+10	1.7553E+06
Pr-143	5.4625E-09	8.1120E-17	3.4162E+08	8.2427E+05
Nd-147	2.2492E-09	2.7803E-17	1.1390E+08	3.4072E+05
Np-239	1.5857E-07	6.8352E-16	1.7223E+09	2.4182E+07
Pu-238	4.6874E-11	2.7380E-15	6.9280E+09	7.0876E+03
Pu-239	4.1068E-12	6.6072E-14	1.6648E+11	6.2092E+02
Pu-240	7.6896E-12	3.3746E-14	8.4676E+10	1.1627E+03
Pu-241	1.6574E-09	1.6089E-14	4.0203E+10	2.5061E+05
Am-241	1.1110E-12	3.2369E-16	8.0884E+08	1.6795E+02
Cm-242	2.8170E-10	8.4995E-17	2.1151E+08	4.2600E+04
Cm-244	1.8626E-11	2.3023E-16	5.6823E+08	2.8164E+03

CR Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump		
Noble gases (atoms)	5.6259E+17	0.0000E+00		
Elemental I (atoms)	3.1610E+13	0.0000E+00		
Organic I (atoms)	1.2052E+13	0.0000E+00		
Aerosols (kg)	3.0905E-11	0.0000E+00		
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.4935E-13	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.4680E-13	
Total I (Ci)			4.9874E-03	

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.9407E+17
Elemental I (atoms)	0.0000E+00	6.7933E+13

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Organic I (atoms)      0.0000E+00  2.0359E+13
Aerosols (kg)          0.0000E+00  6.5704E-11

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   3.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.5950E+17
Elemental I (atoms)    1.3833E+14  4.2783E+12
Organic I (atoms)      4.4057E+13  1.3626E+12
Aerosols (kg)          1.3361E-10  4.1322E-12

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   3.0000     Filtered   Transported
Noble gases (atoms)    3.9033E+17  0.0000E+00
Elemental I (atoms)    3.9722E+13  0.0000E+00
Organic I (atoms)      9.4616E+12  0.0000E+00
Aerosols (kg)          3.8927E-11  0.0000E+00

EAB Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.2126E-02  1.5996E-01  5.7168E-02
Accumulated dose (rem)  1.0430E-01  3.8678E-01  1.1652E-01

LPZ Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.8242E-03  1.7872E-02  6.3875E-03
Accumulated dose (rem)  1.1654E-02  4.3216E-02  1.3019E-02

CR Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1764E-02  7.0629E-01  4.4033E-02
Accumulated dose (rem)  3.9687E-02  1.5960E+00  9.0098E-02

DW Compartment Nuclide Inventory:

Time (h) =   4.0000       Ci           kg          Atoms       Decay
Co-58                  3.6468E-03  1.1469E-10  1.1908E+15  4.3601E+15
Co-60                  4.3715E-03  3.8673E-09  3.8816E+16  5.2210E+15
Kr-85                  1.3565E+06  3.4576E+00  2.4497E+25  5.1267E+20
Kr-85m                 1.2041E+07  1.4632E-03  1.0366E+22  5.7527E+21
Kr-87                  5.0710E+06  1.7902E-04  1.2392E+21  4.7604E+21
Kr-88                  2.2927E+07  1.8284E-03  1.2513E+22  1.2649E+22
Rb-86                  1.2536E-01  1.5406E-09  1.0788E+16  3.1479E+17
Sr-89                  6.1780E+00  2.1265E-07  1.4389E+18  7.3898E+18
Sr-90                  8.1415E-01  5.9685E-06  3.9937E+19  9.7232E+17
Sr-91                  5.7525E+00  1.5869E-09  1.0502E+16  8.3839E+18
Sr-92                  2.8855E+00  2.2957E-10  1.5027E+15  6.9579E+18
Y-90                   2.6577E-02  4.8850E-11  3.2687E+14  1.0207E+16
Y-91                   8.1135E-02  3.3084E-09  2.1894E+16  9.3801E+16
Y-92                   1.3304E+00  1.3826E-10  9.0500E+14  1.1466E+17
Y-93                   6.7390E-02  2.0199E-11  1.3080E+14  9.7060E+16
Zr-95                  9.5768E-02  4.4579E-09  2.8259E+16  1.1451E+17
Zr-97                  7.8829E-02  4.1236E-11  2.5601E+14  1.0528E+17
Nb-95                  9.6128E-02  2.4583E-09  1.5583E+16  1.1480E+17
Mo-99                  1.1774E+00  2.4549E-09  1.4933E+16  1.4469E+18
Tc-99m                 1.0760E+00  2.0464E-10  1.2448E+15  1.2884E+18
Ru-103                 1.0623E+00  3.2917E-08  1.9245E+17  1.2713E+18
Ru-105                 4.0685E-01  6.0526E-11  3.4714E+14  7.4498E+17
Ru-106                 4.6331E-01  1.3849E-07  7.8677E+17  5.5344E+17
Rh-105                 7.0069E-01  8.3015E-10  4.7612E+15  8.4880E+17
Sb-127                 1.1870E+00  4.4448E-09  2.1076E+16  1.4468E+18
Sb-129                 1.9892E+00  3.5374E-10  1.6514E+15  3.6861E+18
Te-127                 1.2050E+00  4.5661E-10  2.1652E+15  1.4392E+18
Te-127m                2.0737E-01  2.1985E-08  1.0425E+17  2.4765E+17
Te-129                 2.5158E+00  1.2013E-10  5.6081E+14  3.8558E+18
Te-129m                6.8300E-01  2.2672E-08  1.0584E+17  8.1603E+17
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Te-131m	2.3436E+00	2.9390E-09	1.3511E+16	2.9808E+18
Te-132	1.7800E+01	5.8632E-08	2.6749E+17	2.1778E+19
I-131	3.1924E+04	2.5750E-04	1.1838E+21	1.5672E+20
I-132	2.5188E+04	2.4402E-06	1.1133E+19	2.1995E+20
I-133	5.8927E+04	5.2019E-05	2.3554E+20	3.1718E+20
I-134	3.2480E+03	1.2175E-07	5.4718E+17	2.0728E+20
I-135	4.1830E+04	1.1911E-05	5.3133E+19	2.8115E+20
Xe-133	1.4291E+08	7.6348E-01	3.4570E+24	5.4425E+22
Xe-135	5.1544E+07	2.0184E-02	9.0037E+22	2.1597E+22
Cs-134	1.3797E+01	1.0663E-05	4.7922E+19	3.4475E+19
Cs-136	4.0919E+00	5.5831E-08	2.4722E+17	1.0297E+19
Cs-137	1.1104E+01	1.2766E-04	5.6114E+20	2.7743E+19
Ba-139	1.3167E+00	8.0500E-11	3.4877E+14	6.3344E+18
Ba-140	9.4696E+00	1.2935E-07	5.5640E+17	1.1379E+19
La-140	4.3451E-01	7.8173E-10	3.3626E+15	1.2261E+17
La-141	4.4361E-02	7.8441E-12	3.3502E+13	8.5890E+16
La-142	1.4555E-02	1.0167E-12	4.3120E+12	6.0273E+16
Ce-141	2.2514E-01	7.9014E-09	3.3747E+16	2.6928E+17
Ce-143	2.0032E-01	3.0164E-10	1.2703E+15	2.5332E+17
Ce-144	1.8101E-01	5.6752E-08	2.3734E+17	2.1623E+17
Pr-143	8.5206E-02	1.2653E-09	5.3287E+15	1.0111E+17
Nd-147	3.4987E-02	4.3247E-10	1.7717E+15	4.2084E+16
Np-239	2.4429E+00	1.0530E-08	2.6533E+16	3.0166E+18
Pu-238	7.3105E-04	4.2702E-08	1.0805E+17	8.7305E+14
Pu-239	6.4057E-05	1.0306E-06	2.5968E+18	7.6475E+13
Pu-240	1.1993E-04	5.2630E-07	1.3206E+18	1.4322E+14
Pu-241	2.5848E-02	2.5092E-07	6.2700E+17	3.0870E+16
Am-241	1.7329E-05	5.0489E-09	1.2616E+16	2.0682E+13
Cm-242	4.3926E-03	1.3253E-09	3.2981E+15	5.2485E+15
Cm-244	2.9049E-04	3.5906E-09	8.8620E+15	3.4693E+14

DW Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8068E+25	0.0000E+00	
Elemental I (atoms)	4.3051E+19	4.8566E+22	
Organic I (atoms)	1.4382E+21	0.0000E+00	
Aerosols (kg)	1.4754E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0146E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2270E-05
Total I (Ci)			1.6112E+05

DW to RB Transport Group Inventory:

Time (h) = 4.0000	Leakage Transport
Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.6387E+18
Organic I (atoms)	2.6914E+18
Aerosols (kg)	1.6814E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5140E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5140E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

RB Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	2.0769E-02	6.5315E-10	6.7816E+15	7.5864E+12
Co-60	2.4896E-02	2.2025E-08	2.2106E+17	9.0892E+12

Kr-85	2.3772E+03	6.0592E-03	4.2929E+22	4.7163E+17
Kr-85m	2.1101E+04	2.5641E-06	1.8166E+19	4.9191E+18
Kr-87	8.8865E+03	3.1373E-07	2.1716E+18	3.3151E+18
Kr-88	4.0178E+04	3.2042E-06	2.1928E+19	1.0345E+19
Rb-86	1.4796E+00	1.8184E-08	1.2733E+17	6.4403E+14
Sr-89	3.5185E+01	1.2111E-06	8.1947E+18	1.2855E+16
Sr-90	4.6367E+00	3.3991E-05	2.2745E+20	1.6927E+15
Sr-91	3.2761E+01	9.0375E-09	5.9808E+16	1.3276E+16
Sr-92	1.6433E+01	1.3074E-09	8.5580E+15	8.7983E+15
Y-90	1.8392E-01	3.3805E-10	2.2620E+15	4.2432E+13
Y-91	4.6753E-01	1.9064E-08	1.2616E+17	1.6712E+14
Y-92	1.0100E+01	1.0497E-09	6.8711E+15	2.3887E+15
Y-93	3.8380E-01	1.1504E-10	7.4490E+14	1.5455E+14
Zr-95	5.4541E-01	2.5388E-08	1.6094E+17	1.9924E+14
Zr-97	4.4894E-01	2.3484E-10	1.4580E+15	1.7372E+14
Nb-95	5.4746E-01	1.4000E-08	8.8750E+16	1.9986E+14
Mo-99	6.7055E+00	1.3981E-08	8.5046E+16	2.4845E+15
Tc-99m	6.1282E+00	1.1654E-09	7.0893E+15	2.2338E+15
Ru-103	6.0502E+00	1.8746E-07	1.0961E+18	2.2110E+15
Ru-105	2.3171E+00	3.4470E-10	1.9770E+15	1.0626E+15
Ru-106	2.6386E+00	7.8869E-07	4.4807E+18	9.6339E+14
Rh-105	3.9905E+00	4.7278E-09	2.7116E+16	1.4690E+15
Sb-127	6.7600E+00	2.5314E-08	1.2003E+17	2.4941E+15
Sb-129	1.1329E+01	2.0146E-09	9.4048E+15	5.2296E+15
Te-127	6.8628E+00	2.6004E-09	1.2331E+16	2.5005E+15
Te-127m	1.1810E+00	1.2521E-07	5.9370E+17	4.3114E+14
Te-129	1.4328E+01	6.8416E-10	3.1939E+15	5.9360E+15
Te-129m	3.8898E+00	1.2912E-07	6.0277E+17	1.4204E+15
Te-131m	1.3347E+01	1.6738E-08	7.6946E+16	5.0343E+15
Te-132	1.0137E+02	3.3392E-07	1.5234E+18	3.7474E+16
I-131	7.3202E+02	5.9046E-06	2.7144E+19	3.0142E+17
I-132	4.7803E+02	4.6311E-08	2.1128E+17	2.8698E+17
I-133	1.3519E+03	1.1934E-06	5.4034E+18	5.8476E+17
I-134	7.4513E+01	2.7932E-09	1.2553E+16	1.5276E+17
I-135	9.5962E+02	2.7325E-07	1.2189E+18	4.6890E+17
Xe-133	2.5036E+05	1.3375E-03	6.0563E+21	4.9928E+19
Xe-135	8.9677E+04	3.5116E-05	1.5665E+20	1.9055E+19
Cs-134	1.6284E+02	1.2586E-04	5.6561E+20	7.0699E+16
Cs-136	4.8295E+01	6.5895E-07	2.9179E+18	2.1045E+16
Cs-137	1.3105E+02	1.5067E-03	6.6229E+21	5.6897E+16
Ba-139	7.4990E+00	4.5846E-10	1.9863E+15	6.0809E+15
Ba-140	5.3930E+01	7.3667E-07	3.1688E+18	1.9751E+16
La-140	3.0703E+00	5.5238E-09	2.3761E+16	6.6845E+14
La-141	2.5264E-01	4.4673E-11	1.9080E+14	1.1949E+14
La-142	8.2891E-02	5.7905E-12	2.4557E+13	6.1232E+13
Ce-141	1.2818E+00	4.4987E-08	1.9214E+17	4.6839E+14
Ce-143	1.1408E+00	1.7179E-09	7.2345E+15	4.2902E+14
Ce-144	1.0309E+00	3.2321E-07	1.3517E+18	3.7640E+14
Pr-143	4.8629E-01	7.2215E-09	3.0412E+16	1.7678E+14
Nd-147	1.9925E-01	2.4630E-09	1.0090E+16	7.3011E+13
Np-239	1.3913E+01	5.9971E-08	1.5111E+17	5.1677E+15
Pu-238	4.1634E-03	2.4319E-07	6.1535E+17	1.5199E+12
Pu-239	3.6481E-04	5.8693E-06	1.4789E+19	1.3316E+11
Pu-240	6.8299E-04	2.9973E-06	7.5210E+18	2.4934E+11
Pu-241	1.4721E-01	1.4290E-06	3.5709E+18	5.3742E+13
Am-241	9.8700E-05	2.8757E-08	7.1859E+16	3.6019E+10
Cm-242	2.5016E-02	7.5480E-09	1.8783E+16	9.1350E+12
Cm-244	1.6544E-03	2.0449E-08	5.0470E+16	6.0397E+11

RB Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	4.9184E+22	0.0000E+00	
Elemental I (atoms)	1.5635E+18	0.0000E+00	
Organic I (atoms)	2.6284E+18	0.0000E+00	
Aerosols (kg)	1.6884E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.9436E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5514E-08
Total I (Ci)			3.5960E+03

DW to RB Transport Group Inventory:

Time (h) = 4.0000	Leakage Transport

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Noble gases (atoms)      4.9270E+22
Elemental I (atoms)      1.6387E+18
Organic I (atoms)        2.6914E+18
Aerosols (kg)            1.6814E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   4.0000       Ci           kg          Atoms      Decay
Co-58                  3.3311E-10  1.0476E-17  1.0877E+08  7.3780E+04
Co-60                  3.9931E-10  3.5325E-16  3.5456E+09  8.8406E+04
Kr-85                  5.2965E-02  1.3500E-07  9.5645E+17  8.8092E+12
Kr-85m                 4.7014E-01  5.7128E-11  4.0475E+14  9.0501E+13
Kr-87                  1.9799E-01  6.9899E-12  4.8384E+13  5.8196E+13
Kr-88                  8.9518E-01  7.1390E-11  4.8855E+14  1.8851E+14
Rb-86                  3.1612E-08  3.8851E-16  2.7205E+09  1.0064E+07
Sr-89                  5.6432E-07  1.9424E-14  1.3143E+11  1.2501E+08
Sr-90                  7.4367E-08  5.4519E-13  3.6480E+12  1.6464E+07
Sr-91                  5.2545E-07  1.4495E-16  9.5926E+08  1.2583E+08
Sr-92                  2.6357E-07  2.0969E-17  1.3726E+08  7.7804E+07
Y-90                   3.0458E-09  5.5983E-18  3.7460E+07  5.0085E+05
Y-91                   7.5149E-09  3.0643E-16  2.0279E+09  1.6393E+06
Y-92                   1.6953E-07  1.7618E-17  1.1533E+08  3.0303E+07
Y-93                   6.1557E-09  1.8450E-18  1.1947E+07  1.4671E+06
Zr-95                  8.7477E-09  4.0720E-16  2.5813E+09  1.9376E+06
Zr-97                  7.2005E-09  3.7666E-18  2.3385E+07  1.6655E+06
Nb-95                  8.7806E-09  2.2455E-16  1.4234E+09  1.9439E+06
Mo-99                  1.0755E-07  2.2424E-16  1.3640E+09  2.4077E+07
Tc-99m                 9.8289E-08  1.8692E-17  1.1371E+08  2.1707E+07
Ru-103                 9.7038E-08  3.0067E-15  1.7579E+10  2.1500E+07
Ru-105                 3.7163E-08  5.5286E-18  3.1709E+07  9.7658E+06
Ru-106                 4.2321E-08  1.2650E-14  7.1866E+10  9.3703E+06
Rh-105                 6.4004E-08  7.5829E-17  4.3491E+08  1.4262E+07
Sb-127                 1.0842E-07  4.0600E-16  1.9252E+09  2.4196E+07
Sb-129                 1.8170E-07  3.2312E-17  1.5084E+08  4.7985E+07
Te-127                 1.1007E-07  4.1708E-17  1.9777E+08  2.4311E+07
Te-127m                1.8942E-08  2.0082E-15  9.5223E+09  4.1935E+06
Te-129                 2.2980E-07  1.0973E-17  5.1226E+07  5.5756E+07
Te-129m                6.2388E-08  2.0709E-15  9.6678E+09  1.3815E+07
Te-131m                2.1407E-07  2.6846E-16  1.2341E+09  4.8572E+07
Te-132                 1.6259E-06  5.3557E-15  2.4434E+10  3.6337E+08
I-131                  1.2629E-03  1.0187E-11  4.6828E+13  3.3364E+11
I-132                  7.1004E-04  6.8788E-14  3.1383E+11  2.5847E+11
I-133                  2.3327E-03  2.0592E-12  9.3238E+12  6.4004E+11
I-134                  1.2857E-04  4.8197E-15  2.1660E+10  1.1645E+11
I-135                  1.6559E-03  4.7151E-13  2.1033E+12  4.9887E+11
Xe-133                 5.5736E+00  2.9776E-08  1.3483E+17  9.3123E+14
Xe-135                 1.9590E+00  7.6710E-10  3.4219E+15  3.4540E+14
Cs-134                 3.4791E-06  2.6890E-12  1.2085E+13  1.1053E+09
Cs-136                 1.0319E-06  1.4079E-14  6.2342E+10  3.2880E+08
Cs-137                 2.8001E-06  3.2192E-11  1.4150E+14  8.8954E+08
Ba-139                 1.2028E-07  7.3532E-18  3.1857E+07  4.8523E+07
Ba-140                 8.6498E-07  1.1815E-14  5.0824E+10  1.9196E+08
La-140                 5.0997E-08  9.1750E-17  3.9467E+08  8.1227E+06
La-141                 4.0521E-09  7.1651E-19  3.0602E+06  1.0898E+06
La-142                 1.3295E-09  9.2873E-20  3.9387E+05  4.9995E+05
Ce-141                 2.0558E-08  7.2150E-16  3.0816E+09  4.5545E+06
Ce-143                 1.8298E-08  2.7553E-17  1.1603E+08  4.1423E+06
Ce-144                 1.6534E-08  5.1839E-15  2.1679E+10  3.6609E+06
Pr-143                 7.8025E-09  1.1587E-16  4.8796E+08  1.7222E+06
Nd-147                 3.1958E-09  3.9504E-17  1.6183E+08  7.0950E+05
Np-239                 2.2314E-07  9.6187E-16  2.4236E+09  5.0049E+07
Pu-238                 6.6776E-11  3.9005E-15  9.8696E+09  1.4784E+04
Pu-239                 5.8512E-12  9.4136E-14  2.3720E+11  1.2952E+03
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Pu-240	1.0954E-11	4.8074E-14	1.2063E+11	2.4252E+03
Pu-241	2.3610E-09	2.2920E-14	5.7273E+10	5.2272E+05
Am-241	1.5831E-12	4.6125E-16	1.1526E+09	3.5038E+02
Cm-242	4.0123E-10	1.2106E-16	3.0126E+08	8.8847E+04
Cm-244	2.6535E-11	3.2798E-16	8.0949E+08	5.8746E+03

CR Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	1.0956E+18	0.0000E+00	
Elemental I (atoms)	3.6613E+13	0.0000E+00	
Organic I (atoms)	2.1359E+13	0.0000E+00	
Aerosols (kg)	3.5811E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.9561E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		7.1746E-13
Total I (Ci)			6.0900E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.5057E+17
Elemental I (atoms)	0.0000E+00	9.7713E+13
Organic I (atoms)	0.0000E+00	4.1160E+13
Aerosols (kg)	0.0000E+00	9.4368E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4616E+18
Elemental I (atoms)	2.0333E+14	6.2884E+12
Organic I (atoms)	8.9456E+13	2.7667E+12
Aerosols (kg)	1.9616E-10	6.0669E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	1.0150E+18	0.0000E+00
Elemental I (atoms)	6.6015E+13	0.0000E+00
Organic I (atoms)	2.2118E+13	0.0000E+00
Aerosols (kg)	6.4617E-11	0.0000E+00

EAB Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.3326E-01	1.1137E+00	3.6815E-01
Accumulated dose (rem)	4.3756E-01	1.5005E+00	4.8468E-01

LPZ Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.7236E-02	1.2444E-01	4.1135E-02
Accumulated dose (rem)	4.8890E-02	1.6765E-01	5.4154E-02

CR Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.7653E-01	5.3364E+00	3.4382E-01
Accumulated dose (rem)	2.1621E-01	6.9325E+00	4.3392E-01

DW Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	3.6262E-03	1.1404E-10	1.1841E+15	4.3620E+15
Co-60	4.3537E-03	3.8515E-09	3.8657E+16	5.2233E+15
Kr-85	1.3511E+06	3.4437E+00	2.4398E+25	1.2340E+21
Kr-85m	6.4586E+06	7.8481E-04	5.5603E+21	1.0527E+22
Kr-87	5.7076E+05	2.0150E-05	1.3948E+20	5.8581E+21
Kr-88	8.6023E+06	6.8603E-04	4.6947E+21	2.0435E+22
Rb-86	1.2408E-01	1.5250E-09	1.0679E+16	3.1486E+17
Sr-89	6.1391E+00	2.1131E-07	1.4298E+18	7.3930E+18

Sr-90	8.1087E-01	5.9445E-06	3.9776E+19	9.7276E+17
Sr-91	4.2791E+00	1.1805E-09	7.8119E+15	8.3866E+18
Sr-92	1.0331E+00	8.2193E-11	5.3802E+14	6.9588E+18
Y-90	5.9745E-02	1.0981E-10	7.3479E+14	1.0230E+16
Y-91	8.4766E-02	3.4564E-09	2.2874E+16	9.3845E+16
Y-92	1.5289E+00	1.5889E-10	1.0401E+15	1.1548E+17
Y-93	5.1007E-02	1.5288E-11	9.8998E+13	9.7091E+16
Zr-95	9.5210E-02	4.4319E-09	2.8094E+16	1.1456E+17
Zr-97	6.6632E-02	3.4856E-11	2.1640E+14	1.0532E+17
Nb-95	9.5737E-02	2.4483E-09	1.5520E+16	1.1485E+17
Mo-99	1.1244E+00	2.3445E-09	1.4261E+16	1.4476E+18
Tc-99m	1.0507E+00	1.9982E-10	1.2155E+15	1.2890E+18
Ru-103	1.0550E+00	3.2688E-08	1.9112E+17	1.2718E+18
Ru-105	2.1702E-01	3.2284E-11	1.8516E+14	7.4514E+17
Ru-106	4.6131E-01	1.3789E-07	7.8336E+17	5.5369E+17
Rh-105	6.6790E-01	7.9130E-10	4.5384E+15	8.4917E+17
Sb-127	1.1473E+00	4.2961E-09	2.0371E+16	1.4475E+18
Sb-129	1.0428E+00	1.8544E-10	8.6570E+14	3.6869E+18
Te-127	1.1901E+00	4.5096E-10	2.1384E+15	1.4398E+18
Te-127m	2.0654E-01	2.1897E-08	1.0383E+17	2.4776E+17
Te-129	1.5769E+00	7.5299E-11	3.5152E+14	3.8569E+18
Te-129m	6.7903E-01	2.2540E-08	1.0522E+17	8.1640E+17
Te-131m	2.1281E+00	2.6688E-09	1.2269E+16	2.9819E+18
Te-132	1.7111E+01	5.6362E-08	2.5714E+17	2.1787E+19
I-131	3.1342E+04	2.5281E-04	1.1622E+21	1.7357E+20
I-132	7.5270E+03	7.2921E-07	3.3268E+18	2.2774E+20
I-133	5.1366E+04	4.5344E-05	2.0531E+20	3.4651E+20
I-134	1.3688E+02	5.1311E-09	2.3060E+16	2.0781E+20
I-135	2.7389E+04	7.7989E-06	3.4790E+19	2.9932E+20
Xe-133	1.3923E+08	7.4385E-01	3.3681E+24	1.2958E+23
Xe-135	3.7849E+07	1.4821E-02	6.6114E+22	4.5222E+22
Cs-134	1.3739E+01	1.0619E-05	4.7722E+19	3.4482E+19
Cs-136	4.0396E+00	5.5118E-08	2.4406E+17	1.0299E+19
Cs-137	1.1059E+01	1.2714E-04	5.5888E+20	2.7749E+19
Ba-139	1.7545E-01	1.0726E-11	4.6471E+13	6.3347E+18
Ba-140	9.3464E+00	1.2767E-07	5.4916E+17	1.1384E+19
La-140	1.0291E+00	1.8515E-09	7.9643E+15	1.2300E+17
La-141	2.1820E-02	3.8584E-12	1.6479E+13	8.5907E+16
La-142	2.4000E-03	1.6765E-13	7.1101E+11	6.0276E+16
Ce-141	2.2355E-01	7.8457E-09	3.3509E+16	2.6940E+17
Ce-143	1.8343E-01	2.7622E-10	1.1632E+15	2.5342E+17
Ce-144	1.8021E-01	5.6501E-08	2.3629E+17	2.1633E+17
Pr-143	8.5766E-02	1.2737E-09	5.3637E+15	1.0116E+17
Nd-147	3.4481E-02	4.2623E-10	1.7461E+15	4.2102E+16
Np-239	2.3166E+00	9.9858E-09	2.5161E+16	3.0179E+18
Pu-238	7.2812E-04	4.2531E-08	1.0762E+17	8.7344E+14
Pu-239	6.3831E-05	1.0269E-06	2.5876E+18	7.6509E+13
Pu-240	1.1944E-04	5.2418E-07	1.3153E+18	1.4329E+14
Pu-241	2.5743E-02	2.4991E-07	6.2447E+17	3.0884E+16
Am-241	1.7278E-05	5.0341E-09	1.2579E+16	2.0691E+13
Cm-242	4.3718E-03	1.3191E-09	3.2825E+15	5.2508E+15
Cm-244	2.8932E-04	3.5761E-09	8.8263E+15	3.4709E+14

DW Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7843E+25	0.0000E+00	
Elemental I (atoms)	4.0774E+19	4.8566E+22	
Organic I (atoms)	1.3622E+21	0.0000E+00	
Aerosols (kg)	1.4691E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.5890E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1212E-05
Total I (Ci)			1.1776E+05

DW to RB Transport Group Inventory:

Time (h) = 8.0000 Leakage Transport	
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1895E+18
Aerosols (kg)	1.6818E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8343E+17
Organic I (atoms)	0.0000E+00	2.0850E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8343E+17
Organic I (atoms)	0.0000E+00	2.0850E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

RB Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	2.0744E-02	6.5237E-10	6.7735E+15	1.8645E+13
Co-60	2.4906E-02	2.2033E-08	2.2114E+17	2.2357E+13
Kr-85	5.7618E+03	1.4686E-02	1.0405E+23	2.6630E+18
Kr-85m	2.7543E+04	3.3469E-06	2.3712E+19	1.8811E+19
Kr-87	2.4341E+03	8.5931E-08	5.9482E+17	6.1852E+18
Kr-88	3.6685E+04	2.9256E-06	2.0021E+19	3.2433E+19
Rb-86	1.4707E+00	1.8075E-08	1.2657E+17	1.4300E+15
Sr-89	3.5120E+01	1.2088E-06	8.1796E+18	3.1584E+16
Sr-90	4.6387E+00	3.4006E-05	2.2754E+20	4.1637E+15
Sr-91	2.4479E+01	6.7529E-09	4.4689E+16	2.8418E+16
Sr-92	5.9101E+00	4.7019E-10	3.0778E+15	1.4281E+16
Y-90	3.7296E-01	6.8550E-10	4.5869E+15	1.8980E+14
Y-91	4.9035E-01	1.9995E-08	1.3232E+17	4.2245E+14
Y-92	9.8996E+00	1.0288E-09	6.7344E+15	8.0106E+15
Y-93	2.9179E-01	8.7459E-11	5.6633E+14	3.3341E+14
Zr-95	5.4466E-01	2.5353E-08	1.6072E+17	4.8963E+14
Zr-97	3.8118E-01	1.9940E-10	1.2379E+15	3.9437E+14
Nb-95	5.4767E-01	1.4006E-08	8.8784E+16	4.9159E+14
Mo-99	6.4324E+00	1.3412E-08	8.1583E+16	5.9839E+15
Tc-99m	6.0106E+00	1.1431E-09	6.9534E+15	5.4524E+15
Ru-103	6.0351E+00	1.8699E-07	1.0933E+18	5.4306E+15
Ru-105	1.2415E+00	1.8469E-10	1.0592E+15	1.9810E+15
Ru-106	2.6389E+00	7.8879E-07	4.4813E+18	2.3693E+15
Rh-105	3.8208E+00	4.5267E-09	2.5962E+16	3.5521E+15
Sb-127	6.5631E+00	2.4576E-08	1.1654E+17	6.0431E+15
Sb-129	5.9655E+00	1.0608E-09	4.9523E+15	9.6852E+15
Te-127	6.8083E+00	2.5798E-09	1.2233E+16	6.1308E+15
Te-127m	1.1815E+00	1.2526E-07	5.9397E+17	1.0605E+15
Te-129	9.0210E+00	4.3076E-10	2.0109E+15	1.1897E+16
Te-129m	3.8844E+00	1.2894E-07	6.0195E+17	3.4916E+15
Te-131m	1.2174E+01	1.5267E-08	7.0184E+16	1.1828E+16
Te-132	9.7887E+01	3.2243E-07	1.4710E+18	9.0552E+16
I-131	8.0023E+02	6.4548E-06	2.9673E+19	7.1024E+17
I-132	2.3262E+02	2.2536E-08	1.0282E+17	4.6492E+17
I-133	1.3118E+03	1.1580E-06	5.2434E+18	1.2959E+18
I-134	3.4958E+00	1.3104E-10	5.8892E+14	1.6515E+17
I-135	6.9947E+02	1.9917E-07	8.8849E+17	9.0821E+17
Xe-133	5.9372E+05	3.1719E-03	1.4362E+22	2.7789E+20
Xe-135	1.6109E+05	6.3080E-05	2.8139E+20	8.9079E+19
Cs-134	1.6284E+02	1.2586E-04	5.6564E+20	1.5746E+17
Cs-136	4.7881E+01	6.5330E-07	2.8928E+18	4.6666E+16
Cs-137	1.3108E+02	1.5070E-03	6.6243E+21	1.2673E+17
Ba-139	1.0037E+00	6.1360E-11	2.6584E+14	7.8017E+15
Ba-140	5.3467E+01	7.3034E-07	3.1416E+18	4.8362E+16
La-140	6.4432E+00	1.1592E-08	4.9864E+16	3.1899E+15
La-141	1.2483E-01	2.2072E-11	9.4271E+13	2.1608E+14
La-142	1.3729E-02	9.5908E-13	4.0674E+12	8.1727E+13
Ce-141	1.2785E+00	4.4870E-08	1.9164E+17	1.1505E+15
Ce-143	1.0493E+00	1.5801E-09	6.6544E+15	1.0121E+15
Ce-144	1.0309E+00	3.2322E-07	1.3517E+18	9.2565E+14
Pr-143	4.9166E-01	7.3013E-09	3.0748E+16	4.3728E+14
Nd-147	1.9725E-01	2.4383E-09	9.9889E+15	1.7864E+14

Np-239	1.3252E+01	5.7125E-08	1.4394E+17	1.2403E+16
Pu-238	4.1653E-03	2.4330E-07	6.1563E+17	3.7387E+12
Pu-239	3.6515E-04	5.8747E-06	1.4803E+19	3.2762E+11
Pu-240	6.8329E-04	2.9986E-06	7.5243E+18	6.1332E+11
Pu-241	1.4727E-01	1.4296E-06	3.5723E+18	1.3219E+14
Am-241	9.8851E-05	2.8801E-08	7.1969E+16	8.8646E+10
Cm-242	2.5009E-02	7.5459E-09	1.8778E+16	2.2462E+13
Cm-244	1.6551E-03	2.0458E-08	5.0492E+16	1.4856E+12

RB Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1874E+23	0.0000E+00	
Elemental I (atoms)	1.5919E+18	0.0000E+00	
Organic I (atoms)	5.9193E+18	0.0000E+00	
Aerosols (kg)	1.6884E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.1000E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.6284E-08
Total I (Ci)			3.0476E+03

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1895E+18
Aerosols (kg)	1.6818E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	5.9242E-10	1.8631E-17	1.9344E+08	3.3507E+05
Co-60	7.1127E-10	6.2923E-16	6.3155E+09	4.0189E+05
Kr-85	2.4244E-01	6.1794E-07	4.3780E+18	8.4185E+13
Kr-85m	1.1589E+00	1.4083E-10	9.9773E+14	5.5470E+14
Kr-87	1.0242E-01	3.6157E-12	2.5028E+13	1.4695E+14
Kr-88	1.5436E+00	1.2310E-10	8.4242E+14	9.1379E+14
Rb-86	4.3607E-08	5.3593E-16	3.7528E+09	3.0850E+07
Sr-89	1.0030E-06	3.4523E-14	2.3360E+11	5.6751E+08
Sr-90	1.3247E-07	9.7116E-13	6.4983E+12	7.4850E+07
Sr-91	6.9909E-07	1.9285E-16	1.2762E+09	4.7904E+08
Sr-92	1.6878E-07	1.3428E-17	8.7897E+07	2.0156E+08
Y-90	1.0684E-08	1.9638E-17	1.3140E+08	4.1192E+06
Y-91	1.4010E-08	5.7126E-16	3.7805E+09	7.6905E+06
Y-92	2.8395E-07	2.9510E-17	1.9317E+08	1.6494E+08
Y-93	8.3331E-09	2.4977E-18	1.6174E+07	5.6425E+06
Zr-95	1.5555E-08	7.2405E-16	4.5898E+09	8.7987E+06
Zr-97	1.0886E-08	5.6944E-18	3.5353E+07	6.8418E+06
Nb-95	1.5641E-08	3.9998E-16	2.5355E+09	8.8371E+06
Mo-99	1.8370E-07	3.8302E-16	2.3299E+09	1.0661E+08
Tc-99m	1.7165E-07	3.2645E-17	1.9858E+08	9.7692E+07
Ru-103	1.7235E-07	5.3403E-15	3.1223E+10	9.7563E+07
Ru-105	3.5454E-08	5.2743E-18	3.0250E+07	3.0872E+07
Ru-106	7.5364E-08	2.2527E-14	1.2798E+11	4.2590E+07
Rh-105	1.0912E-07	1.2928E-16	7.4145E+08	6.3391E+07
Sb-127	1.8743E-07	7.0185E-16	3.3281E+09	1.0794E+08
Sb-129	1.7036E-07	3.0296E-17	1.4143E+08	1.5030E+08
Te-127	1.9443E-07	7.3675E-17	3.4935E+08	1.1006E+08
Te-127m	3.3743E-08	3.5773E-15	1.6963E+10	1.9065E+07
Te-129	2.5763E-07	1.2302E-17	5.7428E+07	1.9373E+08
Te-129m	1.1093E-07	3.6824E-15	1.7191E+10	6.2751E+07
Te-131m	3.4768E-07	4.3601E-16	2.0044E+09	2.0846E+08
Te-132	2.7955E-06	9.2080E-15	4.2009E+10	1.6156E+09
I-131	3.0325E-03	2.4460E-11	1.1245E+14	1.4761E+12

I-132	6.5491E-04	6.3447E-14	2.8946E+11	6.4414E+11
I-133	4.9720E-03	4.3891E-12	1.9873E+13	2.6129E+12
I-134	1.3250E-05	4.9667E-16	2.2321E+09	1.4514E+11
I-135	2.6511E-03	7.5490E-13	3.3675E+12	1.6958E+12
Xe-133	2.4975E+01	1.3343E-07	6.0415E+17	8.7612E+15
Xe-135	6.7336E+00	2.6368E-09	1.1762E+16	2.6968E+15
Cs-134	4.8283E-06	3.7318E-12	1.6771E+13	3.4003E+09
Cs-136	1.4197E-06	1.9370E-14	8.5772E+10	1.0064E+09
Cs-137	3.8865E-06	4.4682E-11	1.9641E+14	2.7367E+09
Ba-139	2.8663E-08	1.7523E-18	7.5920E+06	8.5710E+07
Ba-140	1.5269E-06	2.0857E-14	8.9718E+10	8.6772E+08
La-140	1.8460E-07	3.3212E-16	1.4286E+09	7.0140E+07
La-141	3.5648E-09	6.3035E-19	2.6922E+06	3.3015E+06
La-142	3.9209E-10	2.7390E-20	1.1616E+05	9.4692E+05
Ce-141	3.6511E-08	1.2814E-15	5.4728E+09	2.0669E+07
Ce-143	2.9968E-08	4.5127E-17	1.9004E+08	1.7870E+07
Ce-144	2.9441E-08	9.2306E-15	3.8603E+10	1.6639E+07
Pr-143	1.4042E-08	2.0853E-16	8.7817E+08	7.8813E+06
Nd-147	5.6332E-09	6.9633E-17	2.8527E+08	3.2042E+06
Np-239	3.7847E-07	1.6314E-15	4.1107E+09	2.2065E+08
Pu-238	1.1895E-10	6.9483E-15	1.7581E+10	6.7210E+04
Pu-239	1.0428E-11	1.6777E-13	4.2274E+11	5.8902E+03
Pu-240	1.9514E-11	8.5637E-14	2.1488E+11	1.1026E+04
Pu-241	4.2058E-09	4.0828E-14	1.0202E+11	2.3763E+06
Am-241	2.8230E-12	8.2252E-16	2.0553E+09	1.5940E+03
Cm-242	7.1423E-10	2.1550E-16	5.3627E+08	4.0373E+05
Cm-244	4.7267E-11	5.8424E-16	1.4420E+09	2.6707E+04

CR Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	4.9958E+18	0.0000E+00	
Elemental I (atoms)	5.0739E+13	0.0000E+00	
Organic I (atoms)	8.4401E+13	0.0000E+00	
Aerosols (kg)	5.0007E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3779E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6104E-12
Total I (Ci)			1.1324E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.5826E+18
Elemental I (atoms)	0.0000E+00	2.4374E+14
Organic I (atoms)	0.0000E+00	2.4895E+14
Aerosols (kg)	0.0000E+00	2.3600E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0309E+19
Elemental I (atoms)	5.2203E+14	1.6145E+13
Organic I (atoms)	5.4296E+14	1.6793E+13
Aerosols (kg)	5.0527E-10	1.5627E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	9.8826E+18	0.0000E+00
Elemental I (atoms)	2.0555E+14	0.0000E+00
Organic I (atoms)	1.7842E+14	0.0000E+00
Aerosols (kg)	2.0160E-10	0.0000E+00

EAB Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3907E+00	9.5871E+00	1.6876E+00
Accumulated dose (rem)	1.8282E+00	1.1088E+01	2.1722E+00

LPZ Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.0411E-01	3.6910E-01	1.1554E-01
Accumulated dose (rem)	1.5300E-01	5.3675E-01	1.6969E-01

CR Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.8464E-01	2.1074E+01	1.0377E+00
Accumulated dose (rem)	6.0086E-01	2.8007E+01	1.4717E+00

DW Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	3.5450E-03	1.1148E-10	1.1575E+15	4.3696E+15
Co-60	4.2831E-03	3.7890E-09	3.8030E+16	5.2325E+15
Kr-85	1.3294E+06	3.3884E+00	2.4006E+25	4.0892E+21
Kr-85m	5.3460E+05	6.4962E-05	4.6025E+20	1.5593E+22
Kr-87	9.1606E+01	3.2340E-09	2.2386E+16	5.9973E+21
Kr-88	1.7048E+05	1.3596E-05	9.3040E+19	2.5017E+22
Rb-86	1.1911E-01	1.4639E-09	1.0251E+16	3.1512E+17
Sr-89	5.9859E+00	2.0604E-07	1.3942E+18	7.4059E+18
Sr-90	7.9787E-01	5.8492E-06	3.9138E+19	9.7447E+17
Sr-91	1.3103E+00	3.6145E-10	2.3920E+15	8.3919E+18
Sr-92	1.6977E-02	1.3506E-12	8.8409E+12	6.9593E+18
Y-90	1.7689E-01	3.2513E-10	2.1756E+15	1.0479E+16
Y-91	9.0958E-02	3.7090E-09	2.4545E+16	9.4033E+16
Y-92	1.6077E-01	1.6708E-11	1.0937E+14	1.1693E+17
Y-93	1.6740E-02	5.0174E-12	3.2490E+13	9.7157E+16
Zr-95	9.3014E-02	4.3297E-09	2.7446E+16	1.1476E+17
Zr-97	3.4016E-02	1.7794E-11	1.1047E+14	1.0542E+17
Nb-95	9.4183E-02	2.4086E-09	1.5268E+16	1.1506E+17
Mo-99	9.3531E-01	1.9501E-09	1.1863E+16	1.4497E+18
Tc-99m	9.3702E-01	1.7820E-10	1.0840E+15	1.2910E+18
Ru-103	1.0260E+00	3.1789E-08	1.8586E+17	1.2741E+18
Ru-105	1.7567E-02	2.6133E-12	1.4989E+13	7.4531E+17
Ru-106	4.5336E-01	1.3551E-07	7.6987E+17	5.5466E+17
Rh-105	5.0027E-01	5.9270E-10	3.3994E+15	8.5041E+17
Sb-127	1.0012E+00	3.7492E-09	1.7778E+16	1.4498E+18
Sb-129	7.8755E-02	1.4005E-11	6.5379E+13	3.6877E+18
Te-127	1.1176E+00	4.2348E-10	2.0081E+15	1.4422E+18
Te-127m	2.0319E-01	2.1541E-08	1.0215E+17	2.4820E+17
Te-129	6.8143E-01	3.2539E-11	1.5190E+14	3.8586E+18
Te-129m	6.6015E-01	2.1913E-08	1.0230E+17	8.1782E+17
Te-131m	1.4469E+00	1.8145E-09	8.3416E+15	2.9857E+18
Te-132	1.4611E+01	4.8128E-08	2.1957E+17	2.1821E+19
I-131	2.9118E+04	2.3487E-04	1.0797E+21	2.3795E+20
I-132	7.6850E+01	7.4451E-09	3.3966E+16	2.3105E+20
I-133	2.9656E+04	2.6179E-05	1.1854E+20	4.3071E+20
I-134	4.3178E-04	1.6186E-14	7.2740E+10	2.0783E+20
I-135	5.0339E+03	1.4334E-06	6.3942E+18	3.2744E+20
Xe-133	1.2546E+08	6.7024E-01	3.0348E+24	4.1128E+23
Xe-135	1.1002E+07	4.3080E-03	1.9217E+22	9.1517E+22
Cs-134	1.3511E+01	1.0443E-05	4.6931E+19	3.4511E+19
Cs-136	3.8373E+00	5.2357E-08	2.3184E+17	1.0308E+19
Cs-137	1.0882E+01	1.2510E-04	5.4992E+20	2.7772E+19
Ba-139	5.5300E-05	3.3808E-15	1.4647E+10	6.3347E+18
Ba-140	8.8693E+00	1.2115E-07	5.2113E+17	1.1404E+19
La-140	2.9554E+00	5.3170E-09	2.2871E+16	1.2724E+17
La-141	1.2773E-03	2.2586E-13	9.6464E+11	8.5923E+16
La-142	1.7742E-06	1.2394E-16	5.2562E+08	6.0277E+16
Ce-141	2.1697E-01	7.6148E-09	3.2523E+16	2.6987E+17
Ce-143	1.2898E-01	1.9422E-10	8.1793E+14	2.5375E+17
Ce-144	1.7704E-01	5.5507E-08	2.3213E+17	2.1671E+17
Pr-143	8.6703E-02	1.2876E-09	5.4223E+15	1.0134E+17
Nd-147	3.2532E-02	4.0213E-10	1.6474E+15	4.2174E+16
Np-239	1.8734E+00	8.0754E-09	2.0348E+16	3.0223E+18
Pu-238	7.1653E-04	4.1854E-08	1.0590E+17	8.7498E+14
Pu-239	6.2919E-05	1.0123E-06	2.5506E+18	7.6644E+13
Pu-240	1.1753E-04	5.1580E-07	1.2943E+18	1.4354E+14
Pu-241	2.5330E-02	2.4589E-07	6.1443E+17	3.0938E+16
Am-241	1.7076E-05	4.9752E-09	1.2432E+16	2.0728E+13

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Cm-242                4.2897E-03  1.2943E-09  3.2209E+15  5.2600E+15
Cm-244                2.8467E-04  3.5187E-09  8.6845E+15  3.4770E+14

DW Transport Group Inventory:
Time (h) =  24.0000    Atmosphere     Sump
Noble gases (atoms)    2.7061E+25  0.0000E+00
Elemental I (atoms)    3.4945E+19  4.8566E+22
Organic I (atoms)      1.1675E+21  0.0000E+00
Aerosols (kg)          1.4446E-04  4.8987E+01
Dose Effective (Ci/cc) I-131 (Thyroid)         8.0519E-06
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   8.8209E-06
Total I (Ci)                                   6.3885E+04

DW to  RB Transport Group Inventory:
Time (h) =  24.0000  Leakage Transport

Noble gases (atoms)      3.9365E+23
Elemental I (atoms)      2.1204E+18
Organic I (atoms)        1.8784E+19
Aerosols (kg)            1.6832E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2356E+23
Elemental I (atoms)    0.0000E+00  9.9876E+17
Organic I (atoms)      0.0000E+00  5.9379E+18
Aerosols (kg)          0.0000E+00  8.8403E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2356E+23
Elemental I (atoms)    0.0000E+00  9.9876E+17
Organic I (atoms)      0.0000E+00  5.9379E+18
Aerosols (kg)          0.0000E+00  8.8403E-04

RB Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms      Decay
Co-58                 2.0645E-02  6.4925E-10  6.7411E+15  6.2751E+13
Co-60                 2.4943E-02  2.2066E-08  2.2147E+17  7.5478E+13
Kr-85                 1.9163E+04  4.8844E-02  3.4605E+23  2.9909E+19
Kr-85m                7.7063E+03  9.3642E-07  6.6344E+18  5.7133E+19
Kr-87                 1.3205E+00  4.6618E-11  3.2269E+14  6.9467E+18
Kr-88                 2.4574E+03  1.9598E-07  1.3412E+18  6.3382E+19
Rb-86                 1.4360E+00  1.7648E-08  1.2358E+17  4.5273E+15
Sr-89                 3.4860E+01  1.1999E-06  8.1191E+18  1.0616E+17
Sr-90                 4.6465E+00  3.4063E-05  2.2793E+20  1.4058E+16
Sr-91                 7.6305E+00  2.1050E-09  1.3930E+16  5.9224E+16
Sr-92                 9.8866E-02  7.8656E-12  5.1486E+13  1.7309E+16
Y-90                  1.0564E+00  1.9417E-09  1.2992E+16  1.6937E+15
Y-91                  5.3511E-01  2.1820E-08  1.4440E+17  1.5230E+15
Y-92                  9.8655E-01  1.0253E-10  6.7112E+14  1.7106E+16
Y-93                  9.7486E-02  2.9220E-11  1.8921E+14  7.1114E+14
Zr-95                 5.4168E-01  2.5214E-08  1.5984E+17  1.6473E+15
Zr-97                 1.9810E-01  1.0363E-10  6.4335E+14  9.9054E+14
Nb-95                 5.4849E-01  1.4027E-08  8.8916E+16  1.6594E+15
Mo-99                 5.4469E+00  1.1357E-08  6.9084E+16  1.8614E+16
Tc-99m                5.4569E+00  1.0378E-09  6.3127E+15  1.7219E+16
Ru-103                5.9748E+00  1.8513E-07  1.0824E+18  1.8229E+16
Ru-105                1.0230E-01  1.5219E-11  8.7288E+13  2.9536E+15
Ru-106                2.6402E+00  7.8916E-07  4.4834E+18  7.9950E+15
Rh-105                2.9134E+00  3.4517E-09  1.9797E+16  1.0730E+16
Sb-127                5.8309E+00  2.1834E-08  1.0353E+17  1.9235E+16
Sb-129                4.5864E-01  8.1559E-11  3.8074E+14  1.4260E+16
Te-127                6.5085E+00  2.4662E-09  1.1694E+16  1.9977E+16
Te-127m               1.1833E+00  1.2545E-07  5.9486E+17  3.5805E+15
Te-129                3.9684E+00  1.8949E-10  8.8461E+14  2.1903E+16
Te-129m               3.8445E+00  1.2762E-07  5.9575E+17  1.1730E+16
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Te-131m	8.4264E+00	1.0567E-08	4.8578E+16	3.3537E+16
Te-132	8.5091E+01	2.8028E-07	1.2787E+18	2.8522E+17
I-131	1.0495E+03	8.4656E-06	3.8917E+19	2.7023E+18
I-132	1.0273E+02	9.9522E-09	4.5404E+16	7.2420E+17
I-133	1.0686E+03	9.4336E-07	4.2715E+18	3.8654E+18
I-134	1.5559E-05	5.8324E-16	2.6212E+09	1.6576E+17
I-135	1.8140E+02	5.1652E-08	2.3041E+17	1.7389E+18
Xe-133	1.8085E+06	9.6616E-03	4.3747E+22	2.9442E+21
Xe-135	1.5864E+05	6.2120E-05	2.7711E+20	4.8245E+20
Cs-134	1.6288E+02	1.2589E-04	5.6577E+20	5.0456E+17
Cs-136	4.6260E+01	6.3119E-07	2.7949E+18	1.4698E+17
Cs-137	1.3118E+02	1.5082E-03	6.6295E+21	4.0620E+17
Ba-139	3.2204E-04	1.9689E-14	8.5300E+10	8.0675E+15
Ba-140	5.1652E+01	7.0554E-07	3.0349E+18	1.6037E+17
La-140	1.7633E+01	3.1724E-08	1.3646E+17	2.8755E+16
La-141	7.4386E-03	1.3153E-12	5.6177E+12	3.0479E+14
La-142	1.0332E-05	7.2178E-16	3.0610E+09	8.5793E+13
Ce-141	1.2632E+00	4.4333E-08	1.8935E+17	3.8592E+15
Ce-143	7.5113E-01	1.1311E-09	4.7633E+15	2.9131E+15
Ce-144	1.0310E+00	3.2325E-07	1.3519E+18	3.1229E+15
Pr-143	5.0591E-01	7.5129E-09	3.1639E+16	1.5008E+15
Nd-147	1.8945E-01	2.3418E-09	9.5938E+15	5.9067E+14
Np-239	1.0910E+01	4.7028E-08	1.1850E+17	3.8071E+16
Pu-238	4.1728E-03	2.4374E-07	6.1674E+17	1.2624E+13
Pu-239	3.6642E-04	5.8951E-06	1.4854E+19	1.1072E+12
Pu-240	6.8448E-04	3.0038E-06	7.5373E+18	2.0709E+12
Pu-241	1.4751E-01	1.4320E-06	3.5782E+18	4.4632E+14
Am-241	9.9454E-05	2.8977E-08	7.2408E+16	2.9995E+11
Cm-242	2.4982E-02	7.5376E-09	1.8757E+16	7.5735E+13
Cm-244	1.6578E-03	2.0492E-08	5.0576E+16	5.0160E+12

RB Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	3.9008E+23	0.0000E+00	
Elemental I (atoms)	1.7407E+18	0.0000E+00	
Organic I (atoms)	1.6936E+19	0.0000E+00	
Aerosols (kg)	1.6888E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.6753E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0350E-08
Total I (Ci)			2.4023E+03

DW to RB Transport Group Inventory:

Time (h) = 24.0000 Leakage Transport	
Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1204E+18
Organic I (atoms)	1.8784E+19
Aerosols (kg)	1.6832E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	1.1102E-10	3.4913E-18	3.6251E+07	7.7582E+05
Co-60	1.3413E-10	1.1866E-16	1.1910E+09	9.3237E+05
Kr-85	3.6373E-01	9.2708E-07	6.5682E+18	6.3668E+14
Kr-85m	1.4627E-01	1.7774E-11	1.2592E+14	1.3782E+15
Kr-87	2.5064E-05	8.8484E-16	6.1249E+09	1.6645E+14
Kr-88	4.6644E-02	3.7198E-12	2.5456E+13	1.6077E+15
Rb-86	7.2528E-09	8.9136E-17	6.2417E+08	6.1262E+07
Sr-89	1.8746E-07	6.4525E-15	4.3661E+10	1.3129E+09
Sr-90	2.4987E-08	1.8318E-13	1.2257E+12	1.7366E+08
Sr-91	4.1033E-08	1.1319E-17	7.4909E+07	8.2833E+08
Sr-92	5.3165E-10	4.2297E-20	2.7687E+05	2.4556E+08

Y-90	5.6777E-09	1.0436E-17	6.9829E+07	1.7586E+07
Y-91	2.8769E-09	1.1731E-16	7.7633E+08	1.8575E+07
Y-92	5.2993E-09	5.5073E-19	3.6050E+06	2.7905E+08
Y-93	5.2423E-10	1.5713E-19	1.0175E+06	9.8944E+06
Zr-95	2.9129E-09	1.3559E-16	8.5952E+08	2.0368E+07
Zr-97	1.0653E-09	5.5725E-19	3.4596E+06	1.3242E+07
Nb-95	2.9495E-09	7.5429E-17	4.7815E+08	2.0499E+07
Mo-99	2.9291E-08	6.1072E-17	3.7150E+08	2.3511E+08
Tc-99m	2.9344E-08	5.5806E-18	3.3947E+07	2.1733E+08
Ru-103	3.2130E-08	9.9553E-16	5.8206E+09	2.2553E+08
Ru-105	5.5014E-10	8.1841E-20	4.6939E+05	4.3405E+07
Ru-106	1.4198E-08	4.2437E-15	2.4110E+10	9.8776E+07
Rh-105	1.5667E-08	1.8562E-17	1.0646E+08	1.3726E+08
Sb-127	3.1356E-08	1.1741E-16	5.5676E+08	2.4145E+08
Sb-129	2.4663E-09	4.3859E-19	2.0475E+06	2.0960E+08
Te-127	3.5000E-08	1.3262E-17	6.2886E+07	2.4971E+08
Te-127m	6.3632E-09	6.7460E-16	3.1988E+09	4.4230E+07
Te-129	2.1340E-08	1.0190E-18	4.7570E+06	3.0797E+08
Te-129m	2.0674E-08	6.8626E-16	3.2037E+09	1.4513E+08
Te-131m	4.5313E-08	5.6826E-17	2.6123E+08	4.3431E+08
Te-132	4.5758E-07	1.5072E-15	6.8762E+09	3.5904E+09
I-131	2.7864E-03	2.2476E-11	1.0332E+14	6.3300E+12
I-132	5.4060E-05	5.2373E-15	2.3894E+10	9.6178E+11
I-133	2.8377E-03	2.5050E-12	1.1342E+13	8.8395E+12
I-135	4.8167E-04	1.3716E-13	6.1183E+11	3.6908E+12
Xe-133	3.4325E+01	1.8338E-07	8.3032E+17	6.2910E+16
Xe-135	3.0088E+00	1.1782E-09	5.2558E+15	1.0856E+16
Cs-134	8.2268E-07	6.3585E-13	2.8576E+12	6.7985E+09
Cs-136	2.3365E-07	3.1880E-15	1.4117E+10	1.9925E+09
Cs-137	6.6258E-07	7.6175E-12	3.3484E+13	5.4727E+09
Ba-140	2.7776E-07	3.7941E-15	1.6320E+10	1.9907E+09
La-140	9.4774E-08	1.7051E-16	7.3345E+08	2.9997E+08
La-141	4.0001E-11	7.0731E-21	3.0209E+04	4.4763E+06
Ce-141	6.7930E-09	2.3841E-16	1.0182E+09	4.7759E+07
Ce-143	4.0392E-09	6.0824E-18	2.5615E+07	3.7575E+07
Ce-144	5.5443E-09	1.7383E-15	7.2696E+09	3.8585E+07
Pr-143	2.7204E-09	4.0399E-17	1.7013E+08	1.8471E+07
Nd-147	1.0188E-09	1.2593E-17	5.1591E+07	7.3380E+06
Np-239	5.8670E-08	2.5290E-16	6.3723E+08	4.8261E+08
Pu-238	2.2439E-11	1.3107E-15	3.3165E+09	1.5594E+05
Pu-239	1.9704E-12	3.1701E-14	7.9877E+10	1.3674E+04
Pu-240	3.6808E-12	1.6153E-14	4.0532E+10	2.5580E+04
Pu-241	7.9324E-10	7.7004E-15	1.9242E+10	5.5132E+06
Am-241	5.3481E-13	1.5582E-16	3.8937E+08	3.7030E+03
Cm-242	1.3434E-10	4.0533E-17	1.0087E+08	9.3587E+05
Cm-244	8.9150E-12	1.1019E-16	2.7197E+08	6.1961E+04

CR Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	7.4040E+18	0.0000E+00	
Elemental I (atoms)	9.6313E+12	0.0000E+00	
Organic I (atoms)	1.0554E+14	0.0000E+00	
Aerosols (kg)	8.5460E-12	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.1444E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2542E-12
Total I (Ci)			6.1598E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5113E+19
Elemental I (atoms)	0.0000E+00	4.0625E+14
Organic I (atoms)	0.0000E+00	1.1938E+15
Aerosols (kg)	0.0000E+00	3.9310E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.6503E+19
Elemental I (atoms)	8.7671E+14	2.7115E+13

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Organic I (atoms)      2.6051E+15  8.0569E+13
Aerosols (kg)          8.4816E-10  2.6232E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    7.4134E+19  0.0000E+00
Elemental I (atoms)    4.1768E+14  0.0000E+00
Organic I (atoms)      1.1550E+15  0.0000E+00
Aerosols (kg)          4.1076E-10  0.0000E+00

EAB Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.6126E-01  8.6748E+00  9.2765E-01
Accumulated dose (rem)  2.4895E+00  1.9762E+01  3.0999E+00

LPZ Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0651E-02  1.7802E-01  2.6117E-02
Accumulated dose (rem)  1.7365E-01  7.1478E-01  1.9581E-01

CR Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.5212E-02  8.6598E+00  3.5123E-01
Accumulated dose (rem)  6.8607E-01  3.6667E+01  1.8229E+00

DW Compartment Nuclide Inventory:

Time (h) =  48.0000       Ci            kg          Atoms       Decay
Co-58                  3.4683E-03  1.0907E-10  1.1325E+15  4.3809E+15
Co-60                  4.2301E-03  3.7421E-09  3.7560E+16  5.2461E+15
Kr-85                  1.3132E+06  3.3471E+00  2.3714E+25  8.3120E+21
Kr-85m                 1.2886E+04  1.5658E-06  1.1094E+19  1.6041E+22
Kr-87                  1.8853E-04  6.6557E-15  4.6071E+10  5.9973E+21
Kr-88                  4.8140E+02  3.8391E-08  2.6273E+17  2.5109E+22
Rb-86                  1.1339E-01  1.3936E-09  9.7584E+15  3.1549E+17
Sr-89                  5.8334E+00  2.0079E-07  1.3586E+18  7.4248E+18
Sr-90                  7.8823E-01  5.7785E-06  3.8665E+19  9.7700E+17
Sr-91                  2.2470E-01  6.1987E-11  4.1022E+14  8.3939E+18
Sr-92                  3.6195E-05  2.8796E-15  1.8849E+10  6.9594E+18
Y-90                   3.1617E-01  5.8113E-10  3.8885E+15  1.1264E+16
Y-91                   9.1824E-02  3.7443E-09  2.4779E+16  9.4327E+16
Y-92                   1.8661E-03  1.9394E-13  1.2695E+12  1.1705E+17
Y-93                   3.1855E-03  9.5480E-13  6.1827E+12  9.7183E+16
Zr-95                  9.0906E-02  4.2316E-09  2.6824E+16  1.1506E+17
Zr-97                  1.2559E-02  6.5694E-12  4.0785E+13  1.0549E+17
Nb-95                  9.3002E-02  2.3784E-09  1.5077E+16  1.1536E+17
Mo-99                  7.1819E-01  1.4974E-09  9.1089E+15  1.4524E+18
Tc-99m                 7.3496E-01  1.3977E-10  8.5023E+14  1.2936E+18
Ru-103                 9.9590E-01  3.0858E-08  1.8042E+17  1.2773E+18
Ru-105                 4.0950E-04  6.0920E-14  3.4940E+11  7.4532E+17
Ru-106                 4.4707E-01  1.3363E-07  7.5919E+17  5.5610E+17
Rh-105                 3.1029E-01  3.6761E-10  2.1084E+15  8.5169E+17
Sb-127                 8.2623E-01  3.0939E-09  1.4671E+16  1.4527E+18
Sb-129                 1.6544E-03  2.9420E-13  1.3734E+12  3.6878E+18
Te-127                 9.7995E-01  3.7132E-10  1.7607E+15  1.4454E+18
Te-127m                2.0051E-01  2.1257E-08  1.0080E+17  2.4884E+17
Te-129                 5.5487E-01  2.6495E-11  1.2369E+14  3.8600E+18
Te-129m                6.3899E-01  2.1211E-08  9.9020E+16  8.1990E+17
Te-131m                8.2106E-01  1.0297E-09  4.7334E+15  2.9892E+18
Te-132                 1.1669E+01  3.8438E-08  1.7536E+17  2.1863E+19
I-131                  2.6392E+04  2.1288E-04  9.7864E+20  3.2658E+20
I-132                  1.3971E+01  1.3535E-09  6.1750E+15  2.3112E+20
I-133                  1.3168E+04  1.1624E-05  5.2634E+19  4.9562E+20
I-135                  4.0147E+02  1.1432E-07  5.0996E+17  3.3329E+20
Xe-133                 1.0861E+08  5.8023E-01  2.6272E+24  7.8467E+23
Xe-135                 1.7444E+06  6.8307E-04  3.0470E+21  1.0758E+23
Cs-134                 1.3336E+01  1.0308E-05  4.6324E+19  3.4554E+19
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Cs-136	3.5958E+00	4.9062E-08	2.1725E+17	1.0320E+19
Cs-137	1.0750E+01	1.2359E-04	5.4328E+20	2.7807E+19
Ba-139	3.1321E-10	1.9148E-20	8.2960E+04	6.3347E+18
Ba-140	8.2987E+00	1.1336E-07	4.8761E+17	1.1431E+19
La-140	4.8373E+00	8.7028E-09	3.7435E+16	1.3973E+17
La-141	1.8310E-05	3.2377E-15	1.3828E+10	8.5924E+16
La-142	3.6095E-11	2.5215E-21	1.0693E+04	6.0277E+16
Ce-141	2.0985E-01	7.3647E-09	3.1455E+16	2.7056E+17
Ce-143	7.6974E-02	1.1591E-10	4.8813E+14	2.5407E+17
Ce-144	1.7449E-01	5.4707E-08	2.2878E+17	2.1727E+17
Pr-143	8.6375E-02	1.2827E-09	5.4018E+15	1.0162E+17
Nd-147	3.0174E-02	3.7299E-10	1.5280E+15	4.2274E+16
Np-239	1.3790E+00	5.9441E-09	1.4978E+16	3.0275E+18
Pu-238	7.0800E-04	4.1356E-08	1.0464E+17	8.7726E+14
Pu-239	6.2289E-05	1.0021E-06	2.5251E+18	7.6844E+13
Pu-240	1.1612E-04	5.0960E-07	1.2787E+18	1.4391E+14
Pu-241	2.5022E-02	2.4290E-07	6.0697E+17	3.1019E+16
Am-241	1.6980E-05	4.9474E-09	1.2363E+16	2.0782E+13
Cm-242	4.2202E-03	1.2733E-09	3.1686E+15	5.2736E+15
Cm-244	2.8122E-04	3.4761E-09	8.5793E+15	3.4860E+14

DW Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	2.6344E+25	0.0000E+00	
Elemental I (atoms)	2.9930E+19	4.8566E+22	
Organic I (atoms)	9.9990E+20	0.0000E+00	
Aerosols (kg)	1.4262E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		6.7323E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		7.0502E-06
Total I (Ci)			3.9976E+04

DW to RB Transport Group Inventory:

Time (h) = 48.0000	Leakage Transport
Noble gases (atoms)	5.9392E+23
Elemental I (atoms)	2.3630E+18
Organic I (atoms)	2.6889E+19
Aerosols (kg)	1.6843E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8483E+23
Elemental I (atoms)	0.0000E+00	1.0730E+18
Organic I (atoms)	0.0000E+00	8.4175E+18
Aerosols (kg)	0.0000E+00	8.8436E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8483E+23
Elemental I (atoms)	0.0000E+00	1.0730E+18
Organic I (atoms)	0.0000E+00	8.4175E+18
Aerosols (kg)	0.0000E+00	8.8436E-04

RB Compartment Nuclide Inventory:

Time (h) = 48.0000	Ci	kg	Atoms	Decay
Co-58	2.0470E-02	6.4375E-10	6.6840E+15	1.2847E+14
Co-60	2.4966E-02	2.2086E-08	2.2168E+17	1.5525E+14
Kr-85	2.9068E+04	7.4091E-02	5.2492E+23	1.0769E+20
Kr-85m	2.8524E+02	3.4661E-08	2.4557E+17	6.4498E+19
Kr-87	4.1732E-06	1.4733E-16	1.0198E+09	6.9471E+18
Kr-88	1.0656E+01	8.4982E-10	5.8156E+15	6.4851E+19
Rb-86	1.3845E+00	1.7015E-08	1.1915E+17	9.0350E+15
Sr-89	3.4429E+01	1.1851E-06	8.0187E+18	2.1691E+17
Sr-90	4.6521E+00	3.4105E-05	2.2820E+20	2.8922E+16
Sr-91	1.3262E+00	3.6585E-10	2.4211E+15	7.0741E+16
Sr-92	2.1363E-04	1.6996E-14	1.1125E+11	1.7360E+16
Y-90	1.8863E+00	3.4670E-09	2.3199E+16	6.3734E+15

Y-91	5.4729E-01	2.2316E-08	1.4768E+17	3.2599E+15
Y-92	1.1472E-02	1.1922E-12	7.8038E+12	1.7821E+16
Y-93	1.8801E-02	5.6352E-12	3.6491E+13	8.6398E+14
Zr-95	5.3653E-01	2.4975E-08	1.5832E+17	3.3707E+15
Zr-97	7.4121E-02	3.8773E-11	2.4072E+14	1.3937E+15
Nb-95	5.4890E-01	1.4037E-08	8.8983E+16	3.4128E+15
Mo-99	4.2388E+00	8.8379E-09	5.3761E+16	3.4015E+16
Tc-99m	4.3377E+00	8.2494E-10	5.0181E+15	3.2074E+16
Ru-103	5.8778E+00	1.8212E-07	1.0648E+18	3.7174E+16
Ru-105	2.4169E-03	3.5955E-13	2.0621E+12	3.0389E+15
Ru-106	2.6386E+00	7.8869E-07	4.4807E+18	1.6433E+16
Rh-105	1.8313E+00	2.1697E-09	1.2444E+16	1.8189E+16
Sb-127	4.8764E+00	1.8260E-08	8.6587E+16	3.6305E+16
Sb-129	9.7642E-03	1.7364E-12	8.1059E+12	1.4633E+16
Te-127	5.7837E+00	2.1915E-09	1.0392E+16	3.8998E+16
Te-127m	1.1834E+00	1.2546E-07	5.9491E+17	7.3634E+15
Te-129	3.2748E+00	1.5637E-10	7.3001E+14	3.0259E+16
Te-129m	3.7713E+00	1.2519E-07	5.8442E+17	2.3904E+16
Te-131m	4.8459E+00	6.0771E-09	2.7937E+16	5.4227E+16
Te-132	6.8873E+01	2.2686E-07	1.0350E+18	5.3041E+17
I-131	1.1624E+03	9.3760E-06	4.3102E+19	6.2598E+18
I-132	8.2209E+01	7.9643E-09	3.6335E+16	9.7855E+17
I-133	5.7964E+02	5.1168E-07	2.3169E+18	6.4390E+18
I-135	1.7672E+01	5.0322E-09	2.2448E+16	1.9652E+18
Xe-133	2.4042E+06	1.2844E-02	5.8157E+22	9.7908E+21
Xe-135	3.8642E+04	1.5131E-05	6.7499E+19	7.6065E+20
Cs-134	1.6283E+02	1.2585E-04	5.6560E+20	1.0252E+18
Cs-136	4.3903E+01	5.9903E-07	2.6525E+18	2.9106E+17
Cs-137	1.3126E+02	1.5090E-03	6.6332E+21	8.2570E+17
Ba-139	1.8486E-09	1.1301E-19	4.8963E+05	8.0676E+15
Ba-140	4.8979E+01	6.6904E-07	2.8779E+18	3.2119E+17
La-140	2.8829E+01	5.1867E-08	2.2311E+17	1.0315E+17
La-141	1.0807E-04	1.9109E-14	8.1614E+10	3.1033E+14
La-142	2.1303E-10	1.4882E-20	6.3113E+04	8.5796E+13
Ce-141	1.2382E+00	4.3455E-08	1.8560E+17	7.8575E+15
Ce-143	4.5430E-01	6.8410E-10	2.8809E+15	4.8004E+15
Ce-144	1.0298E+00	3.2288E-07	1.3503E+18	6.4171E+15
Pr-143	5.1072E-01	7.5844E-09	3.1940E+16	3.1279E+15
Nd-147	1.7809E-01	2.2014E-09	9.0184E+15	1.1780E+15
Np-239	8.1388E+00	3.5082E-08	8.8398E+16	6.8304E+16
Pu-238	4.1786E-03	2.4408E-07	6.1760E+17	2.5973E+13
Pu-239	3.6763E-04	5.9146E-06	1.4903E+19	2.2805E+12
Pu-240	6.8535E-04	3.0077E-06	7.5470E+18	4.2605E+12
Pu-241	1.4768E-01	1.4336E-06	3.5823E+18	9.1817E+14
Am-241	1.0023E-04	2.9203E-08	7.2972E+16	6.1908E+11
Cm-242	2.4907E-02	7.5152E-09	1.8701E+16	1.5548E+14
Cm-244	1.6598E-03	2.0516E-08	5.0635E+16	1.0319E+13

RB Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	5.8315E+23	0.0000E+00	
Elemental I (atoms)	1.7353E+18	0.0000E+00	
Organic I (atoms)	2.2232E+19	0.0000E+00	
Aerosols (kg)	1.6888E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7546E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9391E-08
Total I (Ci)			1.8419E+03

DW to RB Transport Group Inventory:

Time (h) = 48.0000 Leakage Transport	
Noble gases (atoms)	5.9392E+23
Elemental I (atoms)	2.3630E+18
Organic I (atoms)	2.6889E+19
Aerosols (kg)	1.6843E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00

Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 48.0000	Ci	kg	Atoms	Decay
Co-58	1.2991E-11	4.0854E-19	4.2418E+06	8.5662E+05
Co-60	1.5844E-11	1.4016E-17	1.4068E+08	1.0303E+06
Kr-85	1.5425E-01	3.9315E-07	2.7854E+18	1.1252E+15
Kr-85m	1.5136E-03	1.8392E-13	1.3031E+12	1.4336E+15
Kr-88	5.6545E-05	4.5094E-15	3.0859E+10	1.6197E+15
Rb-86	8.1340E-10	9.9966E-18	7.0001E+07	6.6450E+07
Sr-89	2.1849E-08	7.5207E-16	5.0889E+09	1.4492E+09
Sr-90	2.9524E-09	2.1644E-14	1.4482E+11	1.9191E+08
Sr-91	8.4164E-10	2.3218E-19	1.5365E+06	8.4567E+08
Y-90	1.1967E-09	2.1995E-18	1.4717E+07	2.2929E+07
Y-91	3.4721E-10	1.4158E-17	9.3694E+07	2.0701E+07
Y-93	1.1932E-11	3.5763E-21	2.3158E+04	1.0122E+07
Zr-95	3.4049E-10	1.5850E-17	1.0047E+08	2.2487E+07
Zr-97	4.7039E-11	2.4606E-20	1.5276E+05	1.3799E+07
Nb-95	3.4834E-10	8.9084E-18	5.6471E+07	2.2653E+07
Mo-99	2.6900E-09	5.6088E-18	3.4118E+07	2.5462E+08
Tc-99m	2.7528E-09	5.2353E-19	3.1846E+06	2.3608E+08
Ru-103	3.7302E-09	1.1558E-16	6.7577E+08	2.4885E+08
Ru-106	1.6745E-09	5.0052E-16	2.8436E+09	1.0914E+08
Rh-105	1.1622E-09	1.3769E-18	7.8972E+06	1.4695E+08
Sb-127	3.0947E-09	1.1588E-17	5.4950E+07	2.6288E+08
Te-127	3.6705E-09	1.3908E-18	6.5950E+06	2.7340E+08
Te-127m	7.5102E-10	7.9620E-17	3.7754E+08	4.8876E+07
Te-129	2.0783E-09	9.9239E-20	4.6328E+05	3.1851E+08
Te-129m	2.3934E-09	7.9447E-17	3.7089E+08	1.6012E+08
Te-131m	3.0753E-09	3.8567E-18	1.7729E+07	4.6148E+08
Te-132	4.3709E-08	1.4397E-16	6.5683E+08	3.8994E+09
I-131	1.0262E-03	8.2774E-12	3.8052E+13	9.7908E+12
I-132	3.3576E-06	3.2528E-16	1.4840E+09	9.9115E+11
I-133	5.1191E-04	4.5190E-13	2.0461E+12	1.1404E+13
I-135	1.5607E-05	4.4442E-15	1.9825E+10	3.9313E+12
Xe-133	1.2757E+01	6.8153E-08	3.0859E+17	1.0617E+17
Xe-135	2.0490E-01	8.0236E-11	3.5792E+14	1.2766E+16
Cs-134	9.5667E-08	7.3941E-14	3.3230E+11	7.3950E+09
Cs-136	2.5794E-08	3.5194E-16	1.5584E+09	2.1587E+09
Cs-137	7.7116E-08	8.8658E-13	3.8972E+12	5.9533E+09
Ba-140	3.1083E-08	4.2459E-16	1.8264E+09	2.1895E+09
La-140	1.8290E-08	3.2906E-17	1.4154E+08	3.8580E+08
Ce-141	7.8579E-10	2.7578E-17	1.1779E+08	5.2682E+07
Ce-143	2.8831E-10	4.3415E-19	1.8283E+06	4.0038E+07
Ce-144	6.5355E-10	2.0491E-16	8.5693E+08	4.2631E+07
Pr-143	3.2410E-10	4.8129E-18	2.0269E+07	2.0467E+07
Nd-147	1.1302E-10	1.3971E-18	5.7233E+06	8.0648E+06
Np-239	5.1651E-09	2.2264E-17	5.6100E+07	5.2109E+08
Pu-238	2.6518E-12	1.5490E-16	3.9194E+08	1.7233E+05
Pu-239	2.3331E-13	3.7536E-15	9.4580E+09	1.5114E+04
Pu-240	4.3494E-13	1.9088E-15	4.7895E+09	2.8269E+04
Pu-241	9.3722E-11	9.0981E-16	2.2734E+09	6.0927E+06
Am-241	6.3608E-14	1.8533E-17	4.6310E+07	4.0946E+03
Cm-242	1.5807E-11	4.7693E-18	1.1868E+07	1.0339E+06
Cm-244	1.0533E-12	1.3020E-17	3.2134E+07	6.8473E+04

CR Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	3.0944E+18	0.0000E+00	
Elemental I (atoms)	1.4686E+12	0.0000E+00	
Organic I (atoms)	3.8638E+13	0.0000E+00	
Aerosols (kg)	9.9453E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8876E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0715E-13
Total I (Ci)			1.5571E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported

```
Noble gases (atoms)    0.0000E+00  4.1852E+19
Elemental I (atoms)    0.0000E+00  4.4134E+14
Organic I (atoms)      0.0000E+00  1.8720E+15
Aerosols (kg)          0.0000E+00  4.2216E-10

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =  48.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.4165E+19
Elemental I (atoms)    9.5330E+14  2.9483E+13
Organic I (atoms)      4.0852E+15  1.2635E+14
Aerosols (kg)          9.1157E-10  2.8193E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  48.0000     Filtered   Transported
Noble gases (atoms)    1.3277E+20  0.0000E+00
Elemental I (atoms)    4.6291E+14  0.0000E+00
Organic I (atoms)      1.9394E+15  0.0000E+00
Aerosols (kg)          4.4929E-10  0.0000E+00

EAB Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.9802E-01  7.9808E+00  7.4201E-01
Accumulated dose (rem)  2.9875E+00  2.7743E+01  3.8419E+00

LPZ Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5553E-02  1.6378E-01  2.0560E-02
Accumulated dose (rem)  1.8920E-01  8.7856E-01  2.1637E-01

CR Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.7517E-02  7.2566E+00  2.7937E-01
Accumulated dose (rem)  7.4359E-01  4.3923E+01  2.1023E+00

DW Compartment Nuclide Inventory:

Time (h) =  72.0000       Ci           kg          Atoms      Decay
Co-58                  3.3932E-03  1.0671E-10  1.1080E+15  4.3918E+15
Co-60                  4.1777E-03  3.6959E-09  3.7095E+16  5.2596E+15
Kr-85                  1.2972E+06  3.3063E+00  2.3425E+25  1.2483E+22
Kr-85m                 3.1061E+02  3.7743E-08  2.6740E+17  1.6052E+22
Kr-87                  3.8799E-10  1.3698E-20  9.4815E+04  5.9973E+21
Kr-88                  1.3594E+00  1.0841E-10  7.4189E+14  2.5110E+22
Rb-86                  1.0794E-01  1.3266E-09  9.2896E+15  3.1584E+17
Sr-89                  5.6847E+00  1.9567E-07  1.3240E+18  7.4432E+18
Sr-90                  7.7871E-01  5.7087E-06  3.8198E+19  9.7951E+17
Sr-91                  3.8536E-02  1.0631E-11  7.0350E+13  8.3942E+18
Sr-92                  7.7171E-08  6.1396E-18  4.0188E+07  6.9594E+18
Y-90                   4.2009E-01  7.7213E-10  5.1665E+15  1.2435E+16
Y-91                   9.0170E-02  3.6768E-09  2.4332E+16  9.4618E+16
Y-92                   1.7677E-05  1.8371E-15  1.2025E+10  1.1705E+17
Y-93                   6.0619E-04  1.8169E-13  1.1766E+12  9.7188E+16
Zr-95                  8.8846E-02  4.1357E-09  2.6216E+16  1.1535E+17
Zr-97                  4.6365E-03  2.4254E-12  1.5058E+13  1.0552E+17
Nb-95                  9.1818E-02  2.3481E-09  1.4885E+16  1.1565E+17
Mo-99                  5.5147E-01  1.1498E-09  6.9944E+15  1.4544E+18
Tc-99m                 5.6531E-01  1.0751E-10  6.5398E+14  1.2955E+18
Ru-103                 9.6672E-01  2.9954E-08  1.7513E+17  1.2804E+18
Ru-105                 9.5459E-06  1.4201E-15  8.1448E+09  7.4532E+17
Ru-106                 4.4087E-01  1.3178E-07  7.4865E+17  5.5752E+17
Rh-105                 1.9155E-01  2.2694E-10  1.3016E+15  8.5247E+17
Sb-127                 6.8180E-01  2.5531E-09  1.2106E+16  1.4551E+18
Sb-129                 3.4754E-05  6.1802E-15  2.8851E+10  3.6878E+18
Te-127                 8.4559E-01  3.2041E-10  1.5193E+15  1.4483E+18
Te-127m                1.9770E-01  2.0959E-08  9.9383E+16  2.4948E+17
```

Te-129	5.3480E-01	2.5537E-11	1.1921E+14	3.8613E+18
Te-129m	6.1842E-01	2.0528E-08	9.5833E+16	8.2191E+17
Te-131m	4.6591E-01	5.8428E-10	2.6860E+15	2.9912E+18
Te-132	9.3199E+00	3.0699E-08	1.4005E+17	2.1896E+19
I-131	2.3921E+04	1.9295E-04	8.8701E+20	4.0692E+20
I-132	1.1124E+01	1.0777E-09	4.9168E+15	2.3116E+20
I-133	5.8469E+03	5.1614E-06	2.3371E+19	5.2444E+20
I-135	3.2019E+01	9.1174E-09	4.0671E+16	3.3376E+20
Xe-133	9.4020E+07	5.0229E-01	2.2744E+24	1.1079E+24
Xe-135	2.7651E+05	1.0828E-04	4.8300E+20	1.1013E+23
Cs-134	1.3164E+01	1.0174E-05	4.5725E+19	3.4597E+19
Cs-136	3.3695E+00	4.5974E-08	2.0358E+17	1.0331E+19
Cs-137	1.0620E+01	1.2210E-04	5.3672E+20	2.7841E+19
Ba-140	7.7648E+00	1.0606E-07	4.5624E+17	1.1457E+19
La-140	5.8805E+00	1.0580E-08	4.5509E+16	1.5681E+17
La-141	2.6248E-07	4.6412E-17	1.9823E+08	8.5924E+16
Ce-141	2.0295E-01	7.1227E-09	3.0421E+16	2.7122E+17
Ce-143	4.5937E-02	6.9173E-11	2.9131E+14	2.5427E+17
Ce-144	1.7197E-01	5.3918E-08	2.2549E+17	2.1783E+17
Pr-143	8.4058E-02	1.2483E-09	5.2569E+15	1.0189E+17
Nd-147	2.7988E-02	3.4596E-10	1.4173E+15	4.2367E+16
Np-239	1.0150E+00	4.3754E-09	1.1025E+16	3.0313E+18
Pu-238	6.9956E-04	4.0863E-08	1.0340E+17	8.7951E+14
Pu-239	6.1634E-05	9.9159E-07	2.4985E+18	7.7042E+13
Pu-240	1.1473E-04	5.0348E-07	1.2633E+18	1.4428E+14
Pu-241	2.4718E-02	2.3995E-07	5.9959E+17	3.1098E+16
Am-241	1.6885E-05	4.9196E-09	1.2293E+16	2.0836E+13
Cm-242	4.1517E-03	1.2527E-09	3.1173E+15	5.2870E+15
Cm-244	2.7782E-04	3.4339E-09	8.4753E+15	3.4949E+14

DW Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5700E+25	0.0000E+00	
Elemental I (atoms)	2.6410E+19	4.8566E+22	
Organic I (atoms)	8.8229E+20	0.0000E+00	
Aerosols (kg)	1.4083E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.8612E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.0005E-06
Total I (Ci)			2.9811E+04

DW to RB Transport Group Inventory:

Time (h) = 72.0000	Leakage Transport
Noble gases (atoms)	7.8910E+23
Elemental I (atoms)	2.5742E+18
Organic I (atoms)	3.3944E+19
Aerosols (kg)	1.6853E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.4453E+23
Elemental I (atoms)	0.0000E+00	1.1376E+18
Organic I (atoms)	0.0000E+00	1.0576E+19
Aerosols (kg)	0.0000E+00	8.8469E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.4453E+23
Elemental I (atoms)	0.0000E+00	1.1376E+18
Organic I (atoms)	0.0000E+00	1.0576E+19
Aerosols (kg)	0.0000E+00	8.8469E-04

RB Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	2.0296E-02	6.3828E-10	6.6272E+15	1.9363E+14
Co-60	2.4988E-02	2.2106E-08	2.2188E+17	2.3510E+14
Kr-85	3.8851E+04	9.9026E-02	7.0158E+23	2.1694E+20

Kr-85m	9.3028E+00	1.1304E-09	8.0089E+15	6.4759E+19
Kr-88	4.0714E-02	3.2469E-12	2.2220E+13	6.4857E+19
Rb-86	1.3348E+00	1.6404E-08	1.1487E+17	1.3381E+16
Sr-89	3.4002E+01	1.1704E-06	7.9194E+18	3.2629E+17
Sr-90	4.6577E+00	3.4146E-05	2.2848E+20	4.3803E+16
Sr-91	2.3050E-01	6.3585E-11	4.2079E+14	7.2743E+16
Sr-92	4.6159E-07	3.6723E-17	2.4038E+08	1.7360E+16
Y-90	2.5283E+00	4.6470E-09	3.1094E+16	1.3393E+16
Y-91	5.4461E-01	2.2207E-08	1.4696E+17	5.0065E+15
Y-92	1.0990E-04	1.1421E-14	7.4761E+10	1.7829E+16
Y-93	3.6258E-03	1.0868E-12	7.0374E+12	8.9346E+14
Zr-95	5.3142E-01	2.4737E-08	1.5681E+17	5.0778E+15
Zr-97	2.7733E-02	1.4507E-11	9.0065E+13	1.5446E+15
Nb-95	5.4919E-01	1.4045E-08	8.9031E+16	5.1674E+15
Mo-99	3.2986E+00	6.8775E-09	4.1836E+16	4.6001E+16
Tc-99m	3.3813E+00	6.4305E-10	3.9117E+15	4.3733E+16
Ru-103	5.7823E+00	1.7916E-07	1.0475E+18	5.5812E+16
Ru-105	5.7098E-05	8.4941E-15	4.8717E+10	3.0409E+15
Ru-106	2.6370E+00	7.8820E-07	4.4780E+18	2.4866E+16
Rh-105	1.1457E+00	1.3574E-09	7.7851E+15	2.2863E+16
Sb-127	4.0781E+00	1.5271E-08	7.2412E+16	5.0580E+16
Sb-129	2.0787E-04	3.6966E-14	1.7257E+11	1.4641E+16
Te-127	5.0578E+00	1.9165E-09	9.0876E+15	5.5727E+16
Te-127m	1.1825E+00	1.2536E-07	5.9445E+17	1.1145E+16
Te-129	3.1988E+00	1.5275E-10	7.1307E+14	3.8044E+16
Te-129m	3.6990E+00	1.2279E-07	5.7321E+17	3.5844E+16
Te-131m	2.7868E+00	3.4948E-09	1.6066E+16	6.6125E+16
Te-132	5.5746E+01	1.8362E-07	8.3772E+17	7.2887E+17
I-131	1.2471E+03	1.0059E-05	4.6244E+19	1.0131E+19
I-132	6.6538E+01	6.4462E-09	2.9409E+16	1.1840E+18
I-133	3.0462E+02	2.6891E-07	1.2176E+18	7.8131E+18
I-135	1.6682E+00	4.7501E-10	2.1190E+15	1.9870E+18
Xe-133	2.8160E+06	1.5044E-02	6.8120E+22	1.8229E+22
Xe-135	8.2878E+03	3.2454E-06	1.4477E+19	8.2453E+20
Cs-134	1.6278E+02	1.2581E-04	5.6542E+20	1.5457E+18
Cs-136	4.1666E+01	5.6850E-07	2.5173E+18	4.2781E+17
Cs-137	1.3133E+02	1.5098E-03	6.6368E+21	1.2454E+18
Ba-140	4.6444E+01	6.3441E-07	2.7289E+18	4.7368E+17
La-140	3.5358E+01	6.3613E-08	2.7364E+17	2.0543E+17
La-141	1.5700E-06	2.7761E-16	1.1857E+09	3.1041E+14
Ce-141	1.2136E+00	4.2592E-08	1.8191E+17	1.1776E+16
Ce-143	2.7476E-01	4.1375E-10	1.7424E+15	5.9418E+15
Ce-144	1.0286E+00	3.2250E-07	1.3487E+18	9.7073E+15
Pr-143	5.0367E-01	7.4796E-09	3.1499E+16	4.7505E+15
Nd-147	1.6741E-01	2.0693E-09	8.4774E+15	1.7301E+15
Np-239	6.0713E+00	2.6171E-08	6.5942E+16	9.0857E+16
Pu-238	4.1843E-03	2.4442E-07	6.1845E+17	3.9341E+13
Pu-239	3.6865E-04	5.9311E-06	1.4945E+19	3.4575E+12
Pu-240	6.8622E-04	3.0115E-06	7.5565E+18	6.4528E+12
Pu-241	1.4785E-01	1.4352E-06	3.5864E+18	1.3906E+15
Am-241	1.0100E-04	2.9429E-08	7.3537E+16	9.4070E+11
Cm-242	2.4833E-02	7.4927E-09	1.8645E+16	2.3499E+14
Cm-244	1.6617E-03	2.0540E-08	5.0694E+16	1.5628E+13

RB Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	7.6972E+23	0.0000E+00	
Elemental I (atoms)	1.7494E+18	0.0000E+00	
Organic I (atoms)	2.6517E+19	0.0000E+00	
Aerosols (kg)	1.6890E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8690E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9668E-08
Total I (Ci)			1.6199E+03

DW to RB Transport Group Inventory:

Time (h) = 72.0000	Leakage Transport
Noble gases (atoms)	7.8910E+23
Elemental I (atoms)	2.5742E+18
Organic I (atoms)	3.3944E+19
Aerosols (kg)	1.6853E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	4.1920E-12	1.3183E-19	1.3688E+06	8.8101E+05
Co-60	5.1612E-12	4.5659E-18	4.5827E+07	1.0602E+06
Kr-85	1.6154E-01	4.1173E-07	2.9170E+18	1.6332E+15
Kr-85m	3.8679E-05	4.7001E-15	3.3299E+10	1.4349E+15
Kr-88	1.6928E-07	1.3500E-17	9.2385E+07	1.6198E+15
Rb-86	2.5214E-10	3.0988E-18	2.1699E+07	6.7953E+07
Sr-89	7.0230E-09	2.4174E-16	1.6357E+09	1.4901E+09
Sr-90	9.6202E-10	7.0526E-15	4.7191E+10	1.9747E+08
Sr-91	4.7607E-11	1.3133E-20	8.6911E+04	8.4653E+08
Y-90	5.2203E-10	9.5951E-19	6.4203E+06	2.5483E+07
Y-91	1.1243E-10	4.5845E-18	3.0339E+07	2.1354E+07
Zr-95	1.0976E-10	5.1092E-18	3.2388E+07	2.3126E+07
Zr-97	5.7280E-12	2.9963E-21	1.8602E+04	1.3861E+07
Nb-95	1.1343E-10	2.9008E-18	1.8389E+07	2.3309E+07
Mo-99	6.8130E-10	1.4205E-18	8.6409E+06	2.5920E+08
Tc-99m	6.9839E-10	1.3282E-19	8.0793E+05	2.4054E+08
Ru-103	1.1943E-09	3.7005E-17	2.1636E+08	2.5583E+08
Ru-106	5.4465E-10	1.6280E-16	9.2489E+08	1.1229E+08
Rh-105	2.3664E-10	2.8036E-19	1.6080E+06	1.4877E+08
Sb-127	8.4231E-10	3.1541E-18	1.4956E+07	2.6830E+08
Te-127	1.0446E-09	3.9583E-19	1.8770E+06	2.7974E+08
Te-127m	2.4423E-10	2.5893E-17	1.2278E+08	5.0291E+07
Te-129	6.6070E-10	3.1549E-20	1.4728E+05	3.2143E+08
Te-129m	7.6400E-10	2.5361E-17	1.1839E+08	1.6459E+08
Te-131m	5.7559E-10	7.2182E-19	3.3183E+06	4.6616E+08
Te-132	1.1514E-08	3.7926E-17	1.7303E+08	3.9751E+09
I-131	9.6622E-04	7.7937E-12	3.5828E+13	1.2978E+13
I-132	9.3366E-07	9.0452E-17	4.1266E+08	9.9800E+11
I-133	2.3614E-04	2.0845E-13	9.4387E+11	1.2545E+13
I-135	1.2931E-06	3.6822E-16	1.6426E+09	3.9497E+12
Xe-133	1.1708E+01	6.2550E-08	2.8322E+17	1.4550E+17
Xe-135	3.4435E-02	1.3484E-11	6.0150E+13	1.3074E+16
Cs-134	3.0749E-08	2.3766E-14	1.0681E+11	7.5744E+09
Cs-136	7.8706E-09	1.0739E-16	4.7552E+08	2.2060E+09
Cs-137	2.4808E-08	2.8521E-13	1.2537E+12	6.0979E+09
Ba-140	9.5928E-09	1.3103E-16	5.6364E+08	2.2468E+09
La-140	7.3011E-09	1.3135E-17	5.6503E+07	4.2332E+08
Ce-141	2.5066E-10	8.7972E-18	3.7573E+07	5.4150E+07
Ce-143	5.6751E-11	8.5457E-20	3.5989E+05	4.0485E+07
Ce-144	2.1245E-10	6.6610E-17	2.7857E+08	4.3862E+07
Pr-143	1.0402E-10	1.5447E-18	6.5053E+06	2.1074E+07
Nd-147	3.4577E-11	4.2741E-19	1.7510E+06	8.2725E+06
Np-239	1.2540E-09	5.4054E-18	1.3620E+07	5.2975E+08
Pu-238	8.6424E-13	5.0482E-17	1.2774E+08	1.7733E+05
Pu-239	7.6143E-14	1.2250E-15	3.0867E+09	1.5554E+04
Pu-240	1.4173E-13	6.2200E-16	1.5607E+09	2.9089E+04
Pu-241	3.0537E-11	2.9644E-16	7.4074E+08	6.2693E+06
Am-241	2.0862E-14	6.0783E-18	1.5188E+07	4.2148E+03
Cm-242	5.1291E-12	1.5476E-18	3.8511E+06	1.0636E+06
Cm-244	3.4322E-13	4.2423E-18	1.0470E+07	7.0459E+04

CR Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	3.2003E+18	0.0000E+00	
Elemental I (atoms)	6.6461E+11	0.0000E+00	
Organic I (atoms)	3.6106E+13	0.0000E+00	
Aerosols (kg)	3.1992E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.5160E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5996E-13
Total I (Ci)			1.2046E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9947E+19
Elemental I (atoms)	0.0000E+00	4.5580E+14
Organic I (atoms)	0.0000E+00	2.5263E+15
Aerosols (kg)	0.0000E+00	4.3190E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3488E+20
Elemental I (atoms)	9.8484E+14	3.0459E+13
Organic I (atoms)	5.5132E+15	1.7051E+14
Aerosols (kg)	9.3283E-10	2.8850E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	1.9143E+20	0.0000E+00
Elemental I (atoms)	4.7905E+14	0.0000E+00
Organic I (atoms)	2.6362E+15	0.0000E+00
Aerosols (kg)	4.6036E-10	0.0000E+00

EAB Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.2397E-01	7.1581E+00	6.4235E-01
Accumulated dose (rem)	3.4115E+00	3.4901E+01	4.4842E+00

LPZ Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3240E-02	1.4690E-01	1.7722E-02
Accumulated dose (rem)	2.0244E-01	1.0255E+00	2.3409E-01

CR Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.9094E-02	6.5194E+00	2.4799E-01
Accumulated dose (rem)	7.9268E-01	5.0443E+01	2.3502E+00

DW Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	3.3198E-03	1.0440E-10	1.0840E+15	4.4025E+15
Co-60	4.1260E-03	3.6501E-09	3.6636E+16	5.2728E+15
Kr-85	1.2814E+06	3.2660E+00	2.3139E+25	1.6604E+22
Kr-85m	7.4869E+00	9.0976E-10	6.4455E+15	1.6052E+22
Kr-88	3.8386E-03	3.0613E-13	2.0949E+12	2.5110E+22
Rb-86	1.0276E-01	1.2629E-09	8.8433E+15	3.1618E+17
Sr-89	5.5399E+00	1.9069E-07	1.2903E+18	7.4612E+18
Sr-90	7.6930E-01	5.6397E-06	3.7737E+19	9.8198E+17
Sr-91	6.6087E-03	1.8231E-12	1.2065E+13	8.3943E+18
Sr-92	1.6453E-10	1.3090E-20	8.5685E+04	6.9594E+18
Y-90	4.9709E-01	9.1366E-10	6.1135E+15	1.3894E+16
Y-91	8.8126E-02	3.5935E-09	2.3781E+16	9.4903E+16
Y-92	1.6087E-07	1.6718E-17	1.0943E+08	1.1705E+17
Y-93	1.1536E-04	3.4576E-14	2.2389E+11	9.7189E+16
Zr-95	8.6832E-02	4.0419E-09	2.5622E+16	1.1563E+17
Zr-97	1.7118E-03	8.9542E-13	5.5591E+12	1.0553E+17
Nb-95	9.0631E-02	2.3178E-09	1.4692E+16	1.1594E+17
Mo-99	4.2346E-01	8.8291E-10	5.3707E+15	1.4559E+18
Tc-99m	4.3414E-01	8.2564E-11	5.0223E+14	1.2970E+18
Ru-103	9.3840E-01	2.9076E-08	1.7000E+17	1.2835E+18
Ru-105	2.2253E-07	3.3104E-17	1.8986E+08	7.4532E+17
Ru-106	4.3475E-01	1.2995E-07	7.3827E+17	5.5892E+17
Rh-105	1.1822E-01	1.4007E-10	8.0334E+14	8.5296E+17

Sb-127	5.6263E-01	2.1068E-09	9.9901E+15	1.4570E+18
Sb-129	7.3006E-07	1.2983E-16	6.0607E+08	3.6878E+18
Te-127	7.3075E-01	2.7689E-10	1.3130E+15	1.4507E+18
Te-127m	1.9479E-01	2.0650E-08	9.7920E+16	2.5010E+17
Te-129	5.1754E-01	2.4713E-11	1.1537E+14	3.8626E+18
Te-129m	5.9852E-01	1.9868E-08	9.2748E+16	8.2385E+17
Te-131m	2.6438E-01	3.3155E-10	1.5241E+15	2.9924E+18
Te-132	7.4435E+00	2.4518E-08	1.1186E+17	2.1923E+19
I-131	2.1682E+04	1.7489E-04	8.0397E+20	4.7973E+20
I-132	8.8846E+00	8.6073E-10	3.9268E+15	2.3118E+20
I-133	2.5962E+03	2.2918E-06	1.0377E+19	5.3724E+20
I-135	2.5536E+00	7.2715E-10	3.2437E+15	3.3379E+20
Xe-133	8.1392E+07	4.3483E-01	1.9689E+24	1.3877E+24
Xe-135	4.3824E+04	1.7161E-05	7.6552E+19	1.1053E+23
Cs-134	1.2994E+01	1.0043E-05	4.5134E+19	3.4638E+19
Cs-136	3.1574E+00	4.3081E-08	1.9076E+17	1.0341E+19
Cs-137	1.0492E+01	1.2062E-04	5.3023E+20	2.7875E+19
Ba-140	7.2653E+00	9.9241E-08	4.2689E+17	1.1481E+19
La-140	6.3875E+00	1.1492E-08	4.9433E+16	1.7632E+17
La-141	3.7626E-09	6.6532E-19	2.8416E+06	8.5924E+16
Ce-141	1.9628E-01	6.8886E-09	2.9421E+16	2.7185E+17
Ce-143	2.7414E-02	4.1282E-11	1.7385E+14	2.5438E+17
Ce-144	1.6949E-01	5.3140E-08	2.2223E+17	2.1837E+17
Pr-143	8.0684E-02	1.1982E-09	5.0459E+15	1.0216E+17
Nd-147	2.5960E-02	3.2090E-10	1.3146E+15	4.2453E+16
Np-239	7.4715E-01	3.2206E-09	8.1150E+15	3.0341E+18
Pu-238	6.9123E-04	4.0376E-08	1.0216E+17	8.8173E+14
Pu-239	6.0962E-05	9.8078E-07	2.4713E+18	7.7238E+13
Pu-240	1.1335E-04	4.9743E-07	1.2482E+18	1.4465E+14
Pu-241	2.4418E-02	2.3704E-07	5.9231E+17	3.1177E+16
Am-241	1.6789E-05	4.8917E-09	1.2223E+16	2.0890E+13
Cm-242	4.0844E-03	1.2324E-09	3.0667E+15	5.3002E+15
Cm-244	2.7445E-04	3.3923E-09	8.3726E+15	3.5038E+14

DW Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5108E+25	0.0000E+00	
Elemental I (atoms)	2.3623E+19	4.8566E+22	
Organic I (atoms)	7.8918E+20	0.0000E+00	
Aerosols (kg)	1.3906E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.2063E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.2681E-06
Total I (Ci)			2.4289E+04

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	2.7618E+18
Organic I (atoms)	4.0214E+19
Aerosols (kg)	1.6864E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

RB Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	2.0123E-02	6.3285E-10	6.5709E+15	2.5824E+14
Co-60	2.5011E-02	2.2126E-08	2.2207E+17	3.1502E+14
Kr-85	4.8513E+04	1.2365E-01	8.7606E+23	3.5726E+20
Kr-85m	2.8345E-01	3.4444E-11	2.4403E+14	6.4767E+19
Kr-88	1.4533E-04	1.1590E-14	7.9315E+10	6.4857E+19
Rb-86	1.2869E+00	1.5816E-08	1.1075E+17	1.7571E+16
Sr-89	3.3581E+01	1.1559E-06	7.8212E+18	4.3432E+17
Sr-90	4.6632E+00	3.4186E-05	2.2875E+20	5.8702E+16
Sr-91	4.0060E-02	1.1051E-11	7.3132E+13	7.3091E+16
Sr-92	9.9734E-10	7.9347E-20	5.1939E+05	1.7360E+16
Y-90	3.0252E+00	5.5603E-09	3.7206E+16	2.2223E+16
Y-91	5.3940E-01	2.1995E-08	1.4556E+17	6.7394E+15
Y-92	1.0130E-06	1.0528E-16	6.8914E+08	1.7829E+16
Y-93	6.9925E-04	2.0959E-13	1.3572E+12	8.9914E+14
Zr-95	5.2635E-01	2.4501E-08	1.5531E+17	6.7685E+15
Zr-97	1.0376E-02	5.4277E-12	3.3697E+13	1.6010E+15
Nb-95	5.4937E-01	1.4049E-08	8.9060E+16	6.9227E+15
Mo-99	2.5668E+00	5.3519E-09	3.2555E+16	5.5327E+16
Tc-99m	2.6316E+00	5.0047E-10	3.0444E+15	5.2812E+16
Ru-103	5.6883E+00	1.7625E-07	1.0305E+18	7.4146E+16
Ru-105	1.3489E-06	2.0066E-16	1.1509E+09	3.0409E+15
Ru-106	2.6353E+00	7.8770E-07	4.4751E+18	3.3293E+16
Rh-105	7.1663E-01	8.4904E-10	4.8695E+15	2.5786E+16
Sb-127	3.4104E+00	1.2771E-08	6.0557E+16	6.2518E+16
Sb-129	4.4254E-06	7.8696E-16	3.6738E+09	1.4641E+16
Te-127	4.4295E+00	1.6784E-09	7.9588E+15	7.0357E+16
Te-127m	1.1807E+00	1.2517E-07	5.9356E+17	1.4922E+16
Te-129	3.1372E+00	1.4980E-10	6.9931E+14	4.5671E+16
Te-129m	3.6280E+00	1.2043E-07	5.6220E+17	4.7556E+16
Te-131m	1.6026E+00	2.0097E-09	9.2388E+15	7.2968E+16
Te-132	4.5120E+01	1.4862E-07	6.7803E+17	8.8950E+17
I-131	1.3078E+03	1.0549E-05	4.8495E+19	1.4232E+19
I-132	5.3855E+01	5.2174E-09	2.3803E+16	1.3502E+18
I-133	1.5649E+02	1.3815E-07	6.2552E+17	8.5272E+18
I-135	1.5393E-01	4.3831E-11	1.9553E+14	1.9891E+18
Xe-133	3.0816E+06	1.6463E-02	7.4544E+22	2.7734E+22
Xe-135	1.6603E+03	6.5016E-07	2.9003E+18	8.3783E+20
Cs-134	1.6273E+02	1.2577E-04	5.6524E+20	2.0660E+18
Cs-136	3.9543E+01	5.3953E-07	2.3891E+18	5.5758E+17
Cs-137	1.3140E+02	1.5107E-03	6.6404E+21	1.6654E+18
Ba-140	4.4040E+01	6.0156E-07	2.5876E+18	6.1828E+17
La-140	3.8841E+01	6.9880E-08	3.0059E+17	3.2343E+17
La-141	2.2808E-08	4.0329E-18	1.7225E+07	3.1041E+14
Ce-141	1.1895E+00	4.1745E-08	1.7829E+17	1.5617E+16
Ce-143	1.6618E-01	2.5024E-10	1.0538E+15	6.6321E+15
Ce-144	1.0274E+00	3.2212E-07	1.3471E+18	1.2994E+16
Pr-143	4.8992E-01	7.2755E-09	3.0639E+16	6.3392E+15
Nd-147	1.5736E-01	1.9452E-09	7.9687E+15	2.2490E+15
Np-239	4.5290E+00	1.9522E-08	4.9190E+16	1.0768E+17
Pu-238	4.1900E-03	2.4475E-07	6.1928E+17	5.2727E+13
Pu-239	3.6953E-04	5.9451E-06	1.4980E+19	4.6374E+12
Pu-240	6.8707E-04	3.0152E-06	7.5659E+18	8.6480E+12
Pu-241	1.4801E-01	1.4368E-06	3.5904E+18	1.8635E+15
Am-241	1.0178E-04	2.9655E-08	7.4101E+16	1.2648E+12
Cm-242	2.4758E-02	7.4702E-09	1.8589E+16	3.1426E+14
Cm-244	1.6636E-03	2.0563E-08	5.0752E+16	2.0944E+13

RB Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	9.5060E+23	0.0000E+00	
Elemental I (atoms)	1.7621E+18	0.0000E+00	
Organic I (atoms)	2.9963E+19	0.0000E+00	
Aerosols (kg)	1.6894E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9761E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0280E-08
Total I (Ci)			1.5183E+03

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23

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Elemental I (atoms)      2.7618E+18
Organic I (atoms)        4.0214E+19
Aerosols (kg)            1.6864E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg          Atoms       Decay
Co-58                  1.3411E-12  4.2177E-20  4.3792E+05  8.8880E+05
Co-60                  1.6669E-12  1.4746E-18  1.4800E+07  1.0698E+06
Kr-85                  1.6247E-01  4.1412E-07  2.9340E+18  2.1520E+15
Kr-85m                 9.4931E-07  1.1535E-16  8.1727E+08  1.4349E+15
Kr-88                  4.8672E-10  3.8816E-20  2.6563E+05  1.6198E+15
Rb-86                  7.6343E-11  9.3825E-19  6.5701E+06  6.8412E+07
Sr-89                  2.2380E-09  7.7035E-17  5.2125E+08  1.5032E+09
Sr-90                  3.1079E-10  2.2784E-15  1.5245E+10  1.9927E+08
Y-90                   2.0154E-10  3.7043E-19  2.4786E+06  2.6529E+07
Y-91                   3.5914E-11  1.4644E-18  9.6913E+06  2.1563E+07
Zr-95                  3.5079E-11  1.6329E-18  1.0351E+07  2.3330E+07
Nb-95                  3.6614E-11  9.3634E-19  5.9355E+06  2.3521E+07
Mo-99                  1.7107E-10  3.5668E-19  2.1697E+06  2.6035E+08
Tc-99m                 1.7539E-10  3.3355E-20  2.0290E+05  2.4166E+08
Ru-103                 3.7910E-10  1.1746E-17  6.8678E+07  2.5804E+08
Ru-106                 1.7563E-10  5.2497E-17  2.9825E+08  1.1331E+08
Rh-105                 4.7761E-11  5.6585E-20  3.2454E+05  1.4914E+08
Sb-127                 2.2729E-10  8.5112E-19  4.0359E+06  2.6977E+08
Te-127                 2.9521E-10  1.1186E-19  5.3043E+05  2.8152E+08
Te-127m                7.8691E-11  8.3424E-18  3.9558E+07  5.0746E+07
Te-129                 2.0908E-10  9.9836E-21  4.6607E+04  3.2235E+08
Te-129m                2.4179E-10  8.0262E-18  3.7469E+07  1.6601E+08
Te-131m                1.0681E-10  1.3394E-19  6.1573E+05  4.6703E+08
Te-132                 3.0071E-09  9.9049E-18  4.5188E+07  3.9948E+09
I-131                  8.8239E-04  7.1175E-12  3.2719E+13  1.5925E+13
I-132                  2.6323E-07  2.5502E-17  1.1635E+08  9.9990E+11
I-133                  1.0565E-04  9.3266E-14  4.2230E+11  1.3062E+13
I-135                  1.0392E-07  2.9591E-17  1.3200E+08  3.9512E+12
Xe-133                 1.0320E+01  5.5135E-08  2.4965E+17  1.8073E+17
Xe-135                 5.5569E-03  2.1760E-12  9.7068E+12  1.3124E+16
Cs-134                 9.6537E-09  7.4614E-15  3.3532E+10  7.6312E+09
Cs-136                 2.3458E-09  3.2007E-17  1.4173E+08  2.2203E+09
Cs-137                 7.7951E-09  8.9618E-14  3.9393E+11  6.1437E+09
Ba-140                 2.9351E-09  4.0092E-17  1.7246E+08  2.2644E+09
La-140                 2.5878E-09  4.6557E-18  2.0027E+07  4.3741E+08
Ce-141                 7.9275E-11  2.7822E-18  1.1883E+07  5.4614E+07
Ce-143                 1.1075E-11  1.6677E-20  7.0233E+04  4.0572E+07
Ce-144                 6.8471E-11  2.1468E-17  8.9779E+07  4.4258E+07
Pr-143                 3.2646E-11  4.8480E-19  2.0416E+06  2.1266E+07
Nd-147                 1.0488E-11  1.2964E-19  5.3109E+05  8.3354E+06
Np-239                 3.0184E-10  1.3011E-18  3.2784E+06  5.3184E+08
Pu-238                 2.7925E-13  1.6311E-17  4.1273E+07  1.7894E+05
Pu-239                 2.4628E-14  3.9622E-16  9.9837E+08  1.5696E+04
Pu-240                 4.5791E-14  2.0096E-16  5.0424E+08  2.9354E+04
Pu-241                 9.8645E-12  9.5760E-17  2.3929E+08  6.3263E+06
Am-241                 6.7832E-15  1.9764E-18  4.9385E+06  4.2538E+03
Cm-242                 1.6500E-12  4.9786E-19  1.2389E+06  1.0732E+06
Cm-244                 1.1087E-13  1.3705E-18  3.3824E+06  7.1099E+04

CR Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    3.1836E+18  0.0000E+00
Elemental I (atoms)    2.6817E+11  0.0000E+00
Organic I (atoms)      3.2873E+13  0.0000E+00
Aerosols (kg)          1.0058E-13  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         3.1468E-13
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Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 3.1841E-13
Total I (Ci) 9.8841E-04

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.8191E+19
Elemental I (atoms)	0.0000E+00	4.6138E+14
Organic I (atoms)	0.0000E+00	3.1267E+15
Aerosols (kg)	0.0000E+00	4.3499E-10

Environment to CR Filtered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7593E+20
Elemental I (atoms)	9.9703E+14	3.0836E+13
Organic I (atoms)	6.8236E+15	2.1104E+14
Aerosols (kg)	9.3956E-10	2.9059E-11

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.5070E+20	0.0000E+00
Elemental I (atoms)	4.8537E+14	0.0000E+00
Organic I (atoms)	3.2769E+15	0.0000E+00
Aerosols (kg)	4.6387E-10	0.0000E+00

EAB Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5868E+00	3.0343E+01	2.5109E+00
Accumulated dose (rem)	4.9983E+00	6.5245E+01	6.9952E+00

LPZ Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.4184E-02	1.7823E-01	1.9612E-02
Accumulated dose (rem)	2.1662E-01	1.2037E+00	2.5370E-01

CR Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	9.5283E-02	1.4315E+01	5.3128E-01
Accumulated dose (rem)	8.8796E-01	6.4758E+01	2.8815E+00

DW Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	2.9114E-03	9.1558E-11	9.5065E+14	4.4622E+15
Co-60	3.8291E-03	3.3874E-09	3.3999E+16	5.3491E+15
Kr-85	1.1905E+06	3.0343E+00	2.1497E+25	4.0293E+22
Kr-85m	1.4684E-09	1.7843E-19	1.2641E+06	1.6052E+22
Rb-86	7.6475E-02	9.3987E-10	6.5814E+15	3.1789E+17
Sr-89	4.7450E+00	1.6333E-07	1.1051E+18	7.5596E+18
Sr-90	7.1520E-01	5.2431E-06	3.5083E+19	9.9621E+17
Sr-91	1.6813E-07	4.6380E-17	3.0693E+08	8.3943E+18
Y-90	6.6518E-01	1.2226E-09	8.1808E+15	2.5510E+16
Y-91	7.6353E-02	3.1134E-09	2.0604E+16	9.6477E+16
Y-93	5.4781E-09	1.6420E-18	1.0632E+07	9.7189E+16
Zr-95	7.5675E-02	3.5226E-09	2.2330E+16	1.1718E+17
Zr-97	4.3346E-06	2.2675E-15	1.4077E+10	1.0553E+17
Nb-95	8.3520E-02	2.1359E-09	1.3540E+16	1.1761E+17
Mo-99	8.6799E-02	1.8098E-10	1.1009E+15	1.4600E+18
Tc-99m	8.8990E-02	1.6924E-11	1.0295E+14	1.3010E+18
Ru-103	7.8507E-01	2.4325E-08	1.4222E+17	1.2999E+18
Ru-106	3.9979E-01	1.1950E-07	6.7890E+17	5.6691E+17
Rh-105	6.5357E-03	7.7432E-12	4.4410E+13	8.5370E+17
Sb-127	1.7766E-01	6.6525E-10	3.1545E+15	1.4635E+18
Te-127	3.4816E-01	1.3193E-10	6.2557E+14	1.4601E+18

Te-127m	1.7652E-01	1.8714E-08	8.8740E+16	2.5366E+17
Te-129	4.2529E-01	2.0308E-11	9.4804E+13	3.8694E+18
Te-129m	4.9183E-01	1.6326E-08	7.6216E+16	8.3427E+17
Te-131m	8.8263E-03	1.1069E-11	5.0884E+13	2.9938E+18
Te-132	1.9317E+00	6.3629E-09	2.9029E+16	2.2001E+19
I-131	1.2021E+04	9.6964E-05	4.4575E+20	7.9382E+20
I-132	2.3057E+00	2.2338E-10	1.0191E+15	2.3127E+20
I-133	1.9897E+01	1.7564E-08	7.9529E+16	5.4738E+20
I-135	6.5716E-07	1.8712E-16	8.3473E+08	3.3380E+20
Xe-133	3.4255E+07	1.8300E-01	8.2862E+23	2.4322E+24
Xe-135	6.9419E-01	2.7184E-10	1.2126E+15	1.1061E+23
Cs-134	1.2018E+01	9.2888E-06	4.1745E+19	3.4878E+19
Cs-136	2.1378E+00	2.9168E-08	1.2916E+17	1.0391E+19
Cs-137	9.7544E+00	1.1214E-04	4.9295E+20	2.8069E+19
Ba-140	4.8751E+00	6.6591E-08	2.8644E+17	1.1596E+19
La-140	5.5030E+00	9.9005E-09	4.2587E+16	2.9456E+17
Ce-141	1.6062E-01	5.6371E-09	2.4076E+16	2.7526E+17
Ce-143	1.2385E-03	1.8650E-12	7.8539E+12	2.5454E+17
Ce-144	1.5534E-01	4.8704E-08	2.0368E+17	2.2148E+17
Pr-143	5.7198E-02	8.4941E-10	3.5771E+15	1.0347E+17
Nd-147	1.6531E-02	2.0435E-10	8.3714E+14	4.2854E+16
Np-239	1.1884E-01	5.1225E-10	1.2907E+15	3.0406E+18
Pu-238	6.4327E-04	3.7575E-08	9.5076E+16	8.9452E+14
Pu-239	5.6851E-05	9.1464E-07	2.3046E+18	7.8367E+13
Pu-240	1.0542E-04	4.6263E-07	1.1608E+18	1.4674E+14
Pu-241	2.2691E-02	2.2028E-07	5.5043E+17	3.1628E+16
Am-241	1.6212E-05	4.7235E-09	1.1803E+16	2.1206E+13
Cm-242	3.7028E-03	1.1172E-09	2.7802E+15	5.3748E+15
Cm-244	2.5509E-04	3.1530E-09	7.7819E+15	3.5545E+14

DW Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	2.2326E+25	0.0000E+00	
Elemental I (atoms)	1.2933E+19	4.8566E+22	
Organic I (atoms)	4.3205E+20	0.0000E+00	
Aerosols (kg)	1.2903E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8309E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.8314E-06
Total I (Ci)			1.2043E+04

DW to RB Transport Group Inventory:

Time (h) = 240.0000	Leakage Transport
Noble gases (atoms)	2.0430E+24
Elemental I (atoms)	3.5589E+18
Organic I (atoms)	6.6841E+19
Aerosols (kg)	1.6924E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2812E+23
Elemental I (atoms)	0.0000E+00	1.4388E+18
Organic I (atoms)	0.0000E+00	2.0640E+19
Aerosols (kg)	0.0000E+00	8.8685E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2812E+23
Elemental I (atoms)	0.0000E+00	1.4388E+18
Organic I (atoms)	0.0000E+00	2.0640E+19
Aerosols (kg)	0.0000E+00	8.8685E-04

RB Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	1.9111E-02	6.0102E-10	6.2404E+15	6.3446E+14
Co-60	2.5135E-02	2.2236E-08	2.2318E+17	7.9598E+14
Kr-85	1.0402E+05	2.6514E-01	1.8785E+24	1.8305E+21

Kr-85m	1.2831E-10	1.5591E-20	1.1046E+05	6.4767E+19
Rb-86	1.0334E+00	1.2700E-08	8.8931E+16	3.9735E+16
Sr-89	3.1147E+01	1.0721E-06	7.2544E+18	1.0548E+18
Sr-90	4.6948E+00	3.4417E-05	2.3030E+20	1.4845E+17
Sr-91	1.1036E-06	3.0445E-16	2.0148E+09	7.3164E+16
Y-90	4.3690E+00	8.0303E-09	5.3733E+16	9.5786E+16
Y-91	5.0606E-01	2.0635E-08	1.3656E+17	1.6764E+16
Y-93	3.5960E-08	1.0778E-17	6.9794E+07	9.0050E+14
Zr-95	4.9675E-01	2.3123E-08	1.4658E+17	1.6578E+16
Zr-97	2.8454E-05	1.4884E-14	9.2407E+10	1.6346E+15
Nb-95	5.4825E-01	1.4021E-08	8.8878E+16	1.7452E+16
Mo-99	5.6978E-01	1.1880E-09	7.2265E+15	8.0778E+16
Tc-99m	5.8416E-01	1.1109E-10	6.7578E+14	7.7589E+16
Ru-103	5.1534E+00	1.5968E-07	9.3359E+17	1.7805E+17
Ru-106	2.6244E+00	7.8443E-07	4.4565E+18	8.3739E+16
Rh-105	4.2902E-02	5.0829E-11	2.9152E+14	3.0376E+16
Sb-127	1.1662E+00	4.3669E-09	2.0707E+16	1.0264E+17
Te-127	2.2855E+00	8.6600E-10	4.1064E+15	1.2916E+17
Te-127m	1.1588E+00	1.2285E-07	5.8252E+17	3.7383E+16
Te-129	2.7918E+00	1.3331E-10	6.2232E+14	8.8450E+16
Te-129m	3.2286E+00	1.0717E-07	5.0031E+17	1.1324E+17
Te-131m	5.7939E-02	7.2659E-11	3.3402E+14	8.1892E+16
Te-132	1.2681E+01	4.1768E-08	1.9056E+17	1.3798E+18
I-131	1.3408E+03	1.0815E-05	4.9719E+19	4.0395E+19
I-132	1.5136E+01	1.4663E-09	6.6897E+15	1.8577E+18
I-133	2.2182E+00	1.9581E-09	8.8663E+15	9.2406E+18
I-135	7.3263E-08	2.0862E-17	9.3061E+07	1.9893E+18
Xe-133	2.9932E+06	1.5991E-02	7.2406E+22	8.9324E+22
Xe-135	6.0681E-02	2.3762E-11	1.0600E+14	8.4105E+20
Cs-134	1.6239E+02	1.2551E-04	5.6408E+20	5.1841E+18
Cs-136	2.8886E+01	3.9413E-07	1.7452E+18	1.2085E+18
Cs-137	1.3181E+02	1.5153E-03	6.6609E+21	4.1897E+18
Ba-140	3.2001E+01	4.3713E-07	1.8803E+18	1.3415E+18
La-140	3.6134E+01	6.5008E-08	2.7964E+17	1.0697E+18
Ce-141	1.0541E+00	3.6994E-08	1.5800E+17	3.7109E+16
Ce-143	8.1299E-03	1.2242E-11	5.1556E+13	7.6368E+15
Ce-144	1.0197E+00	3.1971E-07	1.3370E+18	3.2628E+16
Pr-143	3.7609E-01	5.5850E-09	2.3520E+16	1.4657E+16
Nd-147	1.0852E-01	1.3414E-09	5.4953E+15	4.7701E+15
Np-239	7.8009E-01	3.3626E-09	8.4727E+15	1.4857E+17
Pu-238	4.2226E-03	2.4665E-07	6.2411E+17	1.3341E+14
Pu-239	3.7319E-04	6.0040E-06	1.5128E+19	1.1763E+13
Pu-240	6.9200E-04	3.0368E-06	7.6201E+18	2.1875E+13
Pu-241	1.4895E-01	1.4460E-06	3.6132E+18	4.7117E+15
Am-241	1.0643E-04	3.1010E-08	7.7488E+16	3.2614E+12
Cm-242	2.4307E-02	7.3339E-09	1.8250E+16	7.8483E+14
Cm-244	1.6745E-03	2.0697E-08	5.1083E+16	5.2959E+13

RB Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9509E+24	0.0000E+00	
Elemental I (atoms)	1.6408E+18	0.0000E+00	
Organic I (atoms)	3.7801E+19	0.0000E+00	
Aerosols (kg)	1.6919E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9973E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9993E-08
Total I (Ci)			1.3582E+03

DW to RB Transport Group Inventory:

Time (h) = 240.0000	Leakage Transport
Noble gases (atoms)	2.0430E+24
Elemental I (atoms)	3.5589E+18
Organic I (atoms)	6.6841E+19
Aerosols (kg)	1.6924E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00

Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	7.1558E-14	2.2504E-21	2.3366E+04	8.9274E+05
Co-60	9.4115E-14	8.3259E-20	8.3567E+05	1.0748E+06
Kr-85	1.1775E-01	3.0012E-07	2.1263E+18	4.4967E+15
Rb-86	1.8946E-12	2.3285E-20	1.6305E+05	6.8597E+07
Sr-89	1.1663E-10	4.0144E-18	2.7163E+07	1.5097E+09
Sr-90	1.7579E-11	1.2887E-16	8.6230E+08	2.0020E+08
Y-90	1.6350E-11	3.0051E-20	2.0108E+05	2.7221E+07
Y-91	1.8768E-12	7.6531E-20	5.0646E+05	2.1668E+07
Zr-95	1.8600E-12	8.6581E-20	5.4884E+05	2.3433E+07
Nb-95	2.0528E-12	5.2498E-20	3.3279E+05	2.3629E+07
Mo-99	2.1334E-12	4.4482E-21	2.7058E+04	2.6072E+08
Ru-103	1.9296E-11	5.9788E-19	3.4957E+06	2.5914E+08
Ru-106	9.8265E-12	2.9372E-18	1.6687E+07	1.1383E+08
Sb-127	4.3666E-12	1.6351E-20	7.7535E+04	2.7029E+08
Te-127	8.5575E-12	3.2426E-21	1.5376E+04	2.8223E+08
Te-127m	4.3388E-12	4.5998E-19	2.1811E+06	5.0979E+07
Te-129m	1.2089E-11	4.0128E-19	1.8733E+06	1.6670E+08
Te-132	4.7480E-11	1.5639E-19	7.1351E+05	4.0015E+09
I-131	3.7947E-04	3.0608E-12	1.4071E+13	2.5852E+13
I-132	9.2870E-09	8.9972E-19	4.1047E+06	1.0008E+12
I-133	6.2807E-07	5.5444E-16	2.5105E+09	1.3384E+13
Xe-133	3.3881E+00	1.8101E-08	8.1959E+16	2.8415E+17
Xe-135	6.8662E-08	2.6887E-17	1.1994E+08	1.3132E+16
Cs-134	2.9774E-10	2.3013E-16	1.0342E+09	7.6557E+09
Cs-136	5.2962E-11	7.2262E-19	3.1998E+06	2.2258E+09
Cs-137	2.4166E-10	2.7783E-15	1.2213E+10	6.1636E+09
Ba-140	1.1982E-10	1.6367E-18	7.0405E+06	2.2724E+09
La-140	1.3526E-10	2.4334E-19	1.0468E+06	4.4519E+08
Ce-141	3.9479E-12	1.3855E-19	5.9177E+05	5.4843E+07
Ce-144	3.8181E-12	1.1971E-18	5.0063E+06	4.4461E+07
Pr-143	1.4059E-12	2.0878E-20	8.7923E+04	2.1357E+07
Nd-147	4.0632E-13	5.0226E-21	2.0576E+04	8.3637E+06
Np-239	2.9209E-12	1.2591E-20	3.1725E+04	5.3245E+08
Pu-238	1.5811E-14	9.2355E-19	2.3369E+06	1.7977E+05
Pu-239	1.3973E-15	2.2481E-17	5.6646E+07	1.5770E+04
Pu-240	2.5911E-15	1.1371E-17	2.8532E+07	2.9490E+04
Pu-241	5.5773E-13	5.4142E-18	1.3529E+07	6.3557E+06
Am-241	3.9847E-16	1.1610E-19	2.9011E+05	4.2742E+03
Cm-242	9.1012E-14	2.7460E-20	6.8335E+04	1.0780E+06
Cm-244	6.2697E-15	7.7498E-20	1.9127E+05	7.1430E+04

CR Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	2.2083E+18	0.0000E+00	
Elemental I (atoms)	3.6901E+10	0.0000E+00	
Organic I (atoms)	1.4036E+13	0.0000E+00	
Aerosols (kg)	3.1952E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3272E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3274E-13
Total I (Ci)			3.8010E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5803E+20
Elemental I (atoms)	0.0000E+00	4.6701E+14
Organic I (atoms)	0.0000E+00	5.1255E+15
Aerosols (kg)	0.0000E+00	4.3632E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5556E+20
Elemental I (atoms)	1.0093E+15	3.1216E+13

Organic I (atoms)	1.1186E+16	3.4596E+14
Aerosols (kg)	9.4248E-10	2.9149E-11

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 240.0000	Pathway Filtered	Transported
Noble gases (atoms)	5.1103E+20	0.0000E+00
Elemental I (atoms)	4.9158E+14	0.0000E+00
Organic I (atoms)	5.4193E+15	0.0000E+00
Aerosols (kg)	4.6540E-10	0.0000E+00

EAB Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.8494E-01	2.3467E+01	1.5994E+00
Accumulated dose (rem)	5.8832E+00	8.8712E+01	8.5946E+00

LPZ Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	7.9100E-03	1.3784E-01	1.2107E-02
Accumulated dose (rem)	2.2453E-01	1.3415E+00	2.6581E-01

CR Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2887E-02	1.1031E+01	3.8874E-01
Accumulated dose (rem)	9.4085E-01	7.5789E+01	3.2703E+00

DW Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	2.3393E-03	7.3566E-11	7.6384E+14	4.5458E+15
Co-60	3.3809E-03	2.9909E-09	3.0020E+16	5.4642E+15
Kr-85	1.0530E+06	2.6840E+00	1.9016E+25	7.6099E+22
Rb-86	4.6741E-02	5.7444E-10	4.0225E+15	3.1982E+17
Sr-89	3.6654E+00	1.2617E-07	8.5370E+17	7.6932E+18
Sr-90	6.3335E-01	4.6431E-06	3.1068E+19	1.0177E+18
Y-90	6.3338E-01	1.1642E-09	7.7897E+15	4.6445E+16
Y-91	6.0100E-02	2.4507E-09	1.6218E+16	9.8647E+16
Zr-95	6.0173E-02	2.8010E-09	1.7756E+16	1.1934E+17
Zr-97	2.0392E-10	1.0667E-19	6.6227E+05	1.0553E+17
Nb-95	7.2009E-02	1.8415E-09	1.1674E+16	1.2009E+17
Mo-99	6.1853E-03	1.2896E-11	7.8448E+13	1.4610E+18
Tc-99m	6.3414E-03	1.2060E-12	7.3361E+12	1.3019E+18
Ru-103	5.8313E-01	1.8068E-08	1.0564E+17	1.3217E+18
Ru-106	3.4766E-01	1.0392E-07	5.9038E+17	5.7884E+17
Rh-105	5.2433E-05	6.2120E-14	3.5628E+11	8.5374E+17
Sb-127	2.6013E-02	9.7407E-11	4.6189E+14	1.4660E+18
Te-127	1.7521E-01	6.6389E-11	3.1480E+14	1.4674E+18
Te-127m	1.4759E-01	1.5647E-08	7.4194E+16	2.5883E+17
Te-129	3.0662E-01	1.4641E-11	6.8349E+13	3.8781E+18
Te-129m	3.5459E-01	1.1770E-08	5.4948E+16	8.4768E+17
Te-131m	3.0552E-05	3.8314E-14	1.7613E+11	2.9939E+18
Te-132	2.0397E-01	6.7186E-10	3.0652E+15	2.2026E+19
I-131	4.4981E+03	3.6282E-05	1.6679E+20	1.0384E+21
I-132	2.4346E-01	2.3586E-11	1.0761E+14	2.3129E+20
I-133	5.9273E-03	5.2324E-12	2.3692E+13	5.4746E+20
Xe-133	8.0962E+06	4.3253E-02	1.9585E+23	3.0118E+24
Xe-135	6.9342E-09	2.7153E-18	1.2113E+07	1.1061E+23
Cs-134	1.0552E+01	8.1557E-06	3.6653E+19	3.5238E+19
Cs-136	1.1160E+00	1.5227E-08	6.7426E+16	1.0442E+19
Cs-137	8.6382E+00	9.9311E-05	4.3654E+20	2.8362E+19
Ba-140	2.5072E+00	3.4248E-08	1.4732E+17	1.1709E+19
La-140	2.9102E+00	5.2358E-09	2.2522E+16	4.2459E+17
Ce-141	1.1500E-01	4.0359E-09	1.7237E+16	2.7963E+17
Ce-143	7.0971E-06	1.0687E-14	4.5007E+10	2.5455E+17
Ce-144	1.3434E-01	4.2119E-08	1.7614E+17	2.2611E+17
Pr-143	3.0474E-02	4.5255E-10	1.9058E+15	1.0483E+17
Nd-147	7.7919E-03	9.6317E-11	3.9458E+14	4.3225E+16
Np-239	5.5487E-03	2.3918E-11	6.0266E+13	3.0418E+18

Pu-238	5.7060E-04	3.3330E-08	8.4335E+16	9.1389E+14
Pu-239	5.0404E-05	8.1092E-07	2.0433E+18	8.0079E+13
Pu-240	9.3415E-05	4.0995E-07	1.0287E+18	1.4992E+14
Pu-241	2.0081E-02	1.9494E-07	4.8712E+17	3.2311E+16
Am-241	1.5248E-05	4.4426E-09	1.1101E+16	2.1709E+13
Cm-242	3.1444E-03	9.4875E-10	2.3610E+15	5.4839E+15
Cm-244	2.2580E-04	2.7911E-09	6.8886E+15	3.6313E+14

DW Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9212E+25	0.0000E+00	
Elemental I (atoms)	4.8383E+18	4.8566E+22	
Organic I (atoms)	1.6164E+20	0.0000E+00	
Aerosols (kg)	1.1403E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0590E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.0590E-06
Total I (Ci)			4.4983E+03

DW to RB Transport Group Inventory:

Time (h) = 480.0000	Leakage Transport
Noble gases (atoms)	3.5933E+24
Elemental I (atoms)	4.1774E+18
Organic I (atoms)	8.7505E+19
Aerosols (kg)	1.7015E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1024E+24
Elemental I (atoms)	0.0000E+00	1.6280E+18
Organic I (atoms)	0.0000E+00	2.6961E+19
Aerosols (kg)	0.0000E+00	8.8964E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1024E+24
Elemental I (atoms)	0.0000E+00	1.6280E+18
Organic I (atoms)	0.0000E+00	2.6961E+19
Aerosols (kg)	0.0000E+00	8.8964E-04

RB Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	1.7515E-02	5.5083E-10	5.7193E+15	1.2196E+15
Co-60	2.5315E-02	2.2395E-08	2.2477E+17	1.6025E+15
Kr-85	1.8779E+05	4.7864E-01	3.3911E+24	6.5282E+21
Rb-86	7.1646E-01	8.8052E-09	6.1659E+16	6.7398E+16
Sr-89	2.7445E+01	9.4468E-07	6.3921E+18	1.9903E+18
Sr-90	4.7422E+00	3.4765E-05	2.3262E+20	2.9932E+17
Y-90	4.7426E+00	8.7171E-09	5.8328E+16	2.4266E+17
Y-91	4.5432E-01	1.8525E-08	1.2260E+17	3.2102E+16
Zr-95	4.5055E-01	2.0972E-08	1.3295E+17	3.1710E+16
Zr-97	1.5269E-09	7.9872E-19	4.9588E+06	1.6347E+15
Nb-95	5.3917E-01	1.3788E-08	8.7407E+16	3.4849E+16
Mo-99	4.6313E-02	9.6562E-11	5.8739E+14	8.7446E+16
Tc-99m	4.7482E-02	9.0300E-12	5.4929E+13	8.4081E+16
Ru-103	4.3662E+00	1.3529E-07	7.9099E+17	3.2988E+17
Ru-106	2.6031E+00	7.7808E-07	4.4205E+18	1.6731E+17
Rh-105	3.9259E-04	4.6513E-13	2.6677E+12	3.0665E+16
Sb-127	1.9477E-01	7.2934E-10	3.4584E+15	1.1999E+17
Te-127	1.3119E+00	4.9709E-10	2.3571E+15	1.8066E+17
Te-127m	1.1051E+00	1.1716E-07	5.5553E+17	7.3593E+16
Te-129	2.2958E+00	1.0963E-10	5.1177E+14	1.4951E+17
Te-129m	2.6550E+00	8.8132E-08	4.1143E+17	2.0700E+17
Te-131m	2.2876E-04	2.8688E-13	1.3188E+12	8.2226E+16
Te-132	1.5272E+00	5.0306E-09	2.2951E+16	1.5482E+18
I-131	9.2479E+02	7.4595E-06	3.4292E+19	7.7144E+19
I-132	1.8229E+00	1.7660E-10	8.0571E+14	2.0321E+18

I-133	1.2183E-03	1.0754E-12	4.8695E+12	9.2502E+18
Xe-133	1.4438E+06	7.7134E-03	3.4926E+22	1.5980E+23
Xe-135	1.2368E-09	4.8432E-19	2.1605E+06	8.4105E+20
Cs-134	1.6175E+02	1.2501E-04	5.6183E+20	1.0366E+19
Cs-136	1.7107E+01	2.3341E-07	1.0335E+18	1.9274E+18
Cs-137	1.3241E+02	1.5223E-03	6.6915E+21	8.4132E+18
Ba-140	1.8773E+01	2.5643E-07	1.1030E+18	2.1344E+18
La-140	2.1790E+01	3.9203E-08	1.6863E+17	1.9761E+18
Ce-141	8.6080E-01	3.0211E-08	1.2903E+17	6.7617E+16
Ce-143	5.3140E-05	8.0021E-14	3.3699E+11	7.6881E+15
Ce-144	1.0059E+00	3.1537E-07	1.3189E+18	6.5008E+16
Pr-143	2.2855E-01	3.3940E-09	1.4293E+16	2.4134E+16
Nd-147	5.8342E-02	7.2118E-10	2.9544E+15	7.3551E+15
Np-239	4.1546E-02	1.7909E-10	4.5125E+14	1.5662E+17
Pu-238	4.2723E-03	2.4956E-07	6.3146E+17	2.6921E+14
Pu-239	3.7740E-04	6.0718E-06	1.5299E+19	2.3764E+13
Pu-240	6.9945E-04	3.0695E-06	7.7022E+18	4.4118E+13
Pu-241	1.5036E-01	1.4596E-06	3.6473E+18	9.4965E+15
Am-241	1.1418E-04	3.3267E-08	8.3128E+16	6.7873E+12
Cm-242	2.3544E-02	7.1038E-09	1.7678E+16	1.5497E+15
Cm-244	1.6907E-03	2.0898E-08	5.1578E+16	1.0676E+14

RB Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	3.4260E+24	0.0000E+00	
Elemental I (atoms)	1.0784E+18	0.0000E+00	
Organic I (atoms)	2.8843E+19	0.0000E+00	
Aerosols (kg)	1.6970E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.7560E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.7562E-08
Total I (Ci)			9.2661E+02

DW to RB Transport Group Inventory:

Time (h) = 480.0000	Leakage Transport
Noble gases (atoms)	3.5933E+24
Elemental I (atoms)	4.1774E+18
Organic I (atoms)	8.7505E+19
Aerosols (kg)	1.7015E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	5.6994E-14	1.7924E-21	1.8610E+04	8.9478E+05
Co-60	8.2372E-14	7.2871E-20	7.3139E+05	1.0776E+06
Kr-85	1.0416E-01	2.6548E-07	1.8809E+18	8.0383E+15
Rb-86	1.1388E-12	1.3996E-20	9.8004E+04	6.8644E+07
Sr-89	8.9304E-11	3.0739E-18	2.0799E+07	1.5130E+09
Sr-90	1.5431E-11	1.1312E-16	7.5694E+08	2.0072E+08
Y-90	1.5432E-11	2.8364E-20	1.8979E+05	2.7731E+07
Y-91	1.4643E-12	5.9708E-20	3.9513E+05	2.1721E+07
Zr-95	1.4660E-12	6.8242E-20	4.3259E+05	2.3486E+07
Nb-95	1.7544E-12	4.4867E-20	2.8441E+05	2.3690E+07
Ru-103	1.4207E-11	4.4021E-19	2.5738E+06	2.5967E+08
Ru-106	8.4704E-12	2.5318E-18	1.4384E+07	1.1412E+08
Sb-127	6.3377E-13	2.3732E-21	1.1253E+04	2.7035E+08
Te-127m	3.5958E-12	3.8122E-19	1.8077E+06	5.1105E+07
Te-129m	8.6392E-12	2.8678E-19	1.3388E+06	1.6703E+08
Te-132	4.9696E-12	1.6369E-20	7.4680E+04	4.0021E+09
I-131	1.4162E-04	1.1424E-12	5.2515E+12	3.3554E+13
I-132	9.7424E-10	9.4383E-20	4.3060E+05	1.0009E+12
I-133	1.8662E-10	1.6474E-19	7.4595E+05	1.3387E+13
Xe-133	8.0080E-01	4.2782E-09	1.9371E+16	3.4148E+17

Cs-134	2.5709E-10	1.9871E-16	8.9301E+08	7.6645E+09
Cs-136	2.7190E-11	3.7099E-19	1.6428E+06	2.2271E+09
Cs-137	2.1046E-10	2.4196E-15	1.0636E+10	6.1707E+09
Ba-140	6.1086E-11	8.3441E-19	3.5892E+06	2.2752E+09
La-140	7.0904E-11	1.2756E-19	5.4872E+05	4.4836E+08
Ce-141	2.8017E-12	9.8330E-20	4.1997E+05	5.4949E+07
Ce-144	3.2730E-12	1.0262E-18	4.2915E+06	4.4574E+07
Pr-143	7.4247E-13	1.1026E-20	4.6433E+04	2.1390E+07
Pu-238	1.3902E-14	8.1205E-19	2.0547E+06	1.8025E+05
Pu-239	1.2280E-15	1.9757E-17	4.9783E+07	1.5812E+04
Pu-240	2.2759E-15	9.9881E-18	2.5062E+07	2.9568E+04
Pu-241	4.8926E-13	4.7495E-18	1.1868E+07	6.3724E+06
Am-241	3.7149E-16	1.0824E-19	2.7047E+05	4.2865E+03
Cm-242	7.6611E-14	2.3115E-20	5.7522E+04	1.0807E+06
Cm-244	5.5015E-15	6.8001E-20	1.6783E+05	7.1617E+04

CR Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9002E+18	0.0000E+00	
Elemental I (atoms)	2.4227E+08	0.0000E+00	
Organic I (atoms)	5.2513E+12	0.0000E+00	
Aerosols (kg)	2.7781E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.9519E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.9519E-14
Total I (Ci)			1.4163E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.7455E+20
Elemental I (atoms)	0.0000E+00	4.6711E+14
Organic I (atoms)	0.0000E+00	6.6786E+15
Aerosols (kg)	0.0000E+00	4.3684E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.1774E+20
Elemental I (atoms)	1.0095E+15	3.1223E+13
Organic I (atoms)	1.4576E+16	4.5079E+14
Aerosols (kg)	9.4360E-10	2.9184E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	8.8999E+20	0.0000E+00
Elemental I (atoms)	4.9173E+14	0.0000E+00
Organic I (atoms)	7.0783E+15	0.0000E+00
Aerosols (kg)	4.6595E-10	0.0000E+00

EAB Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.1240E-01	8.7802E+00	4.7973E-01
Accumulated dose (rem)	6.0956E+00	9.7492E+01	9.0743E+00

LPZ Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.8986E-03	5.1574E-02	3.4688E-03
Accumulated dose (rem)	2.2643E-01	1.3931E+00	2.6928E-01

CR Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2671E-02	4.1273E+00	1.3833E-01
Accumulated dose (rem)	9.5352E-01	7.9917E+01	3.4086E+00

DW Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.8796E-03	5.9110E-11	6.1374E+14	4.6129E+15
Co-60	2.9852E-03	2.6408E-09	2.6506E+16	5.5658E+15
Kr-85	9.3148E+05	2.3742E+00	1.6821E+25	1.0777E+23
Rb-86	2.8567E-02	3.5109E-10	2.4585E+15	3.2100E+17
Sr-89	2.8315E+00	9.7461E-08	6.5947E+17	7.7965E+18
Sr-90	5.6086E-01	4.1117E-06	2.7512E+19	1.0368E+18
Y-90	5.6381E-01	1.0363E-09	6.9342E+15	6.5471E+16
Y-91	4.7307E-02	1.9290E-09	1.2766E+16	1.0036E+17
Zr-95	4.7846E-02	2.2272E-09	1.4118E+16	1.2106E+17
Nb-95	6.1331E-02	1.5684E-09	9.9425E+15	1.2222E+17
Mo-99	4.4076E-04	9.1899E-13	5.5902E+12	1.4611E+18
Tc-99m	4.5189E-04	8.5939E-14	5.2277E+11	1.3020E+18
Ru-103	4.3314E-01	1.3421E-08	7.8468E+16	1.3378E+18
Ru-106	3.0233E-01	9.0367E-08	5.1340E+17	5.8921E+17
Rh-105	4.2064E-07	4.9836E-16	2.8583E+09	8.5374E+17
Sb-127	3.8088E-03	1.4262E-11	6.7630E+13	1.4663E+18
Te-127	1.2895E-01	4.8863E-11	2.3170E+14	1.4720E+18
Te-127m	1.2284E-01	1.3023E-08	6.1754E+16	2.6314E+17
Te-129	2.2106E-01	1.0555E-11	4.9276E+13	3.8844E+18
Te-129m	2.5564E-01	8.4860E-09	3.9615E+16	8.5734E+17
Te-131m	1.0575E-07	1.3262E-16	6.0968E+08	2.9939E+18
Te-132	2.1537E-02	7.0942E-11	3.2365E+14	2.2028E+19
I-131	1.6831E+03	1.3576E-05	6.2410E+19	1.1299E+21
I-132	2.5707E-02	2.4905E-12	1.1362E+13	2.3129E+20
I-133	1.7658E-06	1.5588E-15	7.0579E+09	5.4746E+20
Xe-133	1.9136E+06	1.0223E-02	4.6289E+22	3.1487E+24
Cs-134	9.2649E+00	7.1609E-06	3.2182E+19	3.5555E+19
Cs-136	5.8260E-01	7.9491E-09	3.5199E+16	1.0468E+19
Cs-137	7.6498E+00	8.7947E-05	3.8659E+20	2.8622E+19
Ba-140	1.2894E+00	1.7613E-08	7.5764E+16	1.1768E+19
La-140	1.4978E+00	2.6948E-09	1.1592E+16	4.9206E+17
Ce-141	8.2330E-02	2.8894E-09	1.2341E+16	2.8275E+17
Ce-143	4.0670E-08	6.1242E-17	2.5791E+08	2.5455E+17
Ce-144	1.1617E-01	3.6424E-08	1.5233E+17	2.3010E+17
Pr-143	1.6197E-02	2.4054E-10	1.0130E+15	1.0555E+17
Nd-147	3.6727E-03	4.5398E-11	1.8598E+14	4.3400E+16
Np-239	2.5908E-04	1.1168E-12	2.8139E+12	3.0419E+18
Pu-238	5.0611E-04	2.9563E-08	7.4803E+16	9.3108E+14
Pu-239	4.4666E-05	7.1861E-07	1.8107E+18	8.1597E+13
Pu-240	8.2778E-05	3.6327E-07	9.1154E+17	1.5273E+14
Pu-241	1.7771E-02	1.7251E-07	4.3108E+17	3.2915E+16
Am-241	1.4292E-05	4.1640E-09	1.0405E+16	2.2181E+13
Cm-242	2.6702E-03	8.0568E-10	2.0049E+15	5.5766E+15
Cm-244	1.9988E-04	2.4707E-09	6.0978E+15	3.6992E+14

DW Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.6867E+25	0.0000E+00	
Elemental I (atoms)	1.8104E+18	4.8566E+22	
Organic I (atoms)	6.0481E+19	0.0000E+00	
Aerosols (kg)	1.0084E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9626E-07
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9626E-07
Total I (Ci)			1.6831E+03

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport
Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	4.4088E+18
Organic I (atoms)	9.5236E+19
Aerosols (kg)	1.7096E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	1.6988E+18
Organic I (atoms)	0.0000E+00	2.9326E+19

```
Aerosols (kg)          0.0000E+00  8.9210E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.5154E+24
Elemental I (atoms)    0.0000E+00  1.6988E+18
Organic I (atoms)      0.0000E+00  2.9326E+19
Aerosols (kg)          0.0000E+00  8.9210E-04

RB Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms      Decay
Co-58                  1.6032E-02  5.0417E-10  5.2348E+15  1.7555E+15
Co-60                  2.5462E-02  2.2525E-08  2.2608E+17  2.4142E+15
Kr-85                  2.6171E+05  6.6707E-01  4.7261E+24  1.3743E+22
Rb-86                  4.9644E-01  6.1012E-09  4.2724E+16  8.6571E+16
Sr-89                  2.4151E+01  8.3129E-07  5.6249E+18  2.8139E+18
Sr-90                  4.7838E+00  3.5070E-05  2.3466E+20  4.5160E+17
Y-90                   4.8090E+00  8.8390E-09  5.9144E+16  3.9468E+17
Y-91                   4.0733E-01  1.6610E-08  1.0992E+17  4.5863E+16
Zr-95                  4.0810E-01  1.8997E-08  1.2042E+17  4.5425E+16
Nb-95                  5.2312E-01  1.3378E-08  8.4804E+16  5.1839E+16
Mo-99                  3.7594E-03  7.8385E-12  4.7681E+13  8.7988E+16
Tc-99m                 3.8543E-03  7.3301E-13  4.4589E+12  8.4608E+16
Ru-103                 3.6944E+00  1.1447E-07  6.6928E+17  4.5844E+17
Ru-106                 2.5787E+00  7.7078E-07  4.3790E+18  2.5014E+17
Rh-105                 3.5878E-06  4.2507E-15  2.4379E+10  3.0668E+16
Sb-127                 3.2487E-02  1.2165E-10  5.7684E+14  1.2289E+17
Te-127                 1.0999E+00  4.1677E-10  1.9763E+15  2.1716E+17
Te-127m                1.0478E+00  1.1108E-07  5.2673E+17  1.0800E+17
Te-129                 1.8855E+00  9.0032E-11  4.2030E+14  1.9969E+17
Te-129m                2.1805E+00  7.2380E-08  3.3789E+17  2.8405E+17
Te-131m                9.0202E-07  1.1312E-15  5.2002E+09  8.2227E+16
Te-132                 1.8370E-01  6.0509E-10  2.7606E+15  1.5685E+18
I-131                  5.2468E+02  4.2322E-06  1.9456E+19  9.9958E+19
I-132                  2.1927E-01  2.1242E-11  9.6912E+13  2.0531E+18
I-133                  5.5033E-07  4.8581E-16  2.1997E+09  9.2502E+18
Xe-133                 5.3765E+05  2.8724E-03  1.3006E+22  1.8951E+23
Cs-134                 1.6100E+02  1.2444E-04  5.5925E+20  1.5525E+19
Cs-136                 1.0124E+01  1.3814E-07  6.1168E+17  2.3529E+18
Cs-137                 1.3294E+02  1.5283E-03  6.7181E+21  1.2655E+19
Ba-140                 1.0998E+01  1.5023E-07  6.4622E+17  2.5993E+18
La-140                 1.2776E+01  2.2985E-08  9.8870E+16  2.5120E+18
Ce-141                 7.0204E-01  2.4639E-08  1.0523E+17  9.2514E+16
Ce-143                 3.4689E-07  5.2236E-16  2.1998E+09  7.6885E+15
Ce-144                 9.9090E-01  3.1068E-07  1.2993E+18  9.6928E+16
Pr-143                 1.3838E-01  2.0550E-09  8.6540E+15  2.9880E+16
Nd-147                 3.1326E-02  3.8722E-10  1.5863E+15  8.7441E+15
Np-239                 2.2098E-03  9.5253E-12  2.4001E+13  1.5705E+17
Pu-238                 4.3168E-03  2.5215E-07  6.3802E+17  4.0652E+14
Pu-239                 3.8097E-04  6.1293E-06  1.5444E+19  3.5887E+13
Pu-240                 7.0605E-04  3.0985E-06  7.7749E+18  6.6586E+13
Pu-241                 1.5158E-01  1.4714E-06  3.6769E+18  1.4323E+16
Am-241                 1.2191E-04  3.5520E-08  8.8758E+16  1.0561E+13
Cm-242                 2.2776E-02  6.8719E-09  1.7101E+16  2.2901E+15
Cm-244                 1.7049E-03  2.1073E-08  5.2011E+16  1.6104E+14

RB Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    4.7391E+24  0.0000E+00
Elemental I (atoms)    5.9968E+17  0.0000E+00
Organic I (atoms)      1.7001E+19  0.0000E+00
Aerosols (kg)          1.7019E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.5636E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.5637E-08
Total I (Ci)                                    5.2490E+02

DW to  RB Transport Group Inventory:
Time (h) = 720.0000  Leakage Transport
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```
Noble gases (atoms)      4.9433E+24
Elemental I (atoms)      4.4088E+18
Organic I (atoms)        9.5236E+19
Aerosols (kg)            1.7096E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg          Atoms      Decay
Co-58                  4.5794E-14  1.4401E-21  1.4953E+04  8.9641E+05
Co-60                  7.2730E-14  6.4341E-20  6.4578E+05  1.0801E+06
Kr-85                  9.2133E-02  2.3483E-07  1.6638E+18  1.1171E+16
Rb-86                  6.9601E-13  8.5539E-21  5.9899E+04  6.8673E+07
Sr-89                  6.8986E-11  2.3745E-18  1.6067E+07  1.5155E+09
Sr-90                  1.3665E-11  1.0018E-16  6.7031E+08  2.0119E+08
Y-90                   1.3737E-11  2.5248E-20  1.6894E+05  2.8194E+07
Y-91                   1.1526E-12  4.6999E-20  3.1102E+05  2.1762E+07
Zr-95                  1.1657E-12  5.4263E-20  3.4398E+05  2.3528E+07
Nb-95                  1.4943E-12  3.8214E-20  2.4224E+05  2.3742E+07
Ru-103                 1.0553E-11  3.2698E-19  1.9118E+06  2.6006E+08
Ru-106                 7.3659E-12  2.2017E-18  1.2508E+07  1.1438E+08
Te-127m                2.9929E-12  3.1730E-19  1.5046E+06  5.1210E+07
Te-129m                6.2285E-12  2.0675E-19  9.6518E+05  1.6726E+08
I-131                  5.2993E-05  4.2745E-13  1.9650E+12  3.6435E+13
I-132                  1.0287E-10  9.9657E-21  4.5466E+04  1.0009E+12
Xe-133                 1.8927E-01  1.0112E-09  4.5785E+15  3.5503E+17
Cs-134                 2.2573E-10  1.7447E-16  7.8408E+08  7.6722E+09
Cs-136                 1.4194E-11  1.9367E-19  8.5758E+05  2.2277E+09
Cs-137                 1.8638E-10  2.1427E-15  9.4188E+09  6.1771E+09
Ba-140                 3.1416E-11  4.2913E-19  1.8459E+06  2.2766E+09
La-140                 3.6493E-11  6.5655E-20  2.8242E+05  4.5000E+08
Ce-141                 2.0059E-12  7.0398E-20  3.0067E+05  5.5025E+07
Ce-144                 2.8305E-12  8.8743E-19  3.7113E+06  4.4671E+07
Pr-143                 3.9463E-13  5.8604E-21  2.4680E+04  2.1408E+07
Pu-238                 1.2331E-14  7.2027E-19  1.8225E+06  1.8067E+05
Pu-239                 1.0882E-15  1.7508E-17  4.4115E+07  1.5848E+04
Pu-240                 2.0168E-15  8.8508E-18  2.2209E+07  2.9636E+04
Pu-241                 4.3298E-13  4.2031E-18  1.0503E+07  6.3871E+06
Am-241                 3.4820E-16  1.0145E-19  2.5351E+05  4.2980E+03
Cm-242                 6.5058E-14  1.9629E-20  4.8848E+04  1.0830E+06
Cm-244                 4.8699E-15  6.0195E-20  1.4857E+05  7.1782E+04

CR Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    1.6683E+18  0.0000E+00
Elemental I (atoms)    5.8730E+07  0.0000E+00
Organic I (atoms)      1.9649E+12  0.0000E+00
Aerosols (kg)          2.4568E-15  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.8529E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.8529E-14
Total I (Ci)                                    5.2993E-05

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.7602E+20
Elemental I (atoms)    0.0000E+00  4.6713E+14
Organic I (atoms)      0.0000E+00  7.2597E+15
Aerosols (kg)          0.0000E+00  4.3729E-10

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
```

```
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.4605E+20
Elemental I (atoms)    1.0096E+15  3.1224E+13
Organic I (atoms)      1.5844E+16  4.9002E+14
Aerosols (kg)          9.4459E-10  2.9214E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    1.2200E+21  0.0000E+00
Elemental I (atoms)    4.9175E+14  0.0000E+00
Organic I (atoms)      7.6990E+15  0.0000E+00
Aerosols (kg)          4.6643E-10  0.0000E+00

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######################################################################
                              I-131 Summary
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Time (hr)	DW I-131 (Curies)	RB I-131 (Curies)	Environment I-131 (Curies)
0.000	3.8944E+03	6.7611E-04	3.7369E-14
0.260	1.8207E+06	1.4794E+02	1.7514E-03
0.333	2.3333E+06	2.4304E+02	4.6987E-03
0.500	2.5229E+05	3.1098E+02	2.1931E-02
0.750	3.9747E+05	3.6954E+02	8.0451E-02
1.000	4.0160E+05	4.3161E+02	1.8384E-01
1.400	4.0806E+05	5.3214E+02	4.6223E-01
1.500	4.0967E+05	5.5750E+02	5.5710E-01
1.800	4.1449E+05	6.3413E+02	9.1231E-01
2.000	4.1769E+05	6.8567E+02	1.2146E+00
2.100	5.0440E+04	6.9503E+02	1.3129E+00
2.300	4.2146E+04	7.0027E+02	1.5245E+00
2.400	3.9528E+04	7.0257E+02	1.6378E+00
2.700	3.5071E+04	7.0875E+02	2.0088E+00
3.000	3.3235E+04	7.1438E+02	2.4267E+00
3.300	3.2463E+04	7.1977E+02	2.8923E+00
3.600	3.2124E+04	7.2505E+02	3.4062E+00
3.900	3.1960E+04	7.3028E+02	3.9690E+00
4.000	3.1924E+04	7.3202E+02	4.1676E+00
4.300	3.1880E+04	7.3722E+02	4.7961E+00
4.600	3.1836E+04	7.4241E+02	5.4743E+00
4.900	3.1792E+04	7.4758E+02	6.2022E+00
5.200	3.1748E+04	7.5274E+02	6.9800E+00
5.500	3.1704E+04	7.5789E+02	7.8076E+00
5.800	3.1661E+04	7.6302E+02	8.6849E+00
6.100	3.1617E+04	7.6814E+02	9.6119E+00
6.400	3.1573E+04	7.7324E+02	1.0588E+01
6.700	3.1530E+04	7.7833E+02	1.1614E+01
7.000	3.1486E+04	7.8341E+02	1.2688E+01
7.300	3.1443E+04	7.8847E+02	1.3810E+01
7.600	3.1400E+04	7.9352E+02	1.4981E+01
7.900	3.1356E+04	7.9856E+02	1.6198E+01
8.000	3.1342E+04	8.0023E+02	1.6615E+01
8.300	3.1299E+04	8.0525E+02	1.7882E+01
8.600	3.1256E+04	8.1025E+02	1.9195E+01
8.900	3.1212E+04	8.1524E+02	2.0554E+01
9.200	3.1169E+04	8.2022E+02	2.1957E+01
9.500	3.1126E+04	8.2519E+02	2.3404E+01
9.800	3.1084E+04	8.3014E+02	2.4895E+01
10.100	3.1041E+04	8.3507E+02	2.6429E+01
10.400	3.0998E+04	8.4000E+02	2.8005E+01
24.000	2.9118E+04	1.0495E+03	1.3184E+02
48.000	2.6392E+04	1.1624E+03	2.4538E+02
72.000	2.3921E+04	1.2471E+03	3.5615E+02
96.000	2.1682E+04	1.3078E+03	4.5848E+02
240.000	1.2021E+04	1.3408E+03	9.0274E+02
480.000	4.4981E+03	9.2479E+02	1.2482E+03
720.000	1.6831E+03	5.2468E+02	1.3774E+03

Time (hr)	CR I-131 (Curies)	MSL "B" Volume 1 I-131 (Curies)	MSL "B" Volume 2 I-131 (Curies)
0.000	1.6834E-16	3.5698E-04	5.2857E-10
0.260	7.3993E-06	7.7000E+01	5.2637E-02
0.333	1.9503E-05	1.2599E+02	1.0999E-01
0.500	8.7014E-05	1.5775E+02	3.0136E-01
0.750	1.2068E-04	1.8165E+02	6.2570E-01
1.000	1.8566E-04	2.0639E+02	1.0043E+00
1.400	3.5725E-04	2.4454E+02	1.7420E+00
1.500	4.1381E-04	2.5380E+02	1.9542E+00
1.800	6.1833E-04	2.8100E+02	2.6633E+00
2.000	7.8518E-04	2.9864E+02	3.1992E+00
2.100	7.9005E-04	2.9859E+02	3.3628E+00
2.300	8.0818E-04	2.9444E+02	3.6940E+00
2.400	8.2109E-04	2.9229E+02	3.8611E+00
2.700	8.7326E-04	2.8577E+02	4.3684E+00
3.000	9.4271E-04	2.7927E+02	4.8830E+00
3.300	1.0263E-03	2.7290E+02	5.4039E+00
3.600	1.1215E-03	2.6668E+02	5.9296E+00
3.900	1.2262E-03	2.6063E+02	6.4590E+00
4.000	1.2629E-03	2.5866E+02	6.6361E+00
4.300	1.3776E-03	2.5284E+02	7.1688E+00
4.600	1.4982E-03	2.4719E+02	7.7029E+00
4.900	1.6235E-03	2.4170E+02	8.2374E+00
5.200	1.7527E-03	2.3638E+02	8.7714E+00
5.500	1.8849E-03	2.3121E+02	9.3043E+00
5.800	2.0194E-03	2.2618E+02	9.8353E+00
6.100	2.1557E-03	2.2131E+02	1.0364E+01
6.400	2.2932E-03	2.1657E+02	1.0889E+01
6.700	2.4316E-03	2.1197E+02	1.1410E+01
7.000	2.5704E-03	2.0751E+02	1.1928E+01
7.300	2.7093E-03	2.0317E+02	1.2440E+01
7.600	2.8481E-03	1.9896E+02	1.2948E+01
7.900	2.9865E-03	1.9487E+02	1.3450E+01
8.000	3.0325E-03	1.9354E+02	1.3616E+01
8.300	2.6741E-03	1.8960E+02	1.4106E+01
8.600	2.4000E-03	1.8578E+02	1.4591E+01
8.900	2.1925E-03	1.8207E+02	1.5069E+01
9.200	2.0376E-03	1.7847E+02	1.5540E+01
9.500	1.9244E-03	1.7497E+02	1.6005E+01
9.800	1.8440E-03	1.7158E+02	1.6463E+01
10.100	1.7895E-03	1.6828E+02	1.6913E+01
10.400	1.7553E-03	1.6507E+02	1.7357E+01
24.000	2.7864E-03	8.5010E+01	2.9822E+01
48.000	1.0262E-03	6.0713E+01	3.1021E+01
72.000	9.6622E-04	5.0296E+01	2.9306E+01
96.000	8.8239E-04	4.4216E+01	2.6826E+01
240.000	3.7947E-04	2.4159E+01	1.4887E+01
480.000	1.4162E-04	9.0396E+00	5.5125E+00
720.000	5.2993E-05	3.3825E+00	2.0619E+00

Time (hr)	MSL "C" Volume 3 I-131 (Curies)	MSL "C" Volume 4 I-131 (Curies)
0.000	3.5698E-04	6.2309E-10
0.260	7.6827E+01	6.2024E-02
0.333	1.2563E+02	1.2959E-01
0.500	1.5676E+02	3.5488E-01
0.750	1.7964E+02	7.3596E-01
1.000	2.0324E+02	1.1798E+00
1.400	2.3935E+02	2.0418E+00
1.500	2.4808E+02	2.2893E+00
1.800	2.7356E+02	3.1148E+00
2.000	2.9000E+02	3.7375E+00
2.100	2.8961E+02	3.9275E+00
2.300	2.8477E+02	4.3115E+00
2.400	2.8229E+02	4.5051E+00
2.700	2.7482E+02	5.0919E+00
3.000	2.6744E+02	5.6863E+00
3.300	2.6023E+02	6.2866E+00
3.600	2.5324E+02	6.8915E+00
3.900	2.4647E+02	7.4996E+00
4.000	2.4427E+02	7.7029E+00

4.300	2.3780E+02	8.3134E+00
4.600	2.3154E+02	8.9245E+00
4.900	2.2550E+02	9.5352E+00
5.200	2.1966E+02	1.0144E+01
5.500	2.1401E+02	1.0751E+01
5.800	2.0855E+02	1.1355E+01
6.100	2.0327E+02	1.1955E+01
6.400	1.9817E+02	1.2551E+01
6.700	1.9324E+02	1.3141E+01
7.000	1.8848E+02	1.3726E+01
7.300	1.8387E+02	1.4304E+01
7.600	1.7942E+02	1.4876E+01
7.900	1.7511E+02	1.5441E+01
8.000	1.7371E+02	1.5628E+01
8.300	1.6959E+02	1.6180E+01
8.600	1.6561E+02	1.6724E+01
8.900	1.6177E+02	1.7260E+01
9.200	1.5805E+02	1.7788E+01
9.500	1.5446E+02	1.8308E+01
9.800	1.5098E+02	1.8819E+01
10.100	1.4762E+02	1.9321E+01
10.400	1.4437E+02	1.9815E+01
24.000	6.9514E+01	3.3167E+01
48.000	5.0363E+01	3.4011E+01
72.000	4.2593E+01	3.1893E+01
96.000	3.7868E+01	2.9102E+01
240.000	2.0847E+01	1.6111E+01
480.000	7.8004E+00	5.9541E+00
720.000	2.9188E+00	2.2261E+00

##
Cumulative Dose Summary
##

	EAB		LPZ		CR	
Time (hr)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.260	1.6724E-04	9.3157E-06	1.8686E-05	1.0409E-06	2.6274E-04	8.6199E-06
0.333	4.4832E-04	2.4797E-05	5.0091E-05	2.7706E-06	8.8969E-04	2.9165E-05
0.500	2.0889E-03	1.1642E-04	2.3340E-04	1.3008E-05	6.2803E-03	2.0563E-04
0.750	7.6445E-03	4.7958E-04	8.5413E-04	5.3584E-05	2.3180E-02	7.6754E-04
1.000	1.7429E-02	1.3789E-03	1.9474E-03	1.5406E-04	4.8223E-02	1.6433E-03
1.400	4.3691E-02	5.3152E-03	4.8817E-03	5.9387E-04	1.1845E-01	4.4111E-03
1.500	5.2615E-02	7.0530E-03	5.8788E-03	7.8804E-04	1.4395E-01	5.5115E-03
1.800	8.5946E-02	1.4861E-02	9.6030E-03	1.6605E-03	2.4529E-01	1.0268E-02
2.000	1.1423E-01	2.2736E-02	1.2763E-02	2.5403E-03	3.3739E-01	1.5001E-02
2.100	1.2341E-01	2.5471E-02	1.3789E-02	2.8459E-03	3.8910E-01	1.7758E-02
2.300	1.4314E-01	3.1542E-02	1.5993E-02	3.5243E-03	4.9377E-01	2.3426E-02
2.400	1.5369E-01	3.4885E-02	1.7172E-02	3.8978E-03	5.4707E-01	2.6362E-02
2.700	1.8815E-01	4.6171E-02	2.1022E-02	5.1588E-03	7.1272E-01	3.5710E-02
3.000	2.2683E-01	5.9355E-02	2.5344E-02	6.6318E-03	8.8972E-01	4.6066E-02
3.300	2.6978E-01	7.4417E-02	3.0143E-02	8.3147E-03	1.0811E+00	5.7632E-02
3.600	3.1704E-01	9.1304E-02	3.5423E-02	1.0202E-02	1.2892E+00	7.0560E-02
3.900	3.6862E-01	1.0994E-01	4.1187E-02	1.2284E-02	1.5160E+00	8.4959E-02
4.000	3.8678E-01	1.1652E-01	4.3216E-02	1.3019E-02	1.5960E+00	9.0098E-02
4.300	4.4415E-01	1.3734E-01	4.9626E-02	1.5345E-02	1.8501E+00	1.0656E-01
4.600	5.0586E-01	1.5967E-01	5.6521E-02	1.7840E-02	2.1260E+00	1.2462E-01
4.900	5.7191E-01	1.8340E-01	6.3900E-02	2.0491E-02	2.4246E+00	1.4428E-01
5.200	6.4226E-01	2.0841E-01	7.1761E-02	2.3286E-02	2.7466E+00	1.6554E-01
5.500	7.1690E-01	2.3460E-01	8.0101E-02	2.6212E-02	3.0925E+00	1.8836E-01
5.800	7.9581E-01	2.6184E-01	8.8917E-02	2.9256E-02	3.4628E+00	2.1273E-01
6.100	8.7893E-01	2.9004E-01	9.8205E-02	3.2407E-02	3.8576E+00	2.3860E-01
6.400	9.6624E-01	3.1910E-01	1.0796E-01	3.5653E-02	4.2772E+00	2.6591E-01
6.700	1.0577E+00	3.4890E-01	1.1818E-01	3.8983E-02	4.7215E+00	2.9463E-01
7.000	1.1532E+00	3.7937E-01	1.2885E-01	4.2388E-02	5.1907E+00	3.2469E-01
7.300	1.2528E+00	4.1042E-01	1.3998E-01	4.5857E-02	5.6846E+00	3.5605E-01
7.600	1.3563E+00	4.4196E-01	1.5155E-01	4.9381E-02	6.2031E+00	3.8864E-01
7.900	1.4638E+00	4.7394E-01	1.6355E-01	5.2954E-02	6.7461E+00	4.2241E-01
8.000	1.5005E+00	4.8468E-01	1.6765E-01	5.4154E-02	6.9325E+00	4.3392E-01
8.300	1.6119E+00	5.1708E-01	1.7194E-01	5.6453E-02	7.4604E+00	4.6618E-01
8.600	1.7271E+00	5.4976E-01	1.7638E-01	5.8769E-02	7.9288E+00	4.9434E-01

```
   8.900 1.8460E+00 5.8266E-01 1.8095E-01 6.1097E-02 8.3518E+00 5.1941E-01
   9.200 1.9685E+00 6.1574E-01 1.8567E-01 6.3434E-02 8.7405E+00 5.4216E-01
   9.500 2.0945E+00 6.4895E-01 1.9052E-01 6.5778E-02 9.1039E+00 5.6317E-01
   9.800 2.2240E+00 6.8226E-01 1.9551E-01 6.8124E-02 9.4487E+00 5.8291E-01
  10.100 2.3569E+00 7.1562E-01 2.0062E-01 7.0471E-02 9.7805E+00 6.0171E-01
  10.400 2.4932E+00 7.4901E-01 2.0587E-01 7.2817E-02 1.0103E+01 6.1985E-01
  24.000 1.1088E+01 2.1722E+00 5.3675E-01 1.6969E-01 2.8007E+01 1.4717E+00
  48.000 1.9762E+01 3.0999E+00 7.1478E-01 1.9581E-01 3.6667E+01 1.8229E+00
  72.000 2.7743E+01 3.8419E+00 8.7856E-01 2.1637E-01 4.3923E+01 2.1023E+00
  96.000 3.4901E+01 4.4842E+00 1.0255E+00 2.3409E-01 5.0443E+01 2.3502E+00
 240.000 6.5245E+01 6.9952E+00 1.2037E+00 2.5370E-01 6.4758E+01 2.8815E+00
 480.000 8.8712E+01 8.5946E+00 1.3415E+00 2.6581E-01 7.5789E+01 3.2703E+00
 720.000 9.7492E+01 9.0743E+00 1.3931E+00 2.6928E-01 7.9917E+01 3.4086E+00

######################################################################
                         Worst Two-Hour Doses
######################################################################

EAB
   Time    Whole Body     Thyroid         TEDE
   (hr)      (rem)         (rem)          (rem)
    8.4   1.9477E-01   8.4287E-01   2.2104E-01
```

12.8 RADTRAD Output File "JAFMS _270_shine.out"

```
######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/05/2019  at  9:37:27
######################################################################

######################################################################
                     File information
######################################################################

Plant file           = C:\radtrad3.03\Fitz\JAFMS_270_shine.psf
Inventory file       = c:\radtrad3.03\fitz\jafloca.nif
Release file         = c:\radtrad3.03\defaults\bwr_dba.rft
Dose Conversion file = c:\radtrad3.03\defaults\fgr11&12.inp




    #####    ####   #####    #  #     #  #####   #    #  #####
    #    #  #       #        #  ##    #  #    #  #    #    #
    #    #  #       #        #  # #   #  #    #  #    #    #
    #####    ####   ####     #  #  #  #  #####   #    #    #
    #            #  #        #  #   # #  #       #    #    #
    #            #  #        #  #    ##  #       #    #    #
    #        ####   #        #  #     #  #        ####     #


Radtrad 3.03 4/15/2001
Containment Leakage from Drywell Using CAVEX Core Inventory -  Containment Shine Dose
Nuclide Inventory File:
c:\radtrad3.03\fitz\jafloca.nif
Plant Power Level:
 2.5867E+03
Compartments:
  8
Compartment 1:
DW
  3
 1.5000E+05
  1
  0
  0
  0
  0
Compartment 2:
RB
  3
 1.1850E+06
  0
  0
  0
  0
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
CR
  1
 1.0100E+05
  0
  0
  0
```

```
  0
  0
Compartment 5:
MSL "B" Volume 1
  3
 2.9829E+02
  0
  0
  0
  0
  0
Compartment 6:
MSL "B" Volume 2
  3
 5.0800E+02
  0
  0
  0
  0
  0
Compartment 7:
MSL "C" Volume 3
  3
 2.5777E+02
  0
  0
  0
  0
  0
Compartment 8:
MSL "C" Volume 4
  3
 5.4852E+02
  0
  0
  0
  0
  0
Pathways:
 11
Pathway 1:
DW to  RB
  1
  2
  4
Pathway 2:
RB toEnvironment
  2
  3
  2
Pathway 3:
Environment to CR Unfiltered
  3
  4
  2
Pathway 4:
Environment to  CR Filtered
  3
  4
  2
Pathway 5:
CR to  Environment - Exhaust
  4
  3
  2
Pathway 6:
DW to  MSL "B" Volume 1
  1
  5
  2
Pathway 7:
MSL "B" Volume 1 to  MSL "B" Volume 2
```

```
  5
  6
  2
Pathway 8:
MSL "B" Volume 2 to  Environment
  6
  3
  2
Pathway 9:
DW to  MSL "C" Volume 3
  1
  7
  2
Pathway 10:
MSL "C" Volume 3 to  MSL "C" Volume 4
  7
  8
  2
Pathway 11:
MSL "C" Volume 4 to  Environment
  8
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\radtrad3.03\defaults\fgr11&12.inp
c:\radtrad3.03\defaults\bwr_dba.rft
  0.0000E+00
  1
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  8
Compartment 1:
  1
  1
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.5000E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   3.0000E+00
  2.3000E+00   3.0000E+00
  2.4000E+00   3.0000E+00
  3.0000E+00   3.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.5000E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   0.0000E+00
  2.3000E+00   0.0000E+00
  2.4000E+00   0.0000E+00
  3.0000E+00   0.0000E+00
```

```
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 5:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 6:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 7:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 8:
  0
  1
```

```
  0
  0
  0
  0
  0
  0
  0
Pathways:
 11
Pathway 1:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.5000E+00
  2.4000E+01   7.5000E-01
  7.2000E+02   0.0000E+00
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  3.3330E-01   0.0000E+00   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   4.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+02   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
```

```
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   1.0000E+02   1.0000E+02   1.0000E+02
  5.0000E-01   1.3000E+03   1.0000E+02   1.0000E+02   1.0000E+02
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   8.2500E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   4.7800E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   2.3900E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   8.2500E-01   9.9940E+01   4.9200E+00   0.0000E+00
  2.0000E+00   4.7800E-01   9.9940E+01   4.9200E+00   0.0000E+00
  8.0000E+00   4.7800E-01   9.9940E+01   6.5700E+00   0.0000E+00
  2.4000E+01   2.3900E-01   9.9940E+01   1.1440E+01   0.0000E+00
  4.8000E+01   2.3900E-01   9.9940E+01   2.3680E+01   0.0000E+00
  7.2000E+01   2.3900E-01   9.9940E+01   4.1310E+01   0.0000E+00
  9.6000E+01   2.3900E-01   9.9940E+01   6.0070E+01   0.0000E+00
  2.4000E+02   2.3900E-01   9.9940E+01   9.5290E+01   0.0000E+00
  4.8000E+02   2.3900E-01   9.9940E+01   9.6640E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 8:
  0
  0
  0
  0
  0
  1
 10
```

```
  0.0000E+00   2.2500E+00   0.0000E+00   8.6800E+00   0.0000E+00
  2.0000E+00   1.3030E+00   0.0000E+00   8.6800E+00   0.0000E+00
  8.0000E+00   1.3030E+00   0.0000E+00   1.1520E+01   0.0000E+00
  2.4000E+01   6.5200E-01   0.0000E+00   1.9630E+01   0.0000E+00
  4.8000E+01   6.5200E-01   0.0000E+00   3.8400E+01   0.0000E+00
  7.2000E+01   6.5200E-01   0.0000E+00   6.1300E+01   0.0000E+00
  9.6000E+01   6.5200E-01   0.0000E+00   8.0030E+01   0.0000E+00
  2.4000E+02   6.5200E-01   0.0000E+00   9.7710E+01   0.0000E+00
  4.8000E+02   6.5200E-01   0.0000E+00   9.7880E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 9:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   8.2500E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   4.7800E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   2.3900E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 10:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   8.2500E-01   9.9910E+01   3.6500E+00   0.0000E+00
  2.0000E+00   4.7800E-01   9.9910E+01   3.6500E+00   0.0000E+00
  8.0000E+00   4.7800E-01   9.9910E+01   4.8900E+00   0.0000E+00
  2.4000E+01   2.3900E-01   9.9910E+01   8.5700E+00   0.0000E+00
  4.8000E+01   2.3900E-01   9.9910E+01   1.8070E+01   0.0000E+00
  7.2000E+01   2.3900E-01   9.9910E+01   3.2550E+01   0.0000E+00
  9.6000E+01   2.3900E-01   9.9910E+01   4.9360E+01   0.0000E+00
  2.4000E+02   2.3900E-01   9.9910E+01   9.1170E+01   0.0000E+00
  4.8000E+02   2.3900E-01   9.9910E+01   9.3910E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 11:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   2.2500E+00   0.0000E+00   8.9700E+00   0.0000E+00
  2.0000E+00   1.3030E+00   0.0000E+00   8.9700E+00   0.0000E+00
  8.0000E+00   1.3030E+00   0.0000E+00   1.1900E+01   0.0000E+00
  2.4000E+01   6.5200E-01   0.0000E+00   2.0250E+01   0.0000E+00
  4.8000E+01   6.5200E-01   0.0000E+00   3.9440E+01   0.0000E+00
  7.2000E+01   6.5200E-01   0.0000E+00   6.2550E+01   0.0000E+00
```

```
  9.6000E+01   6.5200E-01   0.0000E+00   8.1060E+01   0.0000E+00
  2.4000E+02   6.5200E-01   0.0000E+00   9.7730E+01   0.0000E+00
  4.8000E+02   6.5200E-01   0.0000E+00   9.7890E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
EAB
  3
  1
  4
  0.0000E+00   1.7900E-04
  1.0000E+00   1.7900E-04
  2.0000E+00   1.7900E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  0
Location 2:
LPZ
  3
  1
  6
  0.0000E+00   4.5200E-03
  2.0000E+00   3.3300E-03
  8.0000E+00   1.1900E-03
  2.4000E+01   4.9600E-04
  9.6000E+01   2.5600E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   2.3000E-04
  0
Location 3:
CR
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  7
  0.0000E+00   4.5200E-03
  3.3330E-01   4.5200E-03
  2.0000E+00   3.3300E-03
  8.0000E+00   1.1900E-03
  2.4000E+01   8.2700E-04
  9.6000E+01   6.4000E-04
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   1.0000E-02
  1.0000E+00   1.0000E-01
```

```
  2.0000E+00   5.0000E-01
  8.0000E+00   1.0000E+00
  2.4000E+01   2.0000E+00
  9.6000E+01   5.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\radtrad3.o396
  1
  1
  1
  0
  0
End of Scenario File
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/05/2019  at  9:37:27
########################################################################

########################################################################
                    Plant Description
########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.5867E+03 MWth

Number of compartments    =   8

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: DW
Compartment volume =   1.5000E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Exit Pathway Number    1: DW to  RB
   Exit Pathway Number    6: DW to  MSL "B" Volume 1
   Exit Pathway Number    9: DW to  MSL "C" Volume 3

Compartment number  2
Name: RB
Compartment volume =   1.1850E+06 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  2
   Inlet Pathway Number   1: DW to  RB
   Exit Pathway Number    2: RB toEnvironment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   2: RB toEnvironment
   Inlet Pathway Number   5: CR to  Environment - Exhaust
   Inlet Pathway Number   8: MSL "B" Volume 2 to  Environment
   Inlet Pathway Number  11: MSL "C" Volume 4 to  Environment
   Exit Pathway Number    3: Environment to CR Unfiltered
   Exit Pathway Number    4: Environment to  CR Filtered

Compartment number  4
Name: CR
Compartment volume =   1.0100E+05 (Cubic feet)
Compartment type is Control Room
Pathways into and out of compartment  4
   Inlet Pathway Number   3: Environment to CR Unfiltered
   Inlet Pathway Number   4: Environment to  CR Filtered
   Exit Pathway Number    5: CR to  Environment - Exhaust

Compartment number  5
Name: MSL "B" Volume 1
Compartment volume =   2.9829E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  5
   Inlet Pathway Number   6: DW to  MSL "B" Volume 1
   Exit Pathway Number    7: MSL "B" Volume 1 to  MSL "B" Volume 2

Compartment number  6
Name: MSL "B" Volume 2
Compartment volume =   5.0800E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  6
   Inlet Pathway Number   7: MSL "B" Volume 1 to  MSL "B" Volume 2
   Exit Pathway Number    8: MSL "B" Volume 2 to  Environment
```

```
Compartment number  7
Name: MSL "C" Volume 3
Compartment volume =   2.5777E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  7
   Inlet Pathway Number   9: DW to  MSL "C" Volume 3
   Exit Pathway Number   10: MSL "C" Volume 3 to  MSL "C" Volume 4

Compartment number  8
Name: MSL "C" Volume 4
Compartment volume =   5.4852E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  8
   Inlet Pathway Number  10: MSL "C" Volume 3 to  MSL "C" Volume 4
   Exit Pathway Number   11: MSL "C" Volume 4 to  Environment

Total number of pathways =  11
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/05/2019  at  9:37:27
########################################################################

########################################################################
                    Scenario Description
########################################################################

Radioactive Decay is enabled
Calculation of Daughters is enabled

Release Fractions and Timings
               GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
            0.500000 hr    1.5000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        4.279E+03
IODINE       5.0000E-02     2.5000E-01      0.0000E+00        2.249E+02
CESIUM       5.0000E-02     2.0000E-01      0.0000E+00        4.682E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        3.100E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.674E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.550E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.852E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        5.214E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.978E+00

Inventory Power =      2587. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
               (Ci/MWt)      (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   1.529E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.830E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   5.260E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.670E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.740E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.360E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.600E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   3.240E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   4.260E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.030E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.200E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   4.400E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   4.110E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.250E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.640E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   5.020E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.860E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   5.030E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.140E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.540E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.460E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   3.180E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.940E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.980E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.560E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   7.910E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.530E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   4.340E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   7.420E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.430E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   5.380E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.860E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.710E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.960E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.640E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.430E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
 I-135     2   5.330E+04  2.380E+04   8.294E-14   8.460E-09   3.320E-10
 Xe-133    1   5.630E+04  4.532E+05   1.560E-15   0.000E+00   0.000E+00
 Xe-135    1   2.310E+04  3.272E+04   1.190E-14   0.000E+00   0.000E+00
 Cs-134    3   7.220E+03  6.507E+07   7.570E-14   1.110E-08   1.250E-08
 Cs-136    3   2.160E+03  1.132E+06   1.060E-13   1.730E-09   1.980E-09
 Cs-137    3   5.810E+03  9.467E+08   2.725E-14   7.930E-09   8.630E-09
 Ba-139    6   5.150E+04  4.962E+03   2.170E-15   2.400E-12   4.640E-11
```

Ba-140	6	5.000E+04	1.101E+06	8.580E-15	2.560E-10	1.010E-09
La-140	9	5.240E+04	1.450E+05	1.170E-13	6.870E-11	1.310E-09
La-141	9	4.700E+04	1.415E+04	2.390E-15	9.400E-12	1.570E-10
La-142	9	4.600E+04	5.550E+03	1.440E-13	8.740E-12	6.840E-11
Ce-141	8	4.720E+04	2.808E+06	3.430E-15	2.550E-11	2.420E-09
Ce-143	8	4.560E+04	1.188E+05	1.290E-14	6.230E-12	9.160E-10
Ce-144	8	3.790E+04	2.456E+07	2.773E-15	2.920E-10	1.010E-07
Pr-143	9	4.430E+04	1.172E+06	2.100E-17	1.680E-18	2.190E-09
Nd-147	9	1.850E+04	9.487E+05	6.190E-15	1.820E-11	1.850E-09
Np-239	8	5.370E+05	2.035E+05	7.690E-15	7.620E-12	6.780E-10
Pu-238	8	1.530E+02	2.769E+09	4.880E-18	3.860E-10	7.790E-05
Pu-239	8	1.340E+01	7.594E+11	4.240E-18	3.750E-10	8.330E-05
Pu-240	8	2.510E+01	2.063E+11	4.750E-18	3.760E-10	8.330E-05
Pu-241	8	5.410E+03	4.544E+08	7.250E-20	9.150E-12	1.340E-06
Am-241	9	9.060E+00	1.364E+10	8.180E-16	1.600E-09	1.200E-04
Cm-242	9	2.300E+03	1.407E+07	5.690E-18	9.410E-10	4.670E-06
Cm-244	9	1.520E+02	5.715E+08	4.910E-18	1.010E-09	6.700E-05

Nuclide	Daughter	Fraction	Daughter	Fraction	Daughter	Fraction
Kr-85m	Kr-85	0.21	none	0.00	none	0.00
Kr-87	Rb-87	1.00	none	0.00	none	0.00
Kr-88	Rb-88	1.00	none	0.00	none	0.00
Sr-90	Y-90	1.00	none	0.00	none	0.00
Sr-91	Y-91m	0.58	Y-91	0.42	none	0.00
Sr-92	Y-92	1.00	none	0.00	none	0.00
Y-93	Zr-93	1.00	none	0.00	none	0.00
Zr-95	Nb-95m	0.01	Nb-95	0.99	none	0.00
Zr-97	Nb-97m	0.95	Nb-97	0.05	none	0.00
Mo-99	Tc-99m	0.88	Tc-99	0.12	none	0.00
Tc-99m	Tc-99	1.00	none	0.00	none	0.00
Ru-103	Rh-103m	1.00	none	0.00	none	0.00
Ru-105	Rh-105	1.00	none	0.00	none	0.00
Ru-106	Rh-106	1.00	none	0.00	none	0.00
Sb-127	Te-127m	0.18	Te-127	0.82	none	0.00
Sb-129	Te-129m	0.22	Te-129	0.77	none	0.00
Te-127m	Te-127	0.98	none	0.00	none	0.00
Te-129	I-129	1.00	none	0.00	none	0.00
Te-129m	Te-129	0.65	I-129	0.35	none	0.00
Te-131m	Te-131	0.22	I-131	0.78	none	0.00
Te-132	I-132	1.00	none	0.00	none	0.00
I-131	Xe-131m	0.01	none	0.00	none	0.00
I-133	Xe-133m	0.03	Xe-133	0.97	none	0.00
I-135	Xe-135m	0.15	Xe-135	0.85	none	0.00
Xe-135	Cs-135	1.00	none	0.00	none	0.00
Cs-137	Ba-137m	0.95	none	0.00	none	0.00
Ba-140	La-140	1.00	none	0.00	none	0.00
La-141	Ce-141	1.00	none	0.00	none	0.00
Ce-143	Pr-143	1.00	none	0.00	none	0.00
Ce-144	Pr-144m	0.02	Pr-144	0.98	none	0.00
Nd-147	Pm-147	1.00	none	0.00	none	0.00
Np-239	Pu-239	1.00	none	0.00	none	0.00
Pu-238	U-234	1.00	none	0.00	none	0.00
Pu-239	U-235	1.00	none	0.00	none	0.00
Pu-240	U-236	1.00	none	0.00	none	0.00
Pu-241	U-237	0.00	Am-241	1.00	none	0.00
Am-241	Np-237	1.00	none	0.00	none	0.00
Cm-242	Pu-238	1.00	none	0.00	none	0.00
Cm-244	Pu-240	1.00	none	0.00	none	0.00

Iodine fractions
- Aerosol = 9.5000E-01
- Elemental = 4.8500E-02
- Organic = 1.5000E-03

COMPARTMENT DATA

Compartment number 1: DW

Sprays: Aerosal Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01

1.5000E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	3.0000E+00
2.3000E+00	3.0000E+00
2.4000E+00	3.0000E+00
3.0000E+00	3.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Sprays: Elemental Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01
1.5000E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	0.0000E+00
2.3000E+00	0.0000E+00
2.4000E+00	0.0000E+00
3.0000E+00	0.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Compartment number 2: RB

Compartment number 3: Environment

Compartment number 4: CR

Compartment number 5: MSL "B" Volume 1

Compartment number 6: MSL "B" Volume 2

Compartment number 7: MSL "C" Volume 3

Compartment number 8: MSL "C" Volume 4

PATHWAY DATA

Pathway number 1: DW to RB

Convection Data

Time (hr)	Flow Rate (% / day)
0.0000E+00	1.5000E+00
2.4000E+01	7.5000E-01
7.2000E+02	0.0000E+00

Pathway number 2: RB toEnvironment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
3.3330E-01	0.0000E+00	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 3: Environment to CR Unfiltered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	4.0000E+02	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 4: Environment to CR Filtered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic

0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	9.0000E+02	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 5: CR to Environment - Exhaust

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	1.0000E+02	1.0000E+02	1.0000E+02
5.0000E-01	1.3000E+03	1.0000E+02	1.0000E+02	1.0000E+02
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 6: DW to MSL "B" Volume 1

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.0000E+00	4.7800E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.4000E+01	2.3900E-01	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 7: MSL "B" Volume 1 to MSL "B" Volume 2

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	9.9940E+01	4.9200E+00	0.0000E+00
2.0000E+00	4.7800E-01	9.9940E+01	4.9200E+00	0.0000E+00
8.0000E+00	4.7800E-01	9.9940E+01	6.5700E+00	0.0000E+00
2.4000E+01	2.3900E-01	9.9940E+01	1.1440E+01	0.0000E+00
4.8000E+01	2.3900E-01	9.9940E+01	2.3680E+01	0.0000E+00
7.2000E+01	2.3900E-01	9.9940E+01	4.1310E+01	0.0000E+00
9.6000E+01	2.3900E-01	9.9940E+01	6.0070E+01	0.0000E+00
2.4000E+02	2.3900E-01	9.9940E+01	9.5290E+01	0.0000E+00
4.8000E+02	2.3900E-01	9.9940E+01	9.6640E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 8: MSL "B" Volume 2 to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.2500E+00	0.0000E+00	8.6800E+00	0.0000E+00
2.0000E+00	1.3030E+00	0.0000E+00	8.6800E+00	0.0000E+00
8.0000E+00	1.3030E+00	0.0000E+00	1.1520E+01	0.0000E+00
2.4000E+01	6.5200E-01	0.0000E+00	1.9630E+01	0.0000E+00
4.8000E+01	6.5200E-01	0.0000E+00	3.8400E+01	0.0000E+00
7.2000E+01	6.5200E-01	0.0000E+00	6.1300E+01	0.0000E+00
9.6000E+01	6.5200E-01	0.0000E+00	8.0030E+01	0.0000E+00
2.4000E+02	6.5200E-01	0.0000E+00	9.7710E+01	0.0000E+00
4.8000E+02	6.5200E-01	0.0000E+00	9.7880E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 9: DW to MSL "C" Volume 3

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.0000E+00	4.7800E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.4000E+01	2.3900E-01	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 10: MSL "C" Volume 3 to MSL "C" Volume 4

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	9.9910E+01	3.6500E+00	0.0000E+00
2.0000E+00	4.7800E-01	9.9910E+01	3.6500E+00	0.0000E+00
8.0000E+00	4.7800E-01	9.9910E+01	4.8900E+00	0.0000E+00
2.4000E+01	2.3900E-01	9.9910E+01	8.5700E+00	0.0000E+00
4.8000E+01	2.3900E-01	9.9910E+01	1.8070E+01	0.0000E+00
7.2000E+01	2.3900E-01	9.9910E+01	3.2550E+01	0.0000E+00
9.6000E+01	2.3900E-01	9.9910E+01	4.9360E+01	0.0000E+00
2.4000E+02	2.3900E-01	9.9910E+01	9.1170E+01	0.0000E+00
4.8000E+02	2.3900E-01	9.9910E+01	9.3910E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 11: MSL "C" Volume 4 to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.2500E+00	0.0000E+00	8.9700E+00	0.0000E+00
2.0000E+00	1.3030E+00	0.0000E+00	8.9700E+00	0.0000E+00
8.0000E+00	1.3030E+00	0.0000E+00	1.1900E+01	0.0000E+00
2.4000E+01	6.5200E-01	0.0000E+00	2.0250E+01	0.0000E+00
4.8000E+01	6.5200E-01	0.0000E+00	3.9440E+01	0.0000E+00
7.2000E+01	6.5200E-01	0.0000E+00	6.2550E+01	0.0000E+00
9.6000E+01	6.5200E-01	0.0000E+00	8.1060E+01	0.0000E+00
2.4000E+02	6.5200E-01	0.0000E+00	9.7730E+01	0.0000E+00
4.8000E+02	6.5200E-01	0.0000E+00	9.7890E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

LOCATION DATA

Location EAB is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	1.7900E-04
1.0000E+00	1.7900E-04
2.0000E+00	1.7900E-04
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
7.2000E+02	3.5000E-04

Location LPZ is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	4.5200E-03
2.0000E+00	3.3300E-03
8.0000E+00	1.1900E-03
2.4000E+01	4.9600E-04
9.6000E+01	2.5600E-04
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
8.0000E+00	1.8000E-04
2.4000E+01	2.3000E-04
7.2000E+02	2.3000E-04

Location CR is in compartment 4

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	4.5200E-03
3.3330E-01	4.5200E-03
2.0000E+00	3.3300E-03
8.0000E+00	1.1900E-03
2.4000E+01	8.2700E-04

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        9.6000E+01          6.4000E-04
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)          Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.5000E-04
        7.2000E+02                 3.5000E-04

      Location Occupancy Factor Data
       Time (hr)          Occupancy Factor
        0.0000E+00            1.0000E+00
        2.4000E+01            6.0000E-01
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time             Time step
       0.0000E+00       1.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       5.0000E-01
       8.0000E+00       1.0000E+00
       2.4000E+01       2.0000E+00
       9.6000E+01       5.0000E+00
       7.2000E+02       0.0000E+00
```

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######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/05/2019  at  9:37:27
######################################################################




     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


######################################################################
           Dose, Detailed model and Detailed Inventory Output
######################################################################

EAB Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0539E-05  4.4832E-04  2.4797E-05
Accumulated dose (rem)  1.0539E-05  4.4832E-04  2.4797E-05

LPZ Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.6613E-04  1.1321E-02  6.2615E-04
Accumulated dose (rem)  2.6613E-04  1.1321E-02  6.2615E-04

CR Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.7313E-07  8.8969E-04  2.9165E-05
Accumulated dose (rem)  8.7313E-07  8.8969E-04  2.9165E-05

DW Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5339E+04  1.1556E-01  8.1875E+23  1.0363E+18
Kr-85m                 7.0976E+05  8.6246E-05  6.1104E+20  1.6510E+19
Kr-87                  1.2507E+06  4.4153E-05  3.0563E+20  3.0427E+19
Kr-88                  1.8753E+06  1.4955E-04  1.0235E+21  4.4068E+19
Rb-86                  5.6860E+03  6.9881E-05  4.8934E+20  1.2999E+17
I-131                  2.3333E+06  1.8821E-02  8.6521E+22  5.3353E+19
I-132                  3.2389E+06  3.1378E-04  1.4315E+21  7.5375E+19
I-133                  4.8078E+06  4.2441E-03  1.9217E+22  1.1030E+20
I-134                  4.2584E+06  1.5963E-04  7.1740E+20  1.0662E+20
I-135                  4.4365E+06  1.2633E-03  5.6353E+21  1.0261E+20
Xe-133                 4.8525E+06  2.5924E-02  1.1738E+23  1.1091E+20
Xe-135                 2.0375E+06  7.9785E-04  3.5591E+21  4.6188E+19
Cs-134                 6.2233E+05  4.8100E-01  2.1617E+24  1.4225E+19
Cs-136                 1.8605E+05  2.5385E-03  1.1240E+22  4.2535E+18
Cs-137                 5.0080E+05  5.7575E+00  2.5308E+25  1.1447E+19

DW Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4163E+23  0.0000E+00
Elemental I (atoms)    5.5058E+21  0.0000E+00
Organic I (atoms)      1.7028E+20  0.0000E+00
Aerosols (kg)          6.2647E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.7352E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.8338E-04
Total I (Ci)                                   1.9075E+07

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
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Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.7227E+00  1.2038E-05  8.5284E+19  7.3026E+13
Kr-85m                 7.3931E+01  8.9837E-09  6.3648E+16  1.1583E+15
Kr-87                  1.3027E+02  4.5991E-09  3.1835E+16  2.1109E+15
Kr-88                  1.9534E+02  1.5578E-08  1.0661E+17  3.0839E+15
Rb-86                  5.9228E-01  7.2790E-09  5.0971E+16  9.1594E+12
I-131                  2.4304E+02  1.9604E-06  9.0121E+18  3.7592E+15
I-132                  3.3187E+02  3.2151E-08  1.4668E+17  5.2232E+15
I-133                  5.0080E+02  4.4208E-07  2.0017E+18  7.7656E+15
I-134                  4.4357E+02  1.6628E-08  7.4727E+16  7.3438E+15
I-135                  4.6212E+02  1.3159E-07  5.8699E+17  7.2095E+15
Xe-133                 5.0546E+02  2.7004E-06  1.2227E+19  7.8157E+15
Xe-135                 2.1223E+02  8.3107E-08  3.7073E+17  3.2610E+15
Cs-134                 6.4824E+01  5.0103E-05  2.2517E+20  1.0024E+15
Cs-136                 1.9379E+01  2.6442E-07  1.1708E+18  2.9971E+14
Cs-137                 5.2165E+01  5.9972E-04  2.6362E+21  8.0662E+14

RB Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.8084E+19  0.0000E+00
Elemental I (atoms)    5.7338E+17  0.0000E+00
Organic I (atoms)      1.7733E+16  0.0000E+00
Aerosols (kg)          6.5255E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.0198E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2960E-08
Total I (Ci)                                    1.9814E+03

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  8.5071E-06  2.1683E-11  1.5362E+14  8.2563E+07
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Kr-85m	1.3317E-04	1.6182E-14	1.1465E+11	1.3040E+09
Kr-87	2.3466E-04	8.2845E-15	5.7345E+10	2.3506E+09
Kr-88	3.5187E-04	2.8061E-14	1.9203E+11	3.4633E+09
Rb-86	8.0566E-10	9.9015E-18	6.9335E+07	7.8198E+03
I-131	1.9503E-05	1.5731E-13	7.2318E+11	1.8932E+08
I-132	2.6292E-05	2.5472E-15	1.1621E+10	2.5880E+08
I-133	4.0188E-05	3.5476E-14	1.6063E+11	3.9077E+08
I-134	3.5596E-05	1.3343E-15	5.9967E+09	3.6175E+08
I-135	3.7084E-05	1.0560E-14	4.7105E+10	3.6208E+08
Xe-133	9.0987E-04	4.8609E-12	2.2010E+13	8.8316E+09
Xe-135	3.7532E-04	1.4697E-13	6.5561E+11	3.6407E+09
Cs-134	8.8179E-08	6.8154E-14	3.0629E+11	8.5580E+05
Cs-136	2.6361E-08	3.5968E-16	1.5927E+09	2.5588E+05
Cs-137	7.0959E-08	8.1579E-13	3.5860E+12	6.8868E+05

CR Transport Group Inventory:

Time (h) = 0.3333	Atmosphere	Sump	
Noble gases (atoms)	1.7665E+14	0.0000E+00	
Elemental I (atoms)	9.0132E+11	0.0000E+00	
Organic I (atoms)	3.1938E+10	0.0000E+00	
Aerosols (kg)	8.8765E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.6007E-15
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2198E-14
Total I (Ci)			1.5866E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9172E+14
Elemental I (atoms)	0.0000E+00	9.7969E+11
Organic I (atoms)	0.0000E+00	3.4715E+10
Aerosols (kg)	0.0000E+00	9.6328E-13

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	1.5049E+13	0.0000E+00
Elemental I (atoms)	7.6882E+10	0.0000E+00
Organic I (atoms)	2.7242E+09	0.0000E+00
Aerosols (kg)	7.5616E-14	0.0000E+00

EAB Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.9493E-05	1.6406E-03	9.1622E-05
Accumulated dose (rem)	5.0032E-05	2.0889E-03	1.1642E-04

LPZ Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	9.9724E-04	4.1427E-02	2.3136E-03
Accumulated dose (rem)	1.2634E-03	5.2748E-02	2.9397E-03

CR Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.1864E-06	5.3906E-03	1.7646E-04
Accumulated dose (rem)	6.0596E-06	6.2803E-03	2.0563E-04

DW Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	6.8009E+04	1.7334E-01	1.2281E+24	2.3096E+18
Kr-85m	1.0375E+06	1.2607E-04	8.9321E+20	3.6171E+19
Kr-87	1.7130E+06	6.0476E-05	4.1862E+20	6.3902E+19
Kr-88	2.7008E+06	2.1539E-04	1.4740E+21	9.5608E+19
Rb-86	6.0304E+02	7.4113E-06	5.1898E+19	1.6215E+17
I-131	2.5229E+05	2.0350E-03	9.3551E+21	6.6630E+19
I-132	3.6181E+05	3.5051E-05	1.5991E+20	9.3943E+19
I-133	5.1719E+05	4.5656E-04	2.0673E+21	1.3762E+20
I-134	4.0377E+05	1.5135E-05	6.8021E+19	1.2989E+20
I-135	4.7159E+05	1.3429E-04	5.9903E+20	1.2772E+20
Xe-133	7.2742E+06	3.8862E-02	1.7596E+23	2.4715E+20
Xe-135	3.0409E+06	1.1908E-03	5.3118E+21	1.0329E+20
Cs-134	6.6019E+04	5.1026E-02	2.2932E+23	1.7745E+19
Cs-136	1.9729E+04	2.6919E-04	1.1920E+21	5.3059E+18
Cs-137	5.3127E+04	6.1078E-01	2.6848E+24	1.4280E+19

DW Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	1.4122E+24	0.0000E+00	
Elemental I (atoms)	5.8262E+20	7.6685E+21	
Organic I (atoms)	2.5457E+20	0.0000E+00	
Aerosols (kg)	6.6457E-01	8.7318E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		8.3482E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.0587E-04
Total I (Ci)			2.0066E+06

DW to RB Transport Group Inventory:

Time (h) = 0.5000	Leakage Transport
Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1654E+20
Elemental I (atoms)	0.0000E+00	3.8790E+17
Organic I (atoms)	0.0000E+00	2.1078E+16
Aerosols (kg)	0.0000E+00	4.4060E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1654E+20
Elemental I (atoms)	0.0000E+00	3.8790E+17
Organic I (atoms)	0.0000E+00	2.1078E+16
Aerosols (kg)	0.0000E+00	4.4060E-04

RB Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	1.0628E+01	2.7088E-05	1.9191E+20	2.4298E+14
Kr-85m	1.6213E+02	1.9701E-08	1.3958E+17	3.7805E+15
Kr-87	2.6769E+02	9.4505E-09	6.5416E+16	6.5659E+15
Kr-88	4.2204E+02	3.3658E-08	2.3033E+17	9.9543E+15
Rb-86	7.5723E-01	9.3063E-09	6.5167E+16	2.4965E+13
I-131	3.1098E+02	2.5084E-06	1.1531E+19	1.0247E+16
I-132	4.0740E+02	3.9468E-08	1.8006E+17	1.3901E+16
I-133	6.3761E+02	5.6286E-07	2.5486E+18	2.1101E+16
I-134	4.9777E+02	1.8660E-08	8.3858E+16	1.8420E+16
I-135	5.8139E+02	1.6555E-07	7.3850E+17	1.9440E+16
Xe-133	1.1370E+03	6.0745E-06	2.7505E+19	2.6003E+16
Xe-135	4.7868E+02	1.8744E-07	8.3615E+17	1.0914E+16
Cs-134	8.2898E+01	6.4072E-05	2.8795E+20	2.7325E+15
Cs-136	2.4774E+01	3.3802E-07	1.4968E+18	8.1686E+14
Cs-137	6.6710E+01	7.6695E-04	3.3713E+21	2.1989E+15

RB Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	2.2069E+20	0.0000E+00	
Elemental I (atoms)	7.3066E+17	0.0000E+00	
Organic I (atoms)	3.9769E+16	0.0000E+00	
Aerosols (kg)	8.3449E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3019E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6479E-08
Total I (Ci)			2.4352E+03

DW to RB Transport Group Inventory:

Time (h) = 0.5000 Leakage Transport

Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

RB toEnvironment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	4.0823E-05	1.0405E-10	7.3719E+14	5.8598E+08
Kr-85m	6.2278E-04	7.5677E-14	5.3616E+11	9.0597E+09
Kr-87	1.0283E-03	3.6301E-14	2.5128E+11	1.5479E+10
Kr-88	1.6212E-03	1.2929E-13	8.8476E+11	2.3767E+10
Rb-86	3.5862E-09	4.4074E-17	3.0863E+08	5.3931E+04
I-131	8.7014E-05	7.0187E-13	3.2265E+12	1.3066E+09
I-132	1.1257E-04	1.0906E-14	4.9755E+10	1.7284E+09
I-133	1.7841E-04	1.5749E-13	7.1312E+11	2.6860E+09
I-134	1.3928E-04	5.2211E-15	2.3464E+10	2.2442E+09
I-135	1.6268E-04	4.6323E-14	2.0664E+11	2.4646E+09
Xe-133	4.3645E-03	2.3317E-11	1.0558E+14	6.2663E+10
Xe-135	1.8042E-03	7.0651E-13	3.1516E+12	2.5888E+10
Cs-134	3.9261E-07	3.0344E-13	1.3637E+12	5.9034E+06
Cs-136	1.1733E-07	1.6009E-15	7.0887E+09	1.7645E+06
Cs-137	3.1594E-07	3.6322E-12	1.5966E+13	4.7506E+06

CR Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	8.4759E+14	0.0000E+00	
Elemental I (atoms)	3.9990E+12	0.0000E+00	
Organic I (atoms)	1.5272E+11	0.0000E+00	
Aerosols (kg)	3.9521E-12	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.2738E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.4081E-14
Total I (Ci)			6.7996E-04

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5700E+14
Elemental I (atoms)	0.0000E+00	4.5513E+12
Organic I (atoms)	0.0000E+00	1.7281E+11
Aerosols (kg)	0.0000E+00	4.4872E-12

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00

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Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   0.5000      Filtered   Transported
Noble gases (atoms)    1.0928E+14  0.0000E+00
Elemental I (atoms)    5.4237E+11  0.0000E+00
Organic I (atoms)      1.9727E+10  0.0000E+00
Aerosols (kg)          5.3499E-13  0.0000E+00

EAB Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7565E-04  1.5340E-02  1.2624E-03
Accumulated dose (rem)  8.2568E-04  1.7429E-02  1.3789E-03

LPZ Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9586E-02  3.8736E-01  3.1878E-02
Accumulated dose (rem)  2.0850E-02  4.4011E-01  3.4818E-02

CR Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0701E-04  4.1943E-02  1.4376E-03
Accumulated dose (rem)  1.1307E-04  4.8223E-02  1.6433E-03

DW Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg          Atoms       Decay
Co-58                  2.1963E+01  6.9069E-07  7.1715E+18  1.3792E+15
Co-60                  2.6297E+01  2.3263E-05  2.3349E+20  1.6512E+15
Kr-85                  4.9869E+05  1.2711E+00  9.0055E+24  2.1469E+19
Kr-85m                 7.0415E+06  8.5564E-04  6.0621E+21  3.1473E+20
Kr-87                  9.5646E+06  3.3767E-04  2.3373E+21  4.7198E+20
Kr-88                  1.7529E+07  1.3979E-03  9.5665E+21  8.0098E+20
Rb-86                  7.5756E+02  9.3104E-06  6.5196E+19  2.1203E+17
Sr-89                  3.7226E+04  1.2813E-03  8.6701E+21  2.3378E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  3.0751E+17
Sr-91                  4.3069E+04  1.1881E-05  7.8626E+19  2.7517E+18
Sr-92                  3.7386E+04  2.9744E-06  1.9470E+19  2.4958E+18
Y-90                   5.2590E+01  9.6662E-08  6.4679E+17  3.2617E+15
Y-91                   4.7268E+02  1.9274E-05  1.2755E+20  2.9677E+16
Y-92                   7.5766E+02  7.8739E-08  5.1541E+17  4.2881E+16
Y-93                   4.9803E+02  1.4928E-07  9.6662E+17  3.1787E+16
Zr-95                  5.7684E+02  2.6851E-05  1.7021E+20  3.6225E+16
Zr-97                  5.3625E+02  2.8051E-07  1.7415E+18  3.4002E+16
Nb-95                  5.7824E+02  1.4788E-05  9.3740E+19  3.6309E+16
Mo-99                  7.3090E+03  1.5239E-05  9.2700E+19  4.6010E+17
Tc-99m                 6.5180E+03  1.2396E-06  7.5403E+18  4.0917E+17
Ru-103                 6.4043E+03  1.9844E-04  1.1602E+21  4.0221E+17
Ru-105                 3.9092E+03  5.8154E-07  3.3354E+18  2.5477E+17
Ru-106                 2.7875E+03  8.3320E-04  4.7337E+21  1.7504E+17
Rh-105                 4.2812E+03  5.0722E-06  2.9091E+19  2.6889E+17
Sb-127                 7.3024E+03  2.7345E-05  1.2966E+20  4.5936E+17
Sb-129                 1.9363E+04  3.4433E-06  1.6075E+19  1.2633E+18
Te-127                 7.2686E+03  2.7542E-06  1.3060E+19  4.5630E+17
Te-127m                1.2473E+03  1.3224E-04  6.2704E+20  7.8323E+16
Te-129                 2.0176E+04  9.6343E-07  4.4976E+18  1.2847E+18
Te-129m                4.1102E+03  1.3644E-04  6.3694E+20  2.5809E+17
Te-131m                1.5109E+04  1.8948E-05  8.7103E+19  9.5394E+17
Te-132                 1.0996E+05  3.6219E-04  1.6524E+21  6.9190E+18
I-131                  4.0160E+05  3.2394E-03  1.4892E+22  9.2575E+19
I-132                  5.7885E+05  5.6078E-05  2.5584E+20  1.3141E+20
I-133                  8.1089E+05  7.1582E-04  3.2412E+21  1.9039E+20
I-134                  4.3350E+05  1.6250E-05  7.3030E+19  1.6406E+20
I-135                  7.1342E+05  2.0315E-04  9.0620E+20  1.7498E+20
Xe-133                 5.3281E+07  2.8465E-01  1.2889E+24  2.2952E+21
Xe-135                 2.2407E+07  8.7742E-03  3.9140E+22  9.6498E+20
Cs-134                 8.2998E+04  6.4149E-02  2.8829E+23  2.3208E+19
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Cs-136	2.4777E+04	3.3806E-04	1.4969E+21	6.9376E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	1.8676E+19
Ba-139	3.5806E+04	2.1890E-06	9.4838E+18	2.5389E+18
Ba-140	5.7350E+04	7.8337E-04	3.3697E+21	3.6031E+18
La-140	6.3959E+02	1.1507E-06	4.9498E+18	3.9410E+16
La-141	4.5294E+02	8.0091E-08	3.4207E+17	2.9664E+16
La-142	3.3732E+02	2.3564E-08	9.9933E+16	2.3607E+16
Ce-141	1.3564E+03	4.7604E-05	2.0332E+20	8.5175E+16
Ce-143	1.2833E+03	1.9324E-06	8.1380E+18	8.0984E+16
Ce-144	1.0891E+03	3.4147E-04	1.4281E+21	6.8391E+16
Pr-143	5.0935E+02	7.5641E-06	3.1854E+19	3.1982E+16
Nd-147	2.1212E+02	2.6220E-06	1.0742E+19	1.3328E+16
Np-239	1.5245E+04	6.5714E-05	1.6558E+20	9.6008E+17
Pu-238	4.3973E+00	2.5685E-04	6.4992E+20	2.7612E+14
Pu-239	3.8516E-01	6.1967E-03	1.5614E+22	2.4185E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	4.5297E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	9.7632E+15
Am-241	1.0417E-01	3.0350E-05	7.5838E+19	6.5407E+12
Cm-242	2.6436E+01	7.9764E-06	1.9849E+19	1.6601E+15
Cm-244	1.7474E+00	2.1599E-05	5.3307E+19	1.0972E+14

DW Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.0351E+25	0.0000E+00	
Elemental I (atoms)	9.0808E+20	2.1014E+22	
Organic I (atoms)	6.7270E+20	0.0000E+00	
Aerosols (kg)	8.8772E-01	2.1825E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3210E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6621E-04
Total I (Ci)			2.9383E+06

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	6.4058E-03	2.0145E-10	2.0917E+15	2.0440E+11
Co-60	7.6699E-03	6.7852E-09	6.8102E+16	2.4472E+11
Kr-85	9.9182E+01	2.5280E-04	1.7911E+21	3.2119E+15
Kr-85m	1.4004E+03	1.7017E-07	1.2057E+18	4.6801E+16
Kr-87	1.9023E+03	6.7157E-08	4.6486E+17	6.9051E+16
Kr-88	3.4862E+03	2.7803E-07	1.9026E+18	1.1868E+17
Rb-86	9.9015E-01	1.2169E-08	8.5212E+16	8.3217E+13
Sr-89	1.0857E+01	3.7372E-07	2.5288E+18	3.4646E+14
Sr-90	1.4284E+00	1.0471E-05	7.0067E+19	4.5575E+13
Sr-91	1.2562E+01	3.4653E-09	2.2933E+16	4.0549E+14
Sr-92	1.0904E+01	8.6753E-10	5.6787E+15	3.6249E+14
Y-90	1.8883E-02	3.4707E-11	2.3223E+14	5.5968E+11

Y-91	1.3847E-01	5.6465E-09	3.7367E+16	4.4113E+12
Y-92	7.1730E-01	7.4546E-11	4.8796E+14	1.7291E+13
Y-93	1.4526E-01	4.3539E-11	2.8193E+14	4.6857E+12
Zr-95	1.6824E-01	7.8316E-09	4.9645E+16	5.3686E+12
Zr-97	1.5641E-01	8.1817E-11	5.0795E+14	5.0231E+12
Nb-95	1.6865E-01	4.3131E-09	2.7341E+16	5.3812E+12
Mo-99	2.1318E+00	4.4448E-09	2.7038E+16	6.8133E+13
Tc-99m	1.9011E+00	3.6154E-10	2.1993E+15	6.0636E+13
Ru-103	1.8679E+00	5.7877E-08	3.3839E+17	5.9607E+13
Ru-105	1.1402E+00	1.6962E-10	9.7282E+14	3.7298E+13
Ru-106	8.1304E-01	2.4302E-07	1.3807E+18	2.5942E+13
Rh-105	1.2487E+00	1.4794E-09	8.4849E+15	3.9847E+13
Sb-127	2.1299E+00	7.9755E-09	3.7819E+16	6.8039E+13
Sb-129	5.6476E+00	1.0043E-09	4.6884E+15	1.8488E+14
Te-127	2.1200E+00	8.0331E-10	3.8092E+15	6.7624E+13
Te-127m	3.6381E-01	3.8569E-08	1.8289E+17	1.1608E+13
Te-129	5.8848E+00	2.8100E-10	1.3118E+15	1.8941E+14
Te-129m	1.1988E+00	3.9795E-08	1.8577E+17	3.8250E+13
Te-131m	4.4068E+00	5.5264E-09	2.5405E+16	1.4112E+14
Te-132	3.2071E+01	1.0564E-07	4.8194E+17	1.0247E+15
I-131	4.3161E+02	3.4815E-06	1.6004E+19	3.4959E+16
I-132	5.1533E+02	4.9925E-08	2.2777E+17	4.4666E+16
I-133	8.7180E+02	7.6959E-07	3.4846E+18	7.1369E+16
I-134	4.6606E+02	1.7471E-08	7.8515E+16	5.0764E+16
I-135	7.6700E+02	2.1840E-07	9.7426E+17	6.4424E+16
Xe-133	1.0592E+04	5.6588E-05	2.5622E+20	3.4327E+17
Xe-135	4.4075E+03	1.7259E-06	7.6990E+18	1.4348E+17
Cs-134	1.0848E+02	8.3844E-05	3.7681E+20	9.1123E+15
Cs-136	3.2384E+01	4.4185E-07	1.9565E+18	2.7223E+15
Cs-137	8.7298E+01	1.0036E-03	4.4117E+21	7.3329E+15
Ba-139	1.0443E+01	6.3846E-10	2.7661E+15	3.6149E+14
Ba-140	1.6727E+01	2.2848E-07	9.8283E+17	5.3390E+14
La-140	2.5245E-01	4.5419E-10	1.9537E+15	7.2597E+12
La-141	1.3211E-01	2.3360E-11	9.9771E+13	4.3357E+12
La-142	9.8385E-02	6.8728E-12	2.9147E+13	3.3757E+12
Ce-141	3.9557E-01	1.3883E-08	5.9294E+16	1.2622E+13
Ce-143	3.7430E-01	5.6363E-10	2.3736E+15	1.1983E+13
Ce-144	3.1766E-01	9.9597E-08	4.1652E+17	1.0136E+13
Pr-143	1.4867E-01	2.2078E-09	9.2979E+15	4.7423E+12
Nd-147	6.1867E-02	7.6475E-10	3.1330E+15	1.9748E+12
Np-239	4.4465E+00	1.9167E-08	4.8295E+16	1.4215E+14
Pu-238	1.2825E-03	7.4916E-08	1.8956E+17	4.0922E+10
Pu-239	1.1234E-04	1.8074E-06	4.5541E+18	3.5844E+09
Pu-240	2.1040E-04	9.2335E-07	2.3169E+18	6.7133E+09
Pu-241	4.5349E-02	4.4023E-07	1.1000E+18	1.4470E+12
Am-241	3.0383E-05	8.8524E-09	2.2120E+16	9.6939E+08
Cm-242	7.7105E-03	2.3264E-09	5.7893E+15	2.4603E+11
Cm-244	5.0965E-04	6.2996E-09	1.5548E+16	1.6262E+10

RB Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	2.0585E+21	0.0000E+00	
Elemental I (atoms)	9.9991E+17	0.0000E+00	
Organic I (atoms)	1.8384E+17	0.0000E+00	
Aerosols (kg)	1.1072E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7954E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2499E-08
Total I (Ci)			3.0518E+03

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00

Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	6.7989E-12	2.1381E-19	2.2200E+06	1.1465E+02
Co-60	8.1405E-12	7.2015E-18	7.2281E+07	1.3726E+02
Kr-85	5.2478E-04	1.3376E-09	9.4765E+15	1.3639E+10
Kr-85m	7.4098E-03	9.0039E-13	6.3792E+12	1.9782E+11
Kr-87	1.0065E-02	3.5533E-13	2.4596E+12	2.8821E+11
Kr-88	1.8446E-02	1.4710E-12	1.0067E+13	5.0024E+11
Rb-86	7.3910E-09	9.0835E-17	6.3607E+08	3.9728E+05
Sr-89	1.1524E-08	3.9666E-16	2.6839E+09	1.9432E+05
Sr-90	1.5160E-09	1.1114E-14	7.4366E+10	2.5563E+04
Sr-91	1.3333E-08	3.6780E-18	2.4340E+07	2.2642E+05
Sr-92	1.1573E-08	9.2077E-19	6.0272E+06	2.0013E+05
Y-90	2.1872E-11	4.0201E-20	2.6900E+05	3.4726E+02
Y-91	1.4729E-10	6.0058E-18	3.9745E+07	2.4799E+03
Y-92	1.0193E-09	1.0593E-19	6.9341E+05	1.4401E+04
Y-93	1.5417E-10	4.6211E-20	2.9923E+05	2.6172E+03
Zr-95	1.7857E-10	8.3121E-18	5.2691E+07	3.0111E+03
Zr-97	1.6600E-10	8.6837E-20	5.3912E+05	2.8104E+03
Nb-95	1.7900E-10	4.5777E-18	2.9018E+07	3.0183E+03
Mo-99	2.2626E-09	4.7175E-18	2.8697E+07	3.8191E+04
Tc-99m	2.0177E-09	3.8373E-19	2.3342E+06	3.4008E+04
Ru-103	1.9825E-09	6.1428E-17	3.5916E+08	3.3432E+04
Ru-105	1.2101E-09	1.8003E-19	1.0325E+06	2.0720E+04
Ru-106	8.6293E-10	2.5793E-16	1.4654E+09	1.4551E+04
Rh-105	1.3253E-09	1.5702E-18	9.0056E+06	2.2348E+04
Sb-127	2.2606E-09	8.4649E-18	4.0139E+07	3.8145E+04
Sb-129	5.9942E-09	1.0659E-18	4.9761E+06	1.0268E+05
Te-127	2.2501E-09	8.5260E-19	4.0429E+06	3.7929E+04
Te-127m	3.8613E-10	4.0936E-17	1.9411E+08	6.5108E+03
Te-129	6.2459E-09	2.9824E-19	1.3923E+06	1.0579E+05
Te-129m	1.2724E-09	4.2236E-17	1.9717E+08	2.1455E+04
Te-131m	4.6772E-09	5.8655E-18	2.6964E+07	7.9044E+04
Te-132	3.4039E-08	1.1212E-16	5.1152E+08	5.7445E+05
I-131	1.8566E-04	1.4975E-12	6.8843E+12	9.7572E+09
I-132	2.0986E-04	2.0331E-14	9.2756E+10	1.1849E+10
I-133	3.7504E-04	3.3107E-13	1.4991E+12	1.9868E+10
I-134	2.0049E-04	7.5157E-15	3.3777E+10	1.3141E+10
I-135	3.2996E-04	9.3955E-14	4.1912E+11	1.7819E+10
Xe-133	5.6006E-02	2.9921E-10	1.3548E+15	1.4565E+12
Xe-135	2.2922E-02	8.9760E-12	4.0040E+13	5.9849E+11
Cs-134	8.0976E-07	6.2586E-13	2.8127E+12	4.3508E+07
Cs-136	2.4173E-07	3.2982E-15	1.4605E+10	1.2996E+07
Cs-137	6.5164E-07	7.4917E-12	3.2931E+13	3.5012E+07
Ba-139	1.1084E-08	6.7764E-19	2.9359E+06	1.9647E+05
Ba-140	1.7753E-08	2.4250E-16	1.0431E+09	2.9942E+05
La-140	3.0197E-10	5.4328E-19	2.3370E+06	4.6918E+03
La-141	1.4022E-10	2.4793E-20	1.0589E+05	2.4056E+03
La-142	1.0442E-10	7.2945E-21	3.0936E+04	1.8410E+03
Ce-141	4.1982E-10	1.4734E-17	6.2929E+07	7.0793E+03
Ce-143	3.9726E-10	5.9821E-19	2.5193E+06	6.7124E+03
Ce-144	3.3716E-10	1.0571E-16	4.4208E+08	5.6851E+03
Pr-143	1.5785E-10	2.3442E-18	9.8720E+06	2.6610E+03
Nd-147	6.5664E-11	8.1168E-19	3.3252E+06	1.1075E+03
Np-239	4.7194E-09	2.0343E-17	5.1258E+07	7.9673E+04
Pu-238	1.3612E-12	7.9513E-17	2.0119E+08	2.2953E+01
Pu-239	1.1923E-13	1.9183E-15	4.8335E+09	2.0105E+00
Pu-240	2.2331E-13	9.8001E-16	2.4591E+09	3.7654E+00
Pu-241	4.8132E-11	4.6724E-16	1.1675E+09	8.1159E+02
Am-241	3.2248E-14	9.3957E-18	2.3478E+07	5.4374E-01
Cm-242	8.1836E-12	2.4692E-18	6.1446E+06	1.3799E+02
Cm-244	5.4093E-13	6.6861E-18	1.6502E+07	9.1210E+00

CR Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump
Noble gases (atoms)	1.0890E+16	0.0000E+00
Elemental I (atoms)	8.2312E+12	0.0000E+00

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Organic I (atoms)      5.5828E+11  0.0000E+00
Aerosols (kg)          8.1673E-12  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         9.0590E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.1341E-13
Total I (Ci)                                   1.3010E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.5192E+15
Elemental I (atoms)    0.0000E+00  1.0629E+13
Organic I (atoms)      0.0000E+00  6.5944E+11
Aerosols (kg)          0.0000E+00  1.0478E-11

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.0150E+15
Elemental I (atoms)    1.3266E+13  4.1028E+11
Organic I (atoms)      1.0621E+12  3.2848E+10
Aerosols (kg)          1.3075E-11  4.0439E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    1.6410E+15  0.0000E+00
Elemental I (atoms)    2.7405E+12  0.0000E+00
Organic I (atoms)      1.3071E+11  0.0000E+00
Aerosols (kg)          2.7150E-12  0.0000E+00

EAB Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.5584E-03  3.5186E-02  5.6741E-03
Accumulated dose (rem)  5.3841E-03  5.2615E-02  7.0530E-03

LPZ Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1511E-01  8.8849E-01  1.4328E-01
Accumulated dose (rem)  1.3596E-01  1.3286E+00  1.7810E-01

CR Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.3498E-04  9.5724E-02  3.8682E-03
Accumulated dose (rem)  9.4805E-04  1.4395E-01  5.5115E-03

DW Compartment Nuclide Inventory:

Time (h) =   1.5000       Ci           kg         Atoms      Decay
Co-58                  2.1958E+01  6.9055E-07  7.1700E+18  2.8418E+15
Co-60                  2.6296E+01  2.3263E-05  2.3349E+20  3.4026E+15
Kr-85                  9.2911E+05  2.3681E+00  1.6778E+25  7.1883E+19
Kr-85m                 1.2142E+07  1.4754E-03  1.0453E+22  9.9731E+20
Kr-87                  1.3569E+07  4.7902E-04  3.3158E+21  1.3078E+21
Kr-88                  2.8906E+07  2.3052E-03  1.5776E+22  2.4599E+21
Rb-86                  7.5697E+02  9.3032E-06  6.5145E+19  2.6247E+17
Sr-89                  3.7215E+04  1.2810E-03  8.6676E+21  4.8167E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  6.3367E+17
Sr-91                  4.1526E+04  1.1455E-05  7.5809E+19  5.5684E+18
Sr-92                  3.2898E+04  2.6173E-06  1.7132E+19  4.8331E+18
Y-90                   5.6082E+01  1.0308E-07  6.8974E+17  6.6431E+15
Y-91                   4.7317E+02  1.9294E-05  1.2768E+20  6.1135E+16
Y-92                   1.1457E+03  1.1907E-07  7.7940E+17  7.6140E+16
Y-93                   4.8123E+02  1.4424E-07  9.3402E+17  6.4393E+16
Zr-95                  5.7671E+02  2.6845E-05  1.7017E+20  7.4638E+16
Zr-97                  5.2537E+02  2.7482E-07  1.7062E+18  6.9353E+16
Nb-95                  5.7824E+02  1.4787E-05  9.3739E+19  7.4819E+16
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Mo-99	7.2707E+03	1.5159E-05	9.2214E+19	9.4560E+17
Tc-99m	6.5143E+03	1.2389E-06	7.5360E+18	8.4069E+17
Ru-103	6.4019E+03	1.9836E-04	1.1598E+21	8.2866E+17
Ru-105	3.6156E+03	5.3788E-07	3.0849E+18	5.0522E+17
Ru-106	2.7874E+03	8.3317E-04	4.7335E+21	3.6069E+17
Rh-105	4.2762E+03	5.0662E-06	2.9057E+19	5.5362E+17
Sb-127	7.2751E+03	2.7242E-05	1.2918E+20	9.4479E+17
Sb-129	1.7871E+04	3.1779E-06	1.4835E+19	2.5025E+18
Te-127	7.2671E+03	2.7536E-06	1.3057E+19	9.3857E+17
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	1.6139E+17
Te-129	1.9481E+04	9.3022E-07	4.3426E+18	2.5719E+18
Te-129m	4.1102E+03	1.3644E-04	6.3694E+20	5.3182E+17
Te-131m	1.4935E+04	1.8730E-05	8.6102E+19	1.9544E+18
Te-132	1.0947E+05	3.6058E-04	1.6451E+21	1.4226E+19
I-131	4.0967E+05	3.3045E-03	1.5191E+22	1.1965E+20
I-132	5.8016E+05	5.6206E-05	2.5642E+20	1.7014E+20
I-133	8.1478E+05	7.1925E-04	3.2567E+21	2.4465E+20
I-134	2.9827E+05	1.1181E-05	5.0248E+19	1.8820E+20
I-135	6.9164E+05	1.9695E-04	8.7854E+20	2.2187E+20
Xe-133	9.9114E+07	5.2951E-01	2.3976E+24	7.6776E+21
Xe-135	4.1427E+07	1.6222E-02	7.2365E+22	3.2270E+21
Cs-134	8.2996E+04	6.4148E-02	2.8829E+23	2.8736E+19
Cs-136	2.4749E+04	3.3769E-04	1.4953E+21	8.5868E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	2.3124E+19
Ba-139	2.7845E+04	1.7023E-06	7.3754E+18	4.6473E+18
Ba-140	5.7285E+04	7.8248E-04	3.3659E+21	7.4204E+18
La-140	7.0439E+02	1.2673E-06	5.4513E+18	7.9751E+16
La-141	4.1471E+02	7.3331E-08	3.1320E+17	5.8538E+16
La-142	2.6941E+02	1.8820E-08	7.9814E+16	4.3726E+16
Ce-141	1.3562E+03	4.7598E-05	2.0329E+20	1.7550E+17
Ce-143	1.2699E+03	1.9123E-06	8.0530E+18	1.6600E+17
Ce-144	1.0891E+03	3.4146E-04	1.4280E+21	1.4093E+17
Pr-143	5.0946E+02	7.5657E-06	3.1861E+19	6.5898E+16
Nd-147	2.1184E+02	2.6186E-06	1.0727E+19	2.7445E+16
Np-239	1.5152E+04	6.5313E-05	1.6457E+20	1.9723E+18
Pu-238	4.3973E+00	2.5686E-04	6.4992E+20	5.6897E+14
Pu-239	3.8519E-01	6.1971E-03	1.5615E+22	4.9838E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	9.3340E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	2.0118E+16
Am-241	1.0417E-01	3.0352E-05	7.5843E+19	1.3478E+13
Cm-242	2.6434E+01	7.9757E-06	1.9847E+19	3.4206E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	2.2610E+14

DW Transport Group Inventory:

Time (h) = 1.5000	Atmosphere	Sump	
Noble gases (atoms)	1.9277E+25	0.0000E+00	
Elemental I (atoms)	9.0098E+20	3.4595E+22	
Organic I (atoms)	1.0836E+21	0.0000E+00	
Aerosols (kg)	8.8768E-01	3.5140E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3398E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6739E-04
Total I (Ci)			2.7945E+06

DW to RB Transport Group Inventory:

Time (h) = 1.5000 Leakage Transport

Noble gases (atoms)	6.6893E+21
Elemental I (atoms)	1.2956E+18
Organic I (atoms)	4.5988E+17
Aerosols (kg)	1.3847E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5320E+21
Elemental I (atoms)	0.0000E+00	6.8409E+17
Organic I (atoms)	0.0000E+00	2.4282E+17
Aerosols (kg)	0.0000E+00	7.3110E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 1.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5320E+21
Elemental I (atoms)	0.0000E+00	6.8409E+17
Organic I (atoms)	0.0000E+00	2.4282E+17
Aerosols (kg)	0.0000E+00	7.3110E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.5000	Ci	kg	Atoms	Decay
Co-58	1.3266E-02	4.1721E-10	4.3319E+15	9.0521E+11
Co-60	1.5887E-02	1.4055E-08	1.4107E+17	1.0839E+12
Kr-85	3.2228E+02	8.2145E-04	5.8199E+21	1.8016E+16
Kr-85m	4.2118E+03	5.1179E-07	3.6260E+18	2.4663E+17
Kr-87	4.7066E+03	1.6616E-07	1.1502E+18	3.1183E+17
Kr-88	1.0027E+04	7.9963E-07	5.4721E+18	6.0346E+17
Rb-86	1.2259E+00	1.5067E-08	1.0550E+17	1.5859E+14
Sr-89	2.2484E+01	7.7392E-07	5.2367E+18	1.5342E+15
Sr-90	2.9588E+00	2.1691E-05	1.4514E+20	2.0186E+14
Sr-91	2.5089E+01	6.9210E-09	4.5801E+16	1.7526E+15
Sr-92	1.9876E+01	1.5813E-09	1.0351E+16	1.4750E+15
Y-90	4.7686E-02	8.7648E-11	5.8648E+14	2.7550E+12
Y-91	2.8819E-01	1.1751E-08	7.7768E+16	1.9582E+13
Y-92	2.4287E+00	2.5240E-10	1.6521E+15	1.0861E+14
Y-93	2.9075E-01	8.7146E-11	5.6430E+14	2.0282E+13
Zr-95	3.4843E-01	1.6219E-08	1.0281E+17	2.3775E+13
Zr-97	3.1741E-01	1.6604E-10	1.0308E+15	2.1944E+13
Nb-95	3.4935E-01	8.9341E-09	5.6634E+16	2.3834E+13
Mo-99	4.3927E+00	9.1589E-09	5.5713E+16	3.0071E+14
Tc-99m	3.9357E+00	7.4848E-10	4.5530E+15	2.6740E+14
Ru-103	3.8678E+00	1.1984E-07	7.0070E+17	2.6394E+14
Ru-105	2.1844E+00	3.2497E-10	1.8638E+15	1.5682E+14
Ru-106	1.6841E+00	5.0338E-07	2.8598E+18	1.1490E+14
Rh-105	2.5835E+00	3.0609E-09	1.7555E+16	1.7627E+14
Sb-127	4.3954E+00	1.6459E-08	7.8045E+16	3.0060E+14
Sb-129	1.0797E+01	1.9200E-09	8.9631E+15	7.7619E+14
Te-127	4.3905E+00	1.6636E-09	7.8887E+15	2.9871E+14
Te-127m	7.5360E-01	7.9893E-08	3.7884E+17	5.1413E+13
Te-129	1.1770E+01	5.6201E-10	2.6236E+15	8.0507E+14
Te-129m	2.4833E+00	8.2431E-08	3.8482E+17	1.6941E+14
Te-131m	9.0235E+00	1.1316E-08	5.2020E+16	6.2022E+14
Te-132	6.6139E+01	2.1785E-07	9.9390E+17	4.5252E+15
I-131	5.5750E+02	4.4969E-06	2.0672E+19	6.8728E+16
I-132	6.1814E+02	5.9884E-08	2.7321E+17	8.3616E+16
I-133	1.1093E+03	9.7926E-07	4.4340E+18	1.3905E+17
I-134	4.0609E+02	1.5223E-08	6.8413E+16	8.0672E+16
I-135	9.4167E+02	2.6814E-07	1.1961E+18	1.2288E+17
Xe-133	3.4352E+04	1.8352E-04	8.3098E+20	1.9226E+18
Xe-135	1.4083E+04	5.5146E-06	2.4600E+19	7.9601E+17
Cs-134	1.3441E+02	1.0389E-04	4.6689E+20	1.7373E+16
Cs-136	4.0082E+01	5.4689E-07	2.4216E+18	5.1871E+15
Cs-137	1.0817E+02	1.2436E-03	5.4665E+21	1.3981E+16
Ba-139	1.6823E+01	1.0285E-09	4.4560E+15	1.3586E+15
Ba-140	3.4610E+01	4.7275E-07	2.0336E+18	2.3629E+15
La-140	6.8180E-01	1.2266E-09	5.2764E+15	3.7272E+13
La-141	2.5056E-01	4.4304E-11	1.8922E+14	1.8108E+13
La-142	1.6277E-01	1.1370E-11	4.8221E+13	1.2903E+13
Ce-141	8.1924E-01	2.8752E-08	1.2280E+17	5.5899E+13
Ce-143	7.6723E-01	1.1553E-09	4.8654E+15	5.2699E+13
Ce-144	6.5798E-01	2.0630E-07	8.6274E+17	4.4892E+13
Pr-143	3.0823E-01	4.5773E-09	1.9277E+16	2.1012E+13
Nd-147	1.2799E-01	1.5820E-09	6.4812E+15	8.7391E+12
Np-239	9.1543E+00	3.9460E-08	9.9428E+16	6.2702E+14
Pu-238	2.6567E-03	1.5518E-07	3.9266E+17	1.8125E+11
Pu-239	2.3272E-04	3.7441E-06	9.4341E+18	1.5876E+10
Pu-240	4.3583E-04	1.9126E-06	4.7993E+18	2.9734E+10
Pu-241	9.3937E-02	9.1190E-07	2.2787E+18	6.4088E+12
Am-241	6.2942E-05	1.8339E-08	4.5825E+16	4.2938E+09
Cm-242	1.5970E-02	4.8186E-09	1.1991E+16	1.0896E+12
Cm-244	1.0557E-03	1.3049E-08	3.2206E+16	7.2025E+10

RB Transport Group Inventory:

```
Time (h) =   1.5000    Atmosphere     Sump
Noble gases (atoms)    6.6857E+21  0.0000E+00
Elemental I (atoms)    1.2720E+18  0.0000E+00
Organic I (atoms)      4.5559E+17  0.0000E+00
Aerosols (kg)          1.3846E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.3051E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.8656E-08
Total I (Ci)                                   3.6327E+03

DW to  RB Transport Group Inventory:
Time (h) =   1.5000  Leakage Transport

Noble gases (atoms)      6.6893E+21
Elemental I (atoms)      1.2956E+18
Organic I (atoms)        4.5988E+17
Aerosols (kg)            1.3847E-03

RB toEnvironment Transport Group Inventory:

                        Pathway
Time (h) =   1.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   1.5000       Ci           kg         Atoms      Decay
Co-58                  5.1723E-11  1.6266E-18  1.6889E+07  2.0839E+03
Co-60                  6.1942E-11  5.4797E-17  5.4999E+08  2.4954E+03
Kr-85                  3.6991E-03  9.4283E-09  6.6799E+16  1.5112E+11
Kr-85m                 4.8342E-02  5.8742E-12  4.1618E+13  2.0458E+12
Kr-87                  5.4021E-02  1.9071E-12  1.3201E+13  2.5097E+12
Kr-88                  1.1508E-01  9.1779E-12  6.2807E+13  4.9727E+12
Rb-86                  1.5129E-08  1.8593E-16  1.3020E+09  1.1805E+06
Sr-89                  8.7661E-08  3.0174E-15  2.0417E+10  3.5319E+06
Sr-90                  1.1536E-08  8.4568E-14  5.6586E+11  4.6472E+05
Sr-91                  9.7815E-08  2.6984E-17  1.7857E+08  4.0003E+06
Sr-92                  7.7493E-08  6.1652E-18  4.0356E+07  3.2930E+06
Y-90                   2.1192E-10  3.8952E-19  2.6064E+06  7.4840E+03
Y-91                   1.1280E-09  4.5997E-17  3.0440E+08  4.5273E+04
Y-92                   1.2770E-08  1.3271E-18  8.6871E+06  3.9621E+05
Y-93                   1.1336E-09  3.3976E-19  2.2001E+06  4.6317E+04
Zr-95                  1.3584E-09  6.3234E-17  4.0085E+08  5.4731E+04
Zr-97                  1.2375E-09  6.4735E-19  4.0190E+06  5.0277E+04
Nb-95                  1.3621E-09  3.4832E-17  2.2081E+08  5.4869E+04
Mo-99                  1.7126E-08  3.5709E-17  2.1721E+08  6.9143E+05
Tc-99m                 1.5345E-08  2.9182E-18  1.7751E+07  6.1498E+05
Ru-103                 1.5080E-08  4.6725E-16  2.7319E+09  6.0759E+05
Ru-105                 8.5167E-09  1.2670E-18  7.2666E+06  3.5439E+05
Ru-106                 6.5659E-09  1.9626E-15  1.1150E+10  2.6451E+05
Rh-105                 1.0073E-08  1.1934E-17  6.8444E+07  4.0567E+05
Sb-127                 1.7137E-08  6.4170E-17  3.0428E+08  6.9142E+05
Sb-129                 4.2095E-08  7.4856E-18  3.4945E+07  1.7532E+06
Te-127                 1.7118E-08  6.4862E-18  3.0757E+07  6.8725E+05
Te-127m                2.9381E-09  3.1149E-16  1.4770E+09  1.1836E+05
Te-129                 4.5888E-08  2.1912E-18  1.0229E+07  1.8308E+06
Te-129m                9.6818E-09  3.2138E-16  1.5003E+09  3.9002E+05
Te-131m                3.5181E-08  4.4119E-17  2.0282E+08  1.4240E+06
Te-132                 2.5786E-07  8.4937E-16  3.8750E+09  1.0407E+07
I-131                  4.1381E-04  3.3378E-12  1.5344E+13  3.0523E+10
I-132                  4.1611E-04  4.0313E-14  1.8392E+11  3.3888E+10
I-133                  8.2353E-04  7.2698E-13  3.2917E+12  6.1465E+10
I-134                  3.0148E-04  1.1301E-14  5.0788E+10  3.1230E+10
I-135                  6.9908E-04  1.9906E-13  8.8799E+11  5.3691E+10
Xe-133                 3.9397E-01  2.1048E-09  9.5302E+15  1.6111E+13
Xe-135                 1.5842E-01  6.2033E-11  2.7672E+14  6.5412E+12
Cs-134                 1.6588E-06  1.2820E-12  5.7617E+12  1.2935E+08
Cs-136                 4.9464E-07  6.7490E-15  2.9885E+10  3.8606E+07
Cs-137                 1.3349E-06  1.5347E-11  6.7460E+13  1.0409E+08
Ba-139                 6.5590E-08  4.0099E-18  1.7373E+07  2.9396E+06
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Ba-140	1.3494E-07	1.8432E-15	7.9284E+09	5.4385E+06
La-140	3.1406E-09	5.6503E-18	2.4305E+07	1.0699E+05
La-141	9.7686E-10	1.7273E-19	7.3774E+05	4.0821E+04
La-142	6.3460E-10	4.4331E-20	1.8800E+05	2.8112E+04
Ce-141	3.1937E-09	1.1209E-16	4.7873E+08	1.2867E+05
Ce-143	2.9913E-09	4.5044E-18	1.8969E+07	1.2103E+05
Ce-144	2.5653E-09	8.0431E-16	3.3637E+09	1.0335E+05
Pr-143	1.2026E-09	1.7858E-17	7.5206E+07	4.8408E+04
Nd-147	4.9899E-10	6.1681E-18	2.5269E+07	2.0113E+04
Np-239	3.5691E-08	1.5385E-16	3.8765E+08	1.4415E+06
Pu-238	1.0358E-11	6.0503E-16	1.5309E+09	4.1727E+02
Pu-239	9.0733E-13	1.4597E-14	3.6781E+10	3.6551E+01
Pu-240	1.6992E-12	7.4570E-15	1.8711E+10	6.8453E+01
Pu-241	3.6624E-10	3.5553E-15	8.8840E+09	1.4754E+04
Am-241	2.4541E-13	7.1502E-17	1.7867E+08	9.8857E+00
Cm-242	6.2265E-11	1.8787E-17	4.6751E+07	2.5085E+03
Cm-244	4.1160E-12	5.0876E-17	1.2557E+08	1.6581E+02

CR Transport Group Inventory:

Time (h) = 1.5000	Atmosphere	Sump	
Noble gases (atoms)	7.6723E+16	0.0000E+00	
Elemental I (atoms)	1.7070E+13	0.0000E+00	
Organic I (atoms)	2.3996E+12	0.0000E+00	
Aerosols (kg)	1.6820E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.0067E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.4903E-13
Total I (Ci)			2.6540E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.9052E+16
Elemental I (atoms)	0.0000E+00	2.3479E+13
Organic I (atoms)	0.0000E+00	2.8690E+12
Aerosols (kg)	0.0000E+00	2.2985E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.3215E+16
Elemental I (atoms)	4.1310E+13	1.2776E+12
Organic I (atoms)	5.8844E+12	1.8199E+11
Aerosols (kg)	4.0372E-11	1.2486E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	1.5516E+16	0.0000E+00
Elemental I (atoms)	7.4965E+12	0.0000E+00
Organic I (atoms)	6.3432E+11	0.0000E+00
Aerosols (kg)	7.4128E-12	0.0000E+00

EAB Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3731E-02	6.1618E-02	1.5683E-02
Accumulated dose (rem)	1.9115E-02	1.1423E-01	2.2736E-02

LPZ Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.4673E-01	1.5559E+00	3.9601E-01
Accumulated dose (rem)	4.8269E-01	2.8845E+00	5.7411E-01

CR Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.3662E-03	1.9344E-01	9.4896E-03
Accumulated dose (rem)	4.3143E-03	3.3739E-01	1.5001E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.1954E+01	6.9041E-07	7.1686E+18	4.3041E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	5.1539E+15
Kr-85	1.3592E+06	3.4645E+00	2.4546E+25	1.5095E+20
Kr-85m	1.6441E+07	1.9978E-03	1.4154E+22	1.9894E+21
Kr-87	1.5115E+07	5.3361E-04	3.6937E+21	2.3106E+21
Kr-88	3.7430E+07	2.9850E-03	2.0428E+22	4.7675E+21
Rb-86	7.5639E+02	9.2960E-06	6.5095E+19	3.1286E+17
Sr-89	3.7204E+04	1.2806E-03	8.6651E+21	7.2949E+18
Sr-90	4.8972E+03	3.5902E-02	2.4023E+23	9.5983E+17
Sr-91	4.0038E+04	1.1045E-05	7.3093E+19	8.2842E+18
Sr-92	2.8949E+04	2.3031E-06	1.5076E+19	6.8898E+18
Y-90	5.6074E+01	1.0306E-07	6.8963E+17	1.0026E+16
Y-91	4.7306E+02	1.9290E-05	1.2766E+20	9.2588E+16
Y-92	1.0497E+03	1.0909E-07	7.1409E+17	1.0861E+17
Y-93	4.6500E+02	1.3938E-07	9.0251E+17	9.5900E+16
Zr-95	5.7658E+02	2.6839E-05	1.7013E+20	1.1304E+17
Zr-97	5.1470E+02	2.6924E-07	1.6716E+18	1.0399E+17
Nb-95	5.7823E+02	1.4787E-05	9.3739E+19	1.1333E+17
Mo-99	7.2326E+03	1.5080E-05	9.1732E+19	1.4286E+18
Tc-99m	6.5089E+03	1.2378E-06	7.5298E+18	1.2719E+18
Ru-103	6.3996E+03	1.9829E-04	1.1593E+21	1.2550E+18
Ru-105	3.3441E+03	4.9749E-07	2.8533E+18	7.3686E+17
Ru-106	2.7873E+03	8.3314E-04	4.7333E+21	5.4633E+17
Rh-105	4.2684E+03	5.0571E-06	2.9004E+19	8.3794E+17
Sb-127	7.2478E+03	2.7140E-05	1.2869E+20	1.4284E+18
Sb-129	1.6493E+04	2.9329E-06	1.3692E+19	3.6462E+18
Te-127	7.2647E+03	2.7527E-06	1.3053E+19	1.4207E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.4447E+17
Te-129	1.8672E+04	8.9158E-07	4.1622E+18	3.8108E+18
Te-129m	4.1101E+03	1.3643E-04	6.3691E+20	8.0555E+17
Te-131m	1.4764E+04	1.8515E-05	8.5114E+19	2.9434E+18
Te-132	1.0899E+05	3.5899E-04	1.6378E+21	2.1501E+19
I-131	4.1769E+05	3.3692E-03	1.5488E+22	1.4726E+20
I-132	5.9069E+05	5.7225E-05	2.6108E+20	2.0957E+20
I-133	8.1826E+05	7.2233E-04	3.2706E+21	2.9914E+20
I-134	2.0512E+05	7.6891E-06	3.4556E+19	2.0481E+20
I-135	6.7019E+05	1.9084E-04	8.5130E+20	2.6731E+20
Xe-133	1.4478E+08	7.7348E-01	3.5023E+24	1.6107E+22
Xe-135	6.0150E+07	2.3554E-02	1.0507E+23	6.7491E+21
Cs-134	8.2994E+04	6.4146E-02	2.8828E+23	3.4263E+19
Cs-136	2.4722E+04	3.3731E-04	1.4936E+21	1.0234E+19
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.7573E+19
Ba-139	2.1655E+04	1.3239E-06	5.7356E+18	6.2871E+18
Ba-140	5.7220E+04	7.8160E-04	3.3621E+21	1.1233E+19
La-140	7.0403E+02	1.2666E-06	5.4485E+18	1.2012E+17
La-141	3.7971E+02	6.7141E-08	2.8676E+17	8.4975E+16
La-142	2.1517E+02	1.5031E-08	6.3745E+16	5.9795E+16
Ce-141	1.3561E+03	4.7593E-05	2.0327E+20	2.6583E+17
Ce-143	1.2566E+03	1.8923E-06	7.9689E+18	2.5014E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	2.1346E+17
Pr-143	5.0946E+02	7.5656E-06	3.1861E+19	9.9814E+16
Nd-147	2.1156E+02	2.6151E-06	1.0713E+19	4.1544E+16
Np-239	1.5059E+04	6.4914E-05	1.6356E+20	2.9783E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	8.6183E+14
Pu-239	3.8521E-01	6.1975E-03	1.5616E+22	7.5492E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.4138E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	3.0473E+16
Am-241	1.0418E-01	3.0353E-05	7.5847E+19	2.0416E+13
Cm-242	2.6431E+01	7.9749E-06	1.9846E+19	5.1810E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.4247E+14

DW Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8191E+25	0.0000E+00	
Elemental I (atoms)	8.9461E+20	4.8075E+22	
Organic I (atoms)	1.4880E+21	0.0000E+00	
Aerosols (kg)	8.8765E-01	4.8455E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3585E-04

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 1.6879E-04
Total I (Ci) 2.7020E+06

DW to RB Transport Group Inventory:
Time (h) = 2.0000 Leakage Transport

Noble gases (atoms) 1.4107E+22
Elemental I (atoms) 1.5765E+18
Organic I (atoms) 8.6220E+17
Aerosols (kg) 1.6620E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3237E+17
Organic I (atoms)	0.0000E+00	4.5524E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3237E+17
Organic I (atoms)	0.0000E+00	4.5524E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.0124E-02	6.3288E-10	6.5712E+15	2.0628E+12
Co-60	2.4105E-02	2.1324E-08	2.1403E+17	2.4704E+12
Kr-85	6.7985E+02	1.7328E-03	1.2277E+22	5.3052E+16
Kr-85m	8.2233E+03	9.9924E-07	7.0795E+18	6.8532E+17
Kr-87	7.5600E+03	2.6690E-07	1.8475E+18	7.5283E+17
Kr-88	1.8721E+04	1.4930E-06	1.0217E+19	1.6225E+18
Rb-86	1.4614E+00	1.7960E-08	1.2576E+17	2.4966E+14
Sr-89	3.4104E+01	1.1739E-06	7.9430E+18	3.4961E+15
Sr-90	4.4891E+00	3.2910E-05	2.2021E+20	4.6007E+14
Sr-91	3.6702E+01	1.0125E-08	6.7002E+16	3.9001E+15
Sr-92	2.6537E+01	2.1112E-09	1.3819E+16	3.0966E+15
Y-90	8.4673E-02	1.5563E-10	1.0414E+15	7.0885E+12
Y-91	4.3910E-01	1.7905E-08	1.1849E+17	4.4756E+13
Y-92	4.6961E+00	4.8804E-10	3.1946E+15	3.2918E+14
Y-93	4.2625E-01	1.2776E-10	8.2730E+14	4.5197E+13
Zr-95	5.2853E-01	2.4602E-08	1.5596E+17	5.4178E+13
Zr-97	4.7181E-01	2.4681E-10	1.5323E+15	4.9344E+13
Nb-95	5.3005E-01	1.3555E-08	8.5927E+16	5.4320E+13
Mo-99	6.6299E+00	1.3823E-08	8.4087E+16	6.8299E+14
Tc-99m	5.9665E+00	1.1347E-09	6.9023E+15	6.0878E+14
Ru-103	5.8663E+00	1.8177E-07	1.0627E+18	6.0142E+14
Ru-105	3.0655E+00	4.5603E-10	2.6155E+15	3.3975E+14
Ru-106	2.5551E+00	7.6371E-07	4.3388E+18	2.6186E+14
Rh-105	3.9127E+00	4.6356E-09	2.6587E+16	4.0135E+14
Sb-127	6.6439E+00	2.4879E-08	1.1797E+17	6.8341E+14
Sb-129	1.5118E+01	2.6885E-09	1.2551E+16	1.6793E+15
Te-127	6.6594E+00	2.5233E-09	1.1965E+16	6.8040E+14
Te-127m	1.1434E+00	1.2122E-07	5.7480E+17	1.1718E+14
Te-129	1.7116E+01	8.1728E-10	3.8153E+15	1.7846E+15
Te-129m	3.7676E+00	1.2506E-07	5.8384E+17	3.8611E+14
Te-131m	1.3534E+01	1.6972E-08	7.8021E+16	1.4029E+15
Te-132	9.9905E+01	3.2907E-07	1.5013E+18	1.0283E+16
I-131	6.8567E+02	5.5308E-06	2.5425E+19	1.1097E+17
I-132	7.1430E+02	6.9200E-08	3.1571E+17	1.2917E+17
I-133	1.3440E+03	1.1865E-06	5.3722E+18	2.2246E+17
I-134	3.3692E+02	1.2630E-08	5.6760E+16	1.0595E+17
I-135	1.1008E+03	3.1346E-07	1.3983E+18	1.9240E+17
Xe-133	7.2325E+04	3.8639E-04	1.7495E+21	5.6534E+18
Xe-135	2.9189E+04	1.1430E-05	5.0987E+19	2.3148E+18
Cs-134	1.6035E+02	1.2393E-04	5.5697E+20	2.7362E+16

Cs-136	4.7764E+01	6.5170E-07	2.8857E+18	8.1639E+15
Cs-137	1.2904E+02	1.4836E-03	6.5213E+21	2.2019E+16
Ba-139	1.9850E+01	1.2136E-09	5.2577E+15	2.6464E+15
Ba-140	5.2451E+01	7.1646E-07	3.0819E+18	5.3814E+15
La-140	1.2619E+00	2.2703E-09	9.7658E+15	9.9928E+13
La-141	3.4806E-01	6.1546E-11	2.6286E+14	3.8979E+13
La-142	1.9724E-01	1.3778E-11	5.8433E+13	2.5534E+13
Ce-141	1.2427E+00	4.3614E-08	1.8628E+17	1.2738E+14
Ce-143	1.1519E+00	1.7346E-09	7.3048E+15	1.1928E+14
Ce-144	9.9827E-01	3.1299E-07	1.3089E+18	1.0231E+14
Pr-143	4.6804E-01	6.9505E-09	2.9271E+16	4.7913E+13
Nd-147	1.9393E-01	2.3972E-09	9.8206E+15	1.9900E+13
Np-239	1.3804E+01	5.9504E-08	1.4993E+17	1.4233E+15
Pu-238	4.0308E-03	2.3545E-07	5.9576E+17	4.1310E+11
Pu-239	3.5311E-04	5.6810E-06	1.4315E+19	3.6186E+10
Pu-240	6.6126E-04	2.9019E-06	7.2816E+18	6.7768E+10
Pu-241	1.4252E-01	1.3836E-06	3.4573E+18	1.4607E+13
Am-241	9.5507E-05	2.7827E-08	6.9535E+16	9.7869E+09
Cm-242	2.4229E-02	7.3104E-09	1.8192E+16	2.4833E+12
Cm-244	1.6018E-03	1.9799E-08	4.8865E+16	1.6415E+11

RB Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	1.4097E+22	0.0000E+00	
Elemental I (atoms)	1.5405E+18	0.0000E+00	
Organic I (atoms)	8.5205E+17	0.0000E+00	
Aerosols (kg)	1.6619E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8188E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.4808E-08
Total I (Ci)			4.1818E+03

DW to RB Transport Group Inventory:

Time (h) = 2.0000	Leakage Transport
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5765E+18
Organic I (atoms)	8.6220E+17
Aerosols (kg)	1.6620E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.5654E-10	4.9229E-18	5.1115E+07	9.3677E+03
Co-60	1.8750E-10	1.6587E-16	1.6649E+09	1.1219E+04
Kr-85	1.3837E-02	3.5268E-08	2.4987E+17	7.5211E+11
Kr-85m	1.6737E-01	2.0337E-11	1.4409E+14	9.5469E+12
Kr-87	1.5387E-01	5.4321E-12	3.7601E+13	9.9888E+12
Kr-88	3.8103E-01	3.0387E-11	2.0795E+14	2.2365E+13
Rb-86	2.5877E-08	3.1802E-16	2.2270E+09	2.6038E+06
Sr-89	2.6528E-07	9.1312E-15	6.1786E+10	1.5876E+07
Sr-90	3.4919E-08	2.5599E-13	1.7129E+12	2.0894E+06
Sr-91	2.8549E-07	7.8756E-17	5.2118E+08	1.7488E+07
Sr-92	2.0642E-07	1.6422E-17	1.0750E+08	1.3431E+07
Y-90	7.7696E-10	1.4281E-18	9.5556E+06	3.9897E+04
Y-91	3.4354E-09	1.4009E-16	9.2705E+08	2.0453E+05
Y-92	5.0024E-08	5.1987E-18	3.4030E+07	2.3882E+06
Y-93	3.3156E-09	9.9380E-19	6.4353E+06	2.0282E+05
Zr-95	4.1112E-09	1.9137E-16	1.2131E+09	2.4603E+05
Zr-97	3.6700E-09	1.9198E-18	1.1919E+07	2.2251E+05
Nb-95	4.1230E-09	1.0544E-16	6.6839E+08	2.4669E+05
Mo-99	5.1571E-08	1.0753E-16	6.5408E+08	3.0962E+06
Tc-99m	4.6411E-08	8.8263E-18	5.3690E+07	2.7629E+06
Ru-103	4.5631E-08	1.4139E-15	8.2666E+09	2.7310E+06

Ru-105	2.3845E-08	3.5473E-18	2.0345E+07	1.5009E+06
Ru-106	1.9875E-08	5.9406E-15	3.3750E+10	1.1892E+06
Rh-105	3.0436E-08	3.6059E-17	2.0681E+08	1.8218E+06
Sb-127	5.1680E-08	1.9352E-16	9.1764E+08	3.0997E+06
Sb-129	1.1760E-07	2.0913E-17	9.7627E+07	7.4130E+06
Te-127	5.1800E-08	1.9628E-17	9.3073E+07	3.0889E+06
Te-127m	8.8941E-09	9.4291E-16	4.4711E+09	5.3217E+05
Te-129	1.3314E-07	6.3573E-18	2.9678E+07	7.9813E+06
Te-129m	2.9307E-08	9.7282E-16	4.5414E+09	1.7535E+06
Te-131m	1.0527E-07	1.3202E-16	6.0689E+08	6.3457E+06
Te-132	7.7712E-07	2.5597E-15	1.1678E+10	4.6631E+07
I-131	7.8518E-04	6.3334E-12	2.9115E+13	7.2120E+10
I-132	7.1135E-04	6.8915E-14	3.1441E+11	7.3547E+10
I-133	1.5394E-03	1.3590E-12	6.1533E+12	1.4357E+11
I-134	3.8591E-04	1.4466E-14	6.5012E+10	5.5797E+10
I-135	1.2609E-03	3.5904E-13	1.6016E+12	1.2204E+11
Xe-133	1.4705E+00	7.8562E-09	3.5572E+16	8.0042E+13
Xe-135	5.7922E-01	2.2681E-10	1.0118E+15	3.1972E+13
Cs-134	2.8393E-06	2.1945E-12	9.8624E+12	2.8547E+08
Cs-136	8.4577E-07	1.1540E-14	5.1099E+10	8.5132E+07
Cs-137	2.2850E-06	2.6270E-11	1.1547E+14	2.2973E+08
Ba-139	1.5441E-07	9.4397E-18	4.0897E+07	1.0941E+07
Ba-140	4.0800E-07	5.5731E-15	2.3973E+10	2.4430E+07
La-140	1.2006E-08	2.1600E-17	9.2913E+07	5.9656E+05
La-141	2.7074E-09	4.7874E-19	2.0447E+06	1.7157E+05
La-142	1.5342E-09	1.0718E-19	4.5453E+05	1.0669E+05
Ce-141	9.6653E-09	3.3921E-16	1.4488E+09	5.7841E+05
Ce-143	8.9602E-09	1.3493E-17	5.6821E+07	5.3975E+05
Ce-144	7.7651E-09	2.4346E-15	1.0182E+10	4.6464E+05
Pr-143	3.6444E-09	5.4120E-17	2.2792E+08	2.1784E+05
Nd-147	1.5085E-09	1.8647E-17	7.6390E+07	9.0337E+04
Np-239	1.0738E-07	4.6286E-16	1.1663E+09	6.4503E+06
Pu-238	3.1354E-11	1.8315E-15	4.6342E+09	1.8761E+03
Pu-239	2.7467E-12	4.4191E-14	1.1135E+11	1.6434E+02
Pu-240	5.1437E-12	2.2573E-14	5.6641E+10	3.0777E+02
Pu-241	1.1086E-09	1.0762E-14	2.6893E+10	6.6336E+04
Am-241	7.4295E-13	2.1647E-16	5.4091E+08	4.4451E+01
Cm-242	1.8847E-10	5.6864E-17	1.4151E+08	1.1277E+04
Cm-244	1.2459E-11	1.5401E-16	3.8010E+08	7.4551E+02

CR Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8684E+17	0.0000E+00	
Elemental I (atoms)	2.9620E+13	0.0000E+00	
Organic I (atoms)	7.1278E+12	0.0000E+00	
Aerosols (kg)	2.8953E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7851E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6636E-13
Total I (Ci)			4.6828E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1340E+17
Elemental I (atoms)	0.0000E+00	4.3785E+13
Organic I (atoms)	0.0000E+00	8.9519E+12
Aerosols (kg)	0.0000E+00	4.2538E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5299E+17
Elemental I (atoms)	8.5627E+13	2.6482E+12
Organic I (atoms)	1.9160E+13	5.9259E+11
Aerosols (kg)	8.3046E-11	2.5684E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported

Noble gases (atoms)	7.9405E+16	0.0000E+00
Elemental I (atoms)	1.6413E+13	0.0000E+00
Organic I (atoms)	2.3572E+12	0.0000E+00
Aerosols (kg)	1.6152E-11	0.0000E+00

EAB Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.4448E-03	9.1791E-03	2.7353E-03
Accumulated dose (rem)	2.1560E-02	1.2341E-01	2.5471E-02

LPZ Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.5482E-02	1.7076E-01	5.0886E-02
Accumulated dose (rem)	5.2817E-01	3.0553E+00	6.2499E-01

CR Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.1212E-03	5.1714E-02	2.7573E-03
Accumulated dose (rem)	5.4355E-03	3.8910E-01	1.7758E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.0928E+00	3.4368E-08	3.5684E+17	4.3186E+15
Co-60	1.3091E+00	1.1581E-06	1.1623E+19	5.1714E+15
Kr-85	1.3591E+06	3.4642E+00	2.4543E+25	1.6905E+20
Kr-85m	1.6187E+07	1.9669E-03	1.3936E+22	2.2067E+21
Kr-87	1.4312E+07	5.0526E-04	3.4974E+21	2.5065E+21
Kr-88	3.6524E+07	2.9128E-03	1.9933E+22	5.2599E+21
Rb-86	3.7648E+01	4.6269E-07	3.2400E+18	3.1336E+17
Sr-89	1.8520E+03	6.3746E-05	4.3133E+20	7.3195E+18
Sr-90	2.4379E+02	1.7872E-03	1.1959E+22	9.6308E+17
Sr-91	1.9787E+03	5.4584E-07	3.6122E+18	8.3106E+18
Sr-92	1.4047E+03	1.1176E-07	7.3154E+17	6.9087E+18
Y-90	3.0524E+00	5.6104E-09	3.7541E+16	1.0064E+16
Y-91	2.3590E+01	9.6191E-07	6.3656E+18	9.2902E+16
Y-92	7.9102E+01	8.2207E-09	5.3811E+16	1.0930E+17
Y-93	2.2990E+01	6.8908E-09	4.4621E+16	9.6207E+16
Zr-95	2.8701E+01	1.3360E-06	8.4691E+18	1.1342E+17
Zr-97	2.5518E+01	1.3348E-08	8.2871E+16	1.0433E+17
Nb-95	2.8785E+01	7.3613E-07	4.6664E+18	1.1371E+17
Mo-99	3.5967E+02	7.4991E-07	4.5617E+18	1.4334E+18
Tc-99m	3.2396E+02	6.1609E-08	3.7477E+17	1.2762E+18
Ru-103	3.1855E+02	9.8703E-06	5.7709E+19	1.2592E+18
Ru-105	1.6390E+02	2.4382E-08	1.3984E+17	7.3906E+17
Ru-106	1.3876E+02	4.1474E-05	2.3563E+20	5.4818E+17
Rh-105	2.1239E+02	2.5164E-07	1.4432E+18	8.4077E+17
Sb-127	3.6054E+02	1.3501E-06	6.4017E+18	1.4332E+18
Sb-129	8.0796E+02	1.4368E-07	6.7074E+17	3.6570E+18
Te-127	3.6162E+02	1.3702E-07	6.4974E+17	1.4255E+18
Te-127m	6.2094E+01	6.5830E-06	3.1215E+19	2.4529E+17
Te-129	9.2100E+02	4.3978E-08	2.0530E+17	3.8228E+18
Te-129m	2.0460E+02	6.7917E-06	3.1706E+19	8.0827E+17
Te-131m	7.3326E+02	9.1956E-07	4.2273E+18	2.9532E+18
Te-132	5.4207E+03	1.7855E-05	8.1459E+19	2.1573E+19
I-131	5.0440E+04	4.0686E-04	1.8704E+21	1.4793E+20
I-132	6.9402E+04	6.7236E-06	3.0674E+19	2.1050E+20
I-133	9.8518E+04	8.6968E-05	3.9379E+20	3.0046E+20
I-134	2.2895E+04	8.5824E-07	3.8571E+18	2.0512E+20
I-135	8.0116E+04	2.2813E-05	1.0177E+20	2.6838E+20
Xe-133	1.4469E+08	7.7298E-01	3.5000E+24	1.8034E+22
Xe-135	5.9688E+07	2.3373E-02	1.0426E+23	7.5472E+21
Cs-134	4.1315E+03	3.1933E-03	1.4351E+22	3.4318E+19
Cs-136	1.2304E+03	1.6788E-05	7.4338E+19	1.0251E+19
Cs-137	3.3249E+03	3.8226E-02	1.6803E+23	2.7617E+19
Ba-139	1.0251E+03	6.2672E-08	2.7152E+17	6.3011E+18
Ba-140	2.8478E+03	3.8900E-05	1.6733E+20	1.1271E+19
La-140	3.9889E+01	7.1765E-08	3.0870E+17	1.2059E+17
La-141	1.8572E+01	3.2839E-09	1.4026E+16	8.5225E+16

La-142	1.0240E+01	7.1536E-10	3.0338E+15	5.9934E+16
Ce-141	6.7503E+01	2.3691E-06	1.0118E+19	2.6672E+17
Ce-143	6.2425E+01	9.4002E-08	3.9587E+17	2.5097E+17
Ce-144	5.4212E+01	1.6997E-05	7.1082E+19	2.1418E+17
Pr-143	2.5369E+01	3.7674E-07	1.5866E+18	1.0015E+17
Nd-147	1.0529E+01	1.3015E-07	5.3318E+17	4.1685E+16
Np-239	7.4875E+02	3.2275E-06	8.1324E+18	2.9883E+18
Pu-238	2.1890E-01	1.2787E-05	3.2354E+19	8.6475E+14
Pu-239	1.9177E-02	3.0852E-04	7.7739E+20	7.5747E+13
Pu-240	3.5911E-02	1.5759E-04	3.9544E+20	1.4186E+14
Pu-241	7.7400E+00	7.5136E-05	1.8775E+20	3.0576E+16
Am-241	5.1862E-03	1.5111E-06	3.7759E+18	2.0485E+13
Cm-242	1.3158E+00	3.9699E-07	9.8792E+17	5.1986E+15
Cm-244	8.6986E-02	1.0752E-06	2.6537E+18	3.4363E+14

DW Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	2.8185E+25	0.0000E+00	
Elemental I (atoms)	4.4456E+19	4.8566E+22	
Organic I (atoms)	1.4852E+21	0.0000E+00	
Aerosols (kg)	4.4188E-02	4.8943E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.6385E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.0325E-05
Total I (Ci)			3.2137E+05

DW to RB Transport Group Inventory:

Time (h) = 2.1000	Leakage Transport
Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5520E+17
Aerosols (kg)	1.6722E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3550E+17
Organic I (atoms)	0.0000E+00	4.8369E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3550E+17
Organic I (atoms)	0.0000E+00	4.8369E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	2.0558E-02	6.4652E-10	6.7128E+15	2.3367E+12
Co-60	2.4625E-02	2.1785E-08	2.1865E+17	2.7984E+12
Kr-85	7.6480E+02	1.9494E-03	1.3811E+22	6.3239E+16
Kr-85m	9.1088E+03	1.1068E-06	7.8418E+18	8.0759E+17
Kr-87	8.0535E+03	2.8432E-07	1.9680E+18	8.6308E+17
Kr-88	2.0553E+04	1.6391E-06	1.1217E+19	1.8997E+18
Rb-86	1.4761E+00	1.8141E-08	1.2703E+17	2.6932E+14
Sr-89	3.4838E+01	1.1992E-06	8.1141E+18	3.9602E+15
Sr-90	4.5861E+00	3.3621E-05	2.2496E+20	5.2115E+14
Sr-91	3.7222E+01	1.0268E-08	6.7952E+16	4.3977E+15
Sr-92	2.6425E+01	2.1023E-09	1.3761E+16	3.4531E+15
Y-90	9.0657E-02	1.6663E-10	1.1150E+15	8.2305E+12
Y-91	4.4922E-01	1.8318E-08	1.2122E+17	5.0729E+13
Y-92	5.1495E+00	5.3516E-10	3.5030E+15	3.9139E+14
Y-93	4.3248E-01	1.2963E-10	8.3939E+14	5.0978E+13
Zr-95	5.3992E-01	2.5132E-08	1.5932E+17	6.1370E+13
Zr-97	4.8003E-01	2.5110E-10	1.5589E+15	5.5751E+13
Nb-95	5.4149E-01	1.3848E-08	8.7783E+16	6.1532E+13

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Mo-99                  6.7660E+00  1.4107E-08  8.5813E+16  7.7316E+14
Tc-99m                 6.0941E+00  1.1590E-09  7.0500E+15  6.8950E+14
Ru-103                 5.9925E+00  1.8568E-07  1.0856E+18  6.8124E+14
Ru-105                 3.0831E+00  4.5866E-10  2.6306E+15  3.8114E+14
Ru-106                 2.6102E+00  7.8020E-07  4.4325E+18  2.9663E+14
Rh-105                 3.9955E+00  4.7337E-09  2.7149E+16  4.5454E+14
Sb-127                 6.7823E+00  2.5397E-08  1.2043E+17  7.7379E+14
Sb-129                 1.5199E+01  2.7028E-09  1.2618E+16  1.8834E+15
Te-127                 6.8026E+00  2.5776E-09  1.2223E+16  7.7068E+14
Te-127m                1.1681E+00  1.2384E-07  5.8721E+17  1.3274E+14
Te-129                 1.7326E+01  8.2730E-10  3.8621E+15  2.0107E+15
Te-129m                3.8489E+00  1.2776E-07  5.9644E+17  4.3738E+14
Te-131m                1.3794E+01  1.7298E-08  7.9522E+16  1.5868E+15
Te-132                 1.0197E+02  3.3588E-07  1.5324E+18  1.1642E+16
I-131                  6.9503E+02  5.6062E-06  2.5772E+19  1.2023E+17
I-132                  7.0934E+02  6.8720E-08  3.1352E+17  1.3872E+17
I-133                  1.3583E+03  1.1991E-06  5.4293E+18  2.4059E+17
I-134                  3.1567E+02  1.1833E-08  5.3179E+16  1.1032E+17
I-135                  1.1046E+03  3.1453E-07  1.4031E+18  2.0719E+17
Xe-133                 8.1329E+04  4.3449E-04  1.9674E+21  6.7369E+18
Xe-135                 3.2705E+04  1.2807E-05  5.7129E+19  2.7520E+18
Cs-134                 1.6199E+02  1.2520E-04  5.6267E+20  2.9519E+16
Cs-136                 4.8242E+01  6.5823E-07  2.9147E+18  8.8066E+15
Cs-137                 1.3036E+02  1.4988E-03  6.5881E+21  2.3756E+16
Ba-139                 1.9284E+01  1.1790E-09  5.1078E+15  2.9098E+15
Ba-140                 5.3572E+01  7.3177E-07  3.1477E+18  6.0951E+15
La-140                 1.3659E+00  2.4573E-09  1.0570E+16  1.1691E+14
La-141                 3.4936E-01  6.1776E-11  2.6385E+14  4.3673E+13
La-142                 1.9264E-01  1.3457E-11  5.7070E+13  2.8159E+13
Ce-141                 1.2695E+00  4.4553E-08  1.9029E+17  1.4429E+14
Ce-143                 1.1743E+00  1.7683E-09  7.4469E+15  1.3494E+14
Ce-144                 1.0198E+00  3.1974E-07  1.3372E+18  1.1590E+14
Pr-143                 4.7827E-01  7.1025E-09  2.9911E+16  5.4281E+13
Nd-147                 1.9807E-01  2.4483E-09  1.0030E+16  2.2539E+13
Np-239                 1.4085E+01  6.0715E-08  1.5298E+17  1.6110E+15
Pu-238                 4.1179E-03  2.4054E-07  6.0863E+17  4.6795E+11
Pu-239                 3.6074E-04  5.8038E-06  1.4624E+19  4.0991E+10
Pu-240                 6.7554E-04  2.9646E-06  7.4389E+18  7.6767E+10
Pu-241                 1.4560E-01  1.4134E-06  3.5319E+18  1.6546E+13
Am-241                 9.7572E-05  2.8429E-08  7.1038E+16  1.1087E+10
Cm-242                 2.4752E-02  7.4681E-09  1.8584E+16  2.8130E+12
Cm-244                 1.6363E-03  2.0226E-08  4.9920E+16  1.8595E+11

RB Transport Group Inventory:
Time (h) =   2.1000    Atmosphere     Sump
Noble gases (atoms)    1.5856E+22  0.0000E+00
Elemental I (atoms)    1.5557E+18  0.0000E+00
Organic I (atoms)      9.4348E+17  0.0000E+00
Aerosols (kg)          1.6795E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.8539E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.5194E-08
Total I (Ci)                                   4.1829E+03

DW to  RB Transport Group Inventory:
Time (h) =   2.1000  Leakage Transport

Noble gases (atoms)      1.5869E+22
Elemental I (atoms)      1.5867E+18
Organic I (atoms)        9.5520E+17
Aerosols (kg)            1.6722E-03

RB toEnvironment Transport Group Inventory:

                        Pathway
Time (h) =   2.1000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:
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Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.6179E-10	5.0880E-18	5.2829E+07	1.1523E+04
Co-60	1.9380E-10	1.7144E-16	1.7208E+09	1.3801E+04
Kr-85	1.4594E-02	3.7197E-08	2.6354E+17	9.4650E+11
Kr-85m	1.7381E-01	2.1121E-11	1.4964E+14	1.1880E+13
Kr-87	1.5368E-01	5.4253E-12	3.7554E+13	1.2093E+13
Kr-88	3.9218E-01	3.1276E-11	2.1404E+14	2.7653E+13
Rb-86	2.5790E-08	3.1695E-16	2.2194E+09	2.9473E+06
Sr-89	2.7417E-07	9.4373E-15	6.3857E+10	1.9528E+07
Sr-90	3.6092E-08	2.6459E-13	1.7704E+12	2.5701E+06
Sr-91	2.9293E-07	8.0808E-17	5.3477E+08	2.1404E+07
Sr-92	2.0796E-07	1.6545E-17	1.0830E+08	1.6237E+07
Y-90	8.3647E-10	1.5374E-18	1.0287E+07	5.0524E+04
Y-91	3.5559E-09	1.4500E-16	9.5956E+08	2.5182E+05
Y-92	5.4285E-08	5.6416E-18	3.6929E+07	3.0629E+06
Y-93	3.4035E-09	1.0201E-18	6.6059E+06	2.4831E+05
Zr-95	4.2491E-09	1.9779E-16	1.2538E+09	3.0263E+05
Zr-97	3.7777E-09	1.9761E-18	1.2269E+07	2.7293E+05
Nb-95	4.2615E-09	1.0898E-16	6.9084E+08	3.0345E+05
Mo-99	5.3247E-08	1.1102E-16	6.7534E+08	3.8058E+06
Tc-99m	4.7960E-08	9.1209E-18	5.5482E+07	3.3982E+06
Ru-103	4.7160E-08	1.4612E-15	8.5435E+09	3.3592E+06
Ru-105	2.4264E-08	3.6096E-18	2.0702E+07	1.8267E+06
Ru-106	2.0542E-08	6.1400E-15	3.4883E+10	1.4629E+06
Rh-105	3.1444E-08	3.7253E-17	2.1366E+08	2.2404E+06
Sb-127	5.3375E-08	1.9987E-16	9.4774E+08	3.8109E+06
Sb-129	1.1961E-07	2.1271E-17	9.9299E+07	9.0191E+06
Te-127	5.3536E-08	2.0286E-17	9.6191E+07	3.7994E+06
Te-127m	9.1927E-09	9.7457E-16	4.6213E+09	6.5461E+05
Te-129	1.3635E-07	6.5107E-18	3.0394E+07	9.7605E+06
Te-129m	3.0290E-08	1.0055E-15	4.6939E+09	2.1570E+06
Te-131m	1.0856E-07	1.3614E-16	6.2582E+08	7.7934E+06
Te-132	8.0250E-07	2.6433E-15	1.2060E+10	5.7325E+07
I-131	7.9005E-04	6.3726E-12	2.9295E+13	8.2646E+10
I-132	6.9793E-04	6.7615E-14	3.0847E+11	8.2984E+10
I-133	1.5444E-03	1.3633E-12	6.1730E+12	1.6418E+11
I-134	3.5891E-04	1.3454E-14	6.0463E+10	6.0771E+10
I-135	1.2559E-03	3.5762E-13	1.5953E+12	1.3886E+11
Xe-133	1.5502E+00	8.2818E-09	3.7499E+16	1.0070E+14
Xe-135	6.0708E-01	2.3772E-10	1.0604E+15	4.0089E+13
Cs-134	2.8302E-06	2.1874E-12	9.8306E+12	3.2316E+08
Cs-136	8.4286E-07	1.1500E-14	5.0923E+10	9.6360E+07
Cs-137	2.2776E-06	2.6185E-11	1.1510E+14	2.6007E+08
Ba-139	1.5176E-07	9.2782E-18	4.0198E+07	1.3014E+07
Ba-140	4.2160E-07	5.7589E-15	2.4772E+10	3.0047E+07
La-140	1.3025E-08	2.3433E-17	1.0080E+08	7.6052E+05
La-141	2.7494E-09	4.8617E-19	2.0764E+06	2.0851E+05
La-142	1.5160E-09	1.0590E-19	4.4914E+05	1.2735E+05
Ce-141	9.9892E-09	3.5058E-16	1.4973E+09	7.1147E+05
Ce-143	9.2417E-09	1.3916E-17	5.8606E+07	6.6298E+05
Ce-144	8.0258E-09	2.5163E-15	1.0523E+10	5.7155E+05
Pr-143	3.7678E-09	5.5953E-17	2.3563E+08	2.6800E+05
Nd-147	1.5587E-09	1.9268E-17	7.8935E+07	1.1110E+05
Np-239	1.1085E-07	4.7781E-16	1.2040E+09	7.9277E+06
Pu-238	3.2407E-11	1.8930E-15	4.7898E+09	2.3077E+03
Pu-239	2.8390E-12	4.5675E-14	1.1509E+11	2.0216E+02
Pu-240	5.3164E-12	2.3331E-14	5.8543E+10	3.7858E+02
Pu-241	1.1459E-09	1.1124E-14	2.7796E+10	8.1598E+04
Am-241	7.6792E-13	2.2374E-16	5.5909E+08	5.4679E+01
Cm-242	1.9479E-10	5.8773E-17	1.4626E+08	1.3872E+04
Cm-244	1.2878E-11	1.5918E-16	3.9286E+08	9.1704E+02

CR Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	3.0250E+17	0.0000E+00	
Elemental I (atoms)	2.9530E+13	0.0000E+00	
Organic I (atoms)	7.4019E+12	0.0000E+00	
Aerosols (kg)	2.8873E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8042E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6805E-13
Total I (Ci)			4.6472E-03

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2522E+17
Elemental I (atoms)	0.0000E+00	4.5888E+13
Organic I (atoms)	0.0000E+00	9.7459E+12
Aerosols (kg)	0.0000E+00	4.4555E-11

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.7960E+17
Elemental I (atoms)	9.0217E+13	2.7902E+12
Organic I (atoms)	2.0893E+13	6.4619E+11
Aerosols (kg)	8.7447E-11	2.7046E-12

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	1.0215E+17	0.0000E+00
Elemental I (atoms)	1.8698E+13	0.0000E+00
Organic I (atoms)	2.9184E+12	0.0000E+00
Aerosols (kg)	1.8384E-11	0.0000E+00

EAB Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.4472E-03	1.9727E-02	6.0713E-03
Accumulated dose (rem)	2.7007E-02	1.4314E-01	3.1542E-02

LPZ Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.0134E-01	3.6699E-01	1.1295E-01
Accumulated dose (rem)	6.2951E-01	3.4223E+00	7.3794E-01

CR Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.3576E-03	1.0467E-01	5.6677E-03
Accumulated dose (rem)	7.7931E-03	4.9377E-01	2.3426E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	5.9959E-01	1.8856E-08	1.9578E+17	4.3374E+15
Co-60	7.1828E-01	6.3543E-07	6.3777E+18	5.1938E+15
Kr-85	1.3588E+06	3.4635E+00	2.4538E+25	2.0526E+20
Kr-85m	1.5691E+07	1.9066E-03	1.3508E+22	2.6313E+21
Kr-87	1.2831E+07	4.5298E-04	3.1355E+21	2.8677E+21
Kr-88	3.4777E+07	2.7734E-03	1.8980E+22	6.2094E+21
Rb-86	2.0651E+01	2.5380E-07	1.7772E+18	3.1401E+17
Sr-89	1.0161E+03	3.4974E-05	2.3665E+20	7.3513E+18
Sr-90	1.3377E+02	9.8065E-04	6.5618E+21	9.6726E+17
Sr-91	1.0700E+03	2.9516E-07	1.9533E+18	8.3444E+18
Sr-92	7.3233E+02	5.8263E-08	3.8138E+17	6.9323E+18
Y-90	1.9608E+00	3.6041E-09	2.4116E+16	1.0118E+16
Y-91	1.2987E+01	5.2957E-07	3.5045E+18	9.3307E+16
Y-92	7.0873E+01	7.3654E-09	4.8213E+16	1.1083E+17
Y-93	1.2443E+01	3.7294E-09	2.4150E+16	9.6599E+16
Zr-95	1.5747E+01	7.3300E-07	4.6466E+18	1.1392E+17
Zr-97	1.3887E+01	7.2644E-09	4.5100E+16	1.0476E+17
Nb-95	1.5794E+01	4.0392E-07	2.5605E+18	1.1421E+17
Mo-99	1.9694E+02	4.1062E-07	2.4978E+18	1.4395E+18
Tc-99m	1.7768E+02	3.3791E-08	2.0555E+17	1.2817E+18
Ru-103	1.7477E+02	5.4151E-06	3.1660E+19	1.2647E+18
Ru-105	8.7165E+01	1.2967E-08	7.4371E+16	7.4184E+17
Ru-106	7.6134E+01	2.2757E-05	1.2929E+20	5.5056E+17
Rh-105	1.1643E+02	1.3794E-07	7.9116E+17	8.4441E+17

Sb-127	1.9753E+02	7.3967E-07	3.5074E+18	1.4394E+18
Sb-129	4.2933E+02	7.6347E-08	3.5641E+17	3.6707E+18
Te-127	1.9839E+02	7.5173E-08	3.5646E+17	1.4317E+18
Te-127m	3.4071E+01	3.6121E-06	1.7128E+19	2.4636E+17
Te-129	4.9587E+02	2.3678E-08	1.1054E+17	3.8381E+18
Te-129m	1.1226E+02	3.7265E-06	1.7397E+19	8.1179E+17
Te-131m	4.0049E+02	5.0224E-07	2.3088E+18	2.9657E+18
Te-132	2.9691E+03	9.7797E-06	4.4617E+19	2.1666E+19
I-131	4.2146E+04	3.3996E-04	1.5628E+21	1.4910E+20
I-132	5.4834E+04	5.3123E-06	2.4236E+19	2.1207E+20
I-133	8.1830E+04	7.2236E-05	3.2708E+20	3.0274E+20
I-134	1.6344E+04	6.1266E-07	2.7534E+18	2.0562E+20
I-135	6.5599E+04	1.8679E-05	8.3326E+19	2.7022E+20
Xe-133	1.4450E+08	7.7197E-01	3.4954E+24	2.1886E+22
Xe-135	5.8773E+07	2.3015E-02	1.0267E+23	9.1250E+21
Cs-134	2.2670E+03	1.7521E-03	7.8743E+21	3.4389E+19
Cs-136	6.7483E+02	9.2076E-06	4.0772E+19	1.0272E+19
Cs-137	1.8244E+03	2.0974E-02	9.2198E+22	2.7674E+19
Ba-139	5.0866E+02	3.1098E-08	1.3473E+17	6.3179E+18
Ba-140	1.5619E+03	2.1335E-05	9.1772E+19	1.1320E+19
La-140	2.7185E+01	4.8909E-08	2.1038E+17	1.2131E+17
La-141	9.8371E+00	1.7394E-09	7.4291E+15	8.5538E+16
La-142	5.1357E+00	3.5876E-10	1.5215E+15	6.0103E+16
Ce-141	3.7034E+01	1.2997E-06	5.5512E+18	2.6788E+17
Ce-143	3.4109E+01	5.1363E-08	2.1630E+17	2.5204E+17
Ce-144	2.9746E+01	9.3261E-06	3.9002E+19	2.1511E+17
Pr-143	1.3929E+01	2.0685E-07	8.7109E+17	1.0059E+17
Nd-147	5.7742E+00	7.1375E-08	2.9240E+17	4.1866E+16
Np-239	4.0984E+02	1.7666E-06	4.4513E+18	3.0012E+18
Pu-238	1.2011E-01	7.0160E-06	1.7753E+19	8.6851E+14
Pu-239	1.0523E-02	1.6929E-04	4.2657E+20	7.6077E+13
Pu-240	1.9704E-02	8.6473E-05	2.1698E+20	1.4248E+14
Pu-241	4.2469E+00	4.1227E-05	1.0302E+20	3.0709E+16
Am-241	2.8458E-03	8.2917E-07	2.0719E+18	2.0574E+13
Cm-242	7.2193E-01	2.1782E-07	5.4205E+17	5.2212E+15
Cm-244	4.7729E-02	5.8996E-07	1.4561E+18	3.4513E+14

DW Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	2.8172E+25	0.0000E+00	
Elemental I (atoms)	4.4293E+19	4.8566E+22	
Organic I (atoms)	1.4797E+21	0.0000E+00	
Aerosols (kg)	2.4245E-02	4.8963E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3657E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6888E-05
Total I (Ci)			2.6075E+05

DW to RB Transport Group Inventory:

Time (h) = 2.3000	Leakage Transport
Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5922E+18
Organic I (atoms)	1.1407E+18
Aerosols (kg)	1.6764E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3720E+17
Organic I (atoms)	0.0000E+00	5.4043E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3720E+17
Organic I (atoms)	0.0000E+00	5.4043E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	2.0659E-02	6.4970E-10	6.7458E+15	2.8865E+12
Co-60	2.4748E-02	2.1894E-08	2.1975E+17	3.4570E+12
Kr-85	9.3467E+02	2.3823E-03	1.6879E+22	8.7008E+16
Kr-85m	1.0793E+04	1.3115E-06	9.2916E+18	1.0862E+18
Kr-87	8.8257E+03	3.1158E-07	2.1568E+18	1.0999E+18
Kr-88	2.3921E+04	1.9077E-06	1.3055E+19	2.5227E+18
Rb-86	1.4792E+00	1.8179E-08	1.2730E+17	3.0871E+14
Sr-89	3.5009E+01	1.2050E-06	8.1537E+18	4.8919E+15
Sr-90	4.6090E+00	3.3789E-05	2.2609E+20	6.4381E+14
Sr-91	3.6866E+01	1.0170E-08	6.7302E+16	5.3860E+15
Sr-92	2.5233E+01	2.0075E-09	1.3140E+16	4.1421E+15
Y-90	1.0073E-01	1.8514E-10	1.2388E+15	1.0715E+13
Y-91	4.5293E-01	1.8469E-08	1.2222E+17	6.2753E+13
Y-92	5.9627E+00	6.1968E-10	4.0563E+15	5.3285E+14
Y-93	4.2871E-01	1.2850E-10	8.3208E+14	6.2465E+13
Zr-95	5.4257E-01	2.5256E-08	1.6010E+17	7.5809E+13
Zr-97	4.7848E-01	2.5030E-10	1.5539E+15	6.8537E+13
Nb-95	5.4420E-01	1.3917E-08	8.8221E+16	7.6014E+13
Mo-99	6.7855E+00	1.4148E-08	8.6061E+16	9.5392E+14
Tc-99m	6.1220E+00	1.1643E-09	7.0822E+15	8.5154E+14
Ru-103	6.0216E+00	1.8658E-07	1.0909E+18	8.4150E+14
Ru-105	3.0033E+00	4.4679E-10	2.5625E+15	4.6232E+14
Ru-106	2.6232E+00	7.8408E-07	4.4546E+18	3.6644E+14
Rh-105	4.0117E+00	4.7529E-09	2.7260E+16	5.6127E+14
Sb-127	6.8059E+00	2.5485E-08	1.2085E+17	9.5504E+14
Sb-129	1.4793E+01	2.6306E-09	1.2280E+16	2.2834E+15
Te-127	6.8355E+00	2.5901E-09	1.2282E+16	9.5194E+14
Te-127m	1.1739E+00	1.2446E-07	5.9015E+17	1.6398E+14
Te-129	1.7085E+01	8.1583E-10	3.8086E+15	2.4584E+15
Te-129m	3.8680E+00	1.2840E-07	5.9941E+17	5.4031E+14
Te-131m	1.3799E+01	1.7305E-08	7.9551E+16	1.9549E+15
Te-132	1.0230E+02	3.3696E-07	1.5373E+18	1.4367E+16
I-131	7.0027E+02	5.6485E-06	2.5966E+19	1.3886E+17
I-132	6.8136E+02	6.6010E-08	3.0115E+17	1.5725E+17
I-133	1.3604E+03	1.2009E-06	5.4377E+18	2.7688E+17
I-134	2.7172E+02	1.0186E-08	4.5775E+16	1.1815E+17
I-135	1.0906E+03	3.1055E-07	1.3853E+18	2.3649E+17
Xe-133	9.9306E+04	5.3053E-04	2.4022E+21	9.2635E+18
Xe-135	3.9572E+04	1.5496E-05	6.9124E+19	3.7645E+18
Cs-134	1.6238E+02	1.2550E-04	5.6402E+20	3.3843E+16
Cs-136	4.8337E+01	6.5952E-07	2.9204E+18	1.0094E+16
Cs-137	1.3068E+02	1.5023E-03	6.6039E+21	2.7235E+16
Ba-139	1.7526E+01	1.0715E-09	4.6421E+15	3.4004E+15
Ba-140	5.3815E+01	7.3509E-07	3.1620E+18	7.5276E+15
La-140	1.5500E+00	2.7887E-09	1.1996E+16	1.5454E+14
La-141	3.3894E-01	5.9933E-11	2.5597E+14	5.2854E+13
La-142	1.7695E-01	1.2361E-11	5.2423E+13	3.3086E+13
Ce-141	1.2757E+00	4.4770E-08	1.9121E+17	1.7824E+14
Ce-143	1.1752E+00	1.7697E-09	7.4528E+15	1.6628E+14
Ce-144	1.0249E+00	3.2133E-07	1.3438E+18	1.4317E+14
Pr-143	4.8095E-01	7.1423E-09	3.0078E+16	6.7073E+13
Nd-147	1.9895E-01	2.4593E-09	1.0075E+16	2.7835E+13
Np-239	1.4121E+01	6.0868E-08	1.5337E+17	1.9873E+15
Pu-238	4.1385E-03	2.4174E-07	6.1167E+17	5.7808E+11
Pu-239	3.6256E-04	5.8329E-06	1.4697E+19	5.0639E+10
Pu-240	6.7891E-04	2.9794E-06	7.4761E+18	9.4834E+10
Pu-241	1.4633E-01	1.4205E-06	3.5496E+18	2.0440E+13
Am-241	9.8065E-05	2.8572E-08	7.1397E+16	1.3696E+10
Cm-242	2.4874E-02	7.5052E-09	1.8676E+16	3.4749E+12
Cm-244	1.6445E-03	2.0327E-08	5.0169E+16	2.2971E+11

RB Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	1.9374E+22	0.0000E+00	
Elemental I (atoms)	1.5562E+18	0.0000E+00	
Organic I (atoms)	1.1254E+18	0.0000E+00	
Aerosols (kg)	1.6836E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8688E-08

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Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.5280E-08
Total I (Ci)                                   4.1044E+03

DW to  RB Transport Group Inventory:
Time (h) =   2.3000  Leakage Transport

Noble gases (atoms)      1.9391E+22
Elemental I (atoms)      1.5922E+18
Organic I (atoms)        1.1407E+18
Aerosols (kg)            1.6764E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   2.3000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   2.3000       Ci           kg          Atoms       Decay
Co-58                  1.7446E-10  5.4864E-18  5.6965E+07  1.6082E+04
Co-60                  2.0899E-10  1.8488E-16  1.8557E+09  1.9262E+04
Kr-85                  1.6488E-02  4.2025E-08  2.9774E+17  1.3723E+12
Kr-85m                 1.9039E-01  2.3135E-11  1.6391E+14  1.6872E+13
Kr-87                  1.5569E-01  5.4964E-12  3.8046E+13  1.6337E+13
Kr-88                  4.2197E-01  3.3652E-11  2.3029E+14  3.8816E+13
Rb-86                  2.5820E-08  3.1732E-16  2.2220E+09  3.6346E+06
Sr-89                  2.9563E-07  1.0176E-14  6.8855E+10  2.7253E+07
Sr-90                  3.8921E-08  2.8533E-13  1.9092E+12  3.5872E+06
Sr-91                  3.1132E-07  8.5881E-17  5.6834E+08  2.9598E+07
Sr-92                  2.1308E-07  1.6952E-17  1.1097E+08  2.1949E+07
Y-90                   9.7296E-10  1.7883E-18  1.1966E+07  7.4407E+04
Y-91                   3.8454E-09  1.5680E-16  1.0377E+09  3.5206E+05
Y-92                   6.3538E-08  6.6031E-18  4.3223E+07  4.5954E+06
Y-93                   3.6203E-09  1.0851E-18  7.0266E+06  3.4356E+05
Zr-95                  4.5817E-09  2.1327E-16  1.3520E+09  4.2236E+05
Zr-97                  4.0406E-09  2.1136E-18  1.3122E+07  3.7894E+05
Nb-95                  4.5955E-09  1.1752E-16  7.4499E+08  4.2353E+05
Mo-99                  5.7301E-08  1.1947E-16  7.2675E+08  5.3046E+06
Tc-99m                 5.1698E-08  9.8318E-18  5.9807E+07  4.7418E+06
Ru-103                 5.0850E-08  1.5756E-15  9.2119E+09  4.6880E+06
Ru-105                 2.5362E-08  3.7729E-18  2.1639E+07  2.4997E+06
Ru-106                 2.2152E-08  6.6213E-15  3.7617E+10  2.0417E+06
Rh-105                 3.3877E-08  4.0136E-17  2.3020E+08  3.1253E+06
Sb-127                 5.7473E-08  2.1521E-16  1.0205E+09  5.3138E+06
Sb-129                 1.2492E-07  2.2214E-17  1.0370E+08  1.2336E+07
Te-127                 5.7723E-08  2.1872E-17  1.0371E+08  5.3023E+06
Te-127m                9.9134E-09  1.0510E-15  4.9835E+09  9.1365E+05
Te-129                 1.4428E-07  6.8894E-18  3.2162E+07  1.3472E+07
Te-129m                3.2664E-08  1.0843E-15  5.0617E+09  3.0105E+06
Te-131m                1.1653E-07  1.4613E-16  6.7177E+08  1.0845E+07
Te-132                 8.6388E-07  2.8455E-15  1.2982E+10  7.9918E+07
I-131                  8.0818E-04  6.5189E-12  2.9968E+13  1.0404E+11
I-132                  6.7969E-04  6.5848E-14  3.0041E+11  1.0147E+11
I-133                  1.5704E-03  1.3863E-12  6.2772E+12  2.0588E+11
I-134                  3.1366E-04  1.1758E-14  5.2842E+10  6.9762E+10
I-135                  1.2590E-03  3.5849E-13  1.5992E+12  1.7253E+11
Xe-133                 1.7497E+00  9.3475E-09  4.2325E+16  1.4590E+14
Xe-135                 6.7756E-01  2.6532E-10  1.1836E+15  5.7704E+13
Cs-134                 2.8343E-06  2.1907E-12  9.8451E+12  3.9860E+08
Cs-136                 8.4373E-07  1.1512E-14  5.0976E+10  1.1882E+08
Cs-137                 2.2810E-06  2.6224E-11  1.1527E+14  3.2077E+08
Ba-139                 1.4800E-07  9.0481E-18  3.9201E+07  1.7080E+07
Ba-140                 4.5445E-07  6.2076E-15  2.6702E+10  4.1924E+07
La-140                 1.5350E-08  2.7617E-17  1.1880E+08  1.1332E+06
La-141                 2.8622E-09  5.0610E-19  2.1616E+06  2.8463E+05
La-142                 1.4943E-09  1.0439E-19  4.4269E+05  1.6819E+05
Ce-141                 1.0771E-08  3.7802E-16  1.6145E+09  9.9294E+05
Ce-143                 9.9243E-09  1.4944E-17  6.2935E+07  9.2285E+05
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Ce-144	8.6548E-09	2.7135E-15	1.1348E+10	7.9770E+05
Pr-143	4.0653E-09	6.0371E-17	2.5424E+08	3.7417E+05
Nd-147	1.6801E-09	2.0767E-17	8.5078E+07	1.5501E+05
Np-239	1.1925E-07	5.1401E-16	1.2952E+09	1.1047E+07
Pu-238	3.4948E-11	2.0414E-15	5.1653E+09	3.2209E+03
Pu-239	3.0616E-12	4.9257E-14	1.2411E+11	2.8216E+02
Pu-240	5.7331E-12	2.5160E-14	6.3132E+10	5.2839E+02
Pu-241	1.2357E-09	1.1996E-14	2.9975E+10	1.1389E+05
Am-241	8.2816E-13	2.4129E-16	6.0295E+08	7.6318E+01
Cm-242	2.1005E-10	6.3378E-17	1.5772E+08	1.9361E+04
Cm-244	1.3887E-11	1.7165E-16	4.2366E+08	1.2799E+03

CR Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	3.4168E+17	0.0000E+00	
Elemental I (atoms)	2.9597E+13	0.0000E+00	
Organic I (atoms)	8.0993E+12	0.0000E+00	
Aerosols (kg)	2.8945E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8825E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.7641E-13
Total I (Ci)			4.6309E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5257E+17
Elemental I (atoms)	0.0000E+00	5.0318E+13
Organic I (atoms)	0.0000E+00	1.1543E+13
Aerosols (kg)	0.0000E+00	4.8802E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.4114E+17
Elemental I (atoms)	9.9886E+13	3.0893E+12
Organic I (atoms)	2.4816E+13	7.6752E+11
Aerosols (kg)	9.6717E-11	2.9912E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	1.5176E+17	0.0000E+00
Elemental I (atoms)	2.3264E+13	0.0000E+00
Organic I (atoms)	4.1139E+12	0.0000E+00
Aerosols (kg)	2.2846E-11	0.0000E+00

EAB Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.0094E-03	1.0554E-02	3.3432E-03
Accumulated dose (rem)	3.0017E-02	1.5369E-01	3.4885E-02

LPZ Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.5986E-02	1.9634E-01	6.2194E-02
Accumulated dose (rem)	6.8549E-01	3.6186E+00	8.0013E-01

CR Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2506E-03	5.3303E-02	2.9357E-03
Accumulated dose (rem)	9.0437E-03	5.4707E-01	2.6362E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	4.4412E-01	1.3967E-08	1.4502E+17	4.3433E+15
Co-60	5.3206E-01	4.7069E-07	4.7242E+18	5.2009E+15

Kr-85	1.3587E+06	3.4631E+00	2.4536E+25	2.2335E+20
Kr-85m	1.5448E+07	1.8772E-03	1.3299E+22	2.8387E+21
Kr-87	1.2149E+07	4.2891E-04	2.9689E+21	3.0340E+21
Kr-88	3.3935E+07	2.7063E-03	1.8520E+22	6.6670E+21
Rb-86	1.5295E+01	1.8797E-07	1.3163E+18	3.1422E+17
Sr-89	7.5260E+02	2.5905E-05	1.7528E+20	7.3614E+18
Sr-90	9.9088E+01	7.2641E-04	4.8606E+21	9.6858E+17
Sr-91	7.8681E+02	2.1705E-07	1.4364E+18	8.3549E+18
Sr-92	5.2877E+02	4.2068E-08	2.7537E+17	6.9394E+18
Y-90	1.5582E+00	2.8640E-09	1.9164E+16	1.0137E+16
Y-91	9.6360E+00	3.9292E-07	2.6003E+18	9.3435E+16
Y-92	6.1968E+01	6.4400E-09	4.2155E+16	1.1153E+17
Y-93	9.1537E+00	2.7437E-09	1.7766E+16	9.6722E+16
Zr-95	1.1664E+01	5.4294E-07	3.4418E+18	1.1407E+17
Zr-97	1.0245E+01	5.3590E-09	3.3271E+16	1.0490E+17
Nb-95	1.1700E+01	2.9920E-07	1.8966E+18	1.1436E+17
Mo-99	1.4573E+02	3.0384E-07	1.8483E+18	1.4415E+18
Tc-99m	1.3159E+02	2.5025E-08	1.5223E+17	1.2835E+18
Ru-103	1.2945E+02	4.0109E-06	2.3451E+19	1.2664E+18
Ru-105	6.3567E+01	9.4565E-09	5.4237E+16	7.4269E+17
Ru-106	5.6395E+01	1.6857E-05	9.5767E+19	5.5131E+17
Rh-105	8.6203E+01	1.0213E-07	5.8575E+17	8.4556E+17
Sb-127	1.4621E+02	5.4749E-07	2.5961E+18	1.4413E+18
Sb-129	3.1296E+02	5.5653E-08	2.5981E+17	3.6749E+18
Te-127	1.4694E+02	5.5679E-08	2.6402E+17	1.4336E+18
Te-127m	2.5238E+01	2.6756E-06	1.2687E+19	2.4670E+17
Te-129	3.6375E+02	1.7369E-08	8.1086E+16	3.8429E+18
Te-129m	8.3157E+01	2.7604E-06	1.2886E+19	8.1289E+17
Te-131m	2.9597E+02	3.7117E-07	1.7063E+18	2.9697E+18
Te-132	2.1974E+03	7.2379E-06	3.3021E+19	2.1695E+19
I-131	3.9528E+04	3.1884E-04	1.4657E+21	1.4963E+20
I-132	4.9985E+04	4.8425E-06	2.2092E+19	2.1275E+20
I-133	7.6518E+04	6.7547E-05	3.0585E+20	3.0376E+20
I-134	1.4168E+04	5.3111E-07	2.3869E+18	2.0581E+20
I-135	6.0904E+04	1.7342E-05	7.7361E+19	2.7104E+20
Xe-133	1.4441E+08	7.7147E-01	3.4932E+24	2.3810E+22
Xe-135	5.8321E+07	2.2838E-02	1.0188E+23	9.9048E+21
Cs-134	1.6792E+03	1.2979E-03	5.8328E+21	3.4412E+19
Cs-136	4.9977E+02	6.8190E-06	3.0195E+19	1.0278E+19
Cs-137	1.3514E+03	1.5537E-02	6.8295E+22	2.7692E+19
Ba-139	3.5831E+02	2.1906E-08	9.4905E+16	6.3228E+18
Ba-140	1.1567E+03	1.5800E-05	6.7964E+19	1.1336E+19
La-140	2.2094E+01	3.9749E-08	1.7098E+17	1.2158E+17
La-141	7.1594E+00	1.2659E-09	5.4069E+15	8.5635E+16
La-142	3.6370E+00	2.5407E-10	1.0775E+15	6.0153E+16
Ce-141	2.7431E+01	9.6271E-07	4.1118E+18	2.6825E+17
Ce-143	2.5213E+01	3.7967E-08	1.5989E+17	2.5238E+17
Ce-144	2.2034E+01	6.9082E-06	2.8890E+19	2.1540E+17
Pr-143	1.0321E+01	1.5327E-07	6.4545E+17	1.0072E+17
Nd-147	4.2761E+00	5.2857E-08	2.1654E+17	4.1923E+16
Np-239	3.0321E+02	1.3070E-06	3.2933E+18	3.0052E+18
Pu-238	8.8972E-02	5.1971E-06	1.3150E+19	8.6969E+14
Pu-239	7.7946E-03	1.2540E-04	3.1598E+20	7.6180E+13
Pu-240	1.4596E-02	6.4054E-05	1.6073E+20	1.4267E+14
Pu-241	3.1459E+00	3.0539E-05	7.6311E+19	3.0751E+16
Am-241	2.1081E-03	6.1422E-07	1.5348E+18	2.0602E+13
Cm-242	5.3476E-01	1.6135E-07	4.0151E+17	5.2283E+15
Cm-244	3.5355E-02	4.3701E-07	1.0786E+18	3.4560E+14

DW Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.8166E+25	0.0000E+00	
Elemental I (atoms)	4.4213E+19	4.8566E+22	
Organic I (atoms)	1.4771E+21	0.0000E+00	
Aerosols (kg)	1.7959E-02	4.8970E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.2793E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5795E-05
Total I (Ci)			2.4110E+05

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport

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Noble gases (atoms)      2.1152E+22
Elemental I (atoms)      1.5950E+18
Organic I (atoms)        1.2331E+18
Aerosols (kg)            1.6777E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.6038E+21
Elemental I (atoms)    0.0000E+00  8.3805E+17
Organic I (atoms)      0.0000E+00  5.6872E+17
Aerosols (kg)          0.0000E+00  8.8234E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.6038E+21
Elemental I (atoms)    0.0000E+00  8.3805E+17
Organic I (atoms)      0.0000E+00  5.6872E+17
Aerosols (kg)          0.0000E+00  8.8234E-04

RB Compartment Nuclide Inventory:

Time (h) =   2.4000       Ci           kg         Atoms      Decay
Co-58                  2.0691E-02  6.5069E-10  6.7561E+15  3.1621E+12
Co-60                  2.4787E-02  2.1928E-08  2.2009E+17  3.7872E+12
Kr-85                  1.0196E+03  2.5988E-03  1.8412E+22  1.0059E+17
Kr-85m                 1.1593E+04  1.4087E-06  9.9802E+18  1.2418E+18
Kr-87                  9.1169E+03  3.2186E-07  2.2279E+18  1.2247E+18
Kr-88                  2.5465E+04  2.0308E-06  1.3898E+19  2.8661E+18
Rb-86                  1.4801E+00  1.8190E-08  1.2738E+17  3.2843E+14
Sr-89                  3.5061E+01  1.2068E-06  8.1660E+18  5.3589E+15
Sr-90                  4.6162E+00  3.3842E-05  2.2644E+20  7.0530E+14
Sr-91                  3.6655E+01  1.0112E-08  6.6917E+16  5.8760E+15
Sr-92                  2.4634E+01  1.9598E-09  1.2829E+16  4.4745E+15
Y-90                   1.0572E-01  1.9432E-10  1.3002E+15  1.2058E+13
Y-91                   4.5437E-01  1.8528E-08  1.2261E+17  6.8795E+13
Y-92                   6.3394E+00  6.5883E-10  4.3125E+15  6.1155E+14
Y-93                   4.2645E-01  1.2782E-10  8.2769E+14  6.8165E+13
Zr-95                  5.4339E-01  2.5294E-08  1.6034E+17  8.3047E+13
Zr-97                  4.7727E-01  2.4966E-10  1.5500E+15  7.4907E+13
Nb-95                  5.4505E-01  1.3939E-08  8.8359E+16  8.3274E+13
Mo-99                  6.7890E+00  1.4155E-08  8.6105E+16  1.0444E+15
Tc-99m                 6.1302E+00  1.1658E-09  7.0918E+15  9.3274E+14
Ru-103                 6.0306E+00  1.8686E-07  1.0925E+18  9.2183E+14
Ru-105                 2.9614E+00  4.4055E-10  2.5267E+15  5.0208E+14
Ru-106                 2.6273E+00  7.8531E-07  4.4615E+18  4.0144E+14
Rh-105                 4.0160E+00  4.7579E-09  2.7289E+16  6.1474E+14
Sb-127                 6.8115E+00  2.5506E-08  1.2095E+17  1.0458E+15
Sb-129                 1.4580E+01  2.5927E-09  1.2104E+16  2.4792E+15
Te-127                 6.8456E+00  2.5939E-09  1.2300E+16  1.0428E+15
Te-127m                1.1758E+00  1.2465E-07  5.9107E+17  1.7964E+14
Te-129                 1.6946E+01  8.0919E-10  3.7776E+15  2.6796E+15
Te-129m                3.8740E+00  1.2860E-07  6.0034E+17  5.9191E+14
Te-131m                1.3789E+01  1.7292E-08  7.9491E+16  2.1388E+15
Te-132                 1.0237E+02  3.3719E-07  1.5383E+18  1.5731E+16
I-131                  7.0257E+02  5.6671E-06  2.6052E+19  1.4822E+17
I-132                  6.6744E+02  6.4661E-08  2.9500E+17  1.6624E+17
I-133                  1.3608E+03  1.2013E-06  5.4393E+18  2.9503E+17
I-134                  2.5197E+02  9.4455E-09  4.2449E+16  1.2164E+17
I-135                  1.0831E+03  3.0843E-07  1.3758E+18  2.5099E+17
Xe-133                 1.0828E+05  5.7846E-04  2.6192E+21  1.0706E+19
Xe-135                 4.2923E+04  1.6808E-05  7.4979E+19  4.3383E+18
Cs-134                 1.6250E+02  1.2559E-04  5.6444E+20  3.6007E+16
Cs-136                 4.8362E+01  6.5987E-07  2.9219E+18  1.0738E+16
Cs-137                 1.3078E+02  1.5035E-03  6.6089E+21  2.8977E+16
Ba-139                 1.6693E+01  1.0205E-09  4.4214E+15  3.6285E+15
Ba-140                 5.3887E+01  7.3608E-07  3.1663E+18  8.2454E+15
La-140                 1.6416E+00  2.9534E-09  1.2704E+16  1.7519E+14
La-141                 3.3354E-01  5.8977E-11  2.5189E+14  5.7336E+13
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La-142	1.6944E-01	1.1836E-11	5.0197E+13	3.5394E+13
Ce-141	1.2776E+00	4.4838E-08	1.9150E+17	1.9526E+14
Ce-143	1.1746E+00	1.7688E-09	7.4488E+15	1.8194E+14
Ce-144	1.0265E+00	3.2183E-07	1.3459E+18	1.5684E+14
Pr-143	4.8185E-01	7.1557E-09	3.0134E+16	7.3488E+13
Nd-147	1.9921E-01	2.4625E-09	1.0088E+16	3.0489E+13
Np-239	1.4126E+01	6.0889E-08	1.5342E+17	2.1756E+15
Pu-238	4.1450E-03	2.4212E-07	6.1263E+17	6.3329E+11
Pu-239	3.6313E-04	5.8422E-06	1.4721E+19	5.5476E+10
Pu-240	6.7998E-04	2.9841E-06	7.4878E+18	1.0389E+11
Pu-241	1.4656E-01	1.4227E-06	3.5551E+18	2.2392E+13
Am-241	9.8221E-05	2.8618E-08	7.1511E+16	1.5004E+10
Cm-242	2.4913E-02	7.5168E-09	1.8705E+16	3.8068E+12
Cm-244	1.6471E-03	2.0359E-08	5.0248E+16	2.5165E+11

RB Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.1132E+22	0.0000E+00	
Elemental I (atoms)	1.5565E+18	0.0000E+00	
Organic I (atoms)	1.2160E+18	0.0000E+00	
Aerosols (kg)	1.6849E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8749E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5308E-08
Total I (Ci)			4.0660E+03

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport
Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5950E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6777E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	1.8171E-10	5.7146E-18	5.9335E+07	1.8502E+04
Co-60	2.1769E-10	1.9258E-16	1.9329E+09	2.2161E+04
Kr-85	1.7627E-02	4.4929E-08	3.1832E+17	1.6071E+12
Kr-85m	2.0042E-01	2.4354E-11	1.7254E+14	1.9562E+13
Kr-87	1.5762E-01	5.5645E-12	3.8517E+13	1.8494E+13
Kr-88	4.4026E-01	3.5110E-11	2.4027E+14	4.4753E+13
Rb-86	2.5924E-08	3.1860E-16	2.2310E+09	3.9799E+06
Sr-89	3.0792E-07	1.0599E-14	7.1717E+10	3.1355E+07
Sr-90	4.0542E-08	2.9721E-13	1.9887E+12	4.1272E+06
Sr-91	3.2192E-07	8.8806E-17	5.8770E+08	3.3902E+07
Sr-92	2.1635E-07	1.7212E-17	1.1267E+08	2.4867E+07
Y-90	1.0502E-09	1.9302E-18	1.2916E+07	8.7817E+04
Y-91	4.0109E-09	1.6355E-16	1.0823E+09	4.0540E+05
Y-92	6.8540E-08	7.1231E-18	4.6626E+07	5.4597E+06
Y-93	3.7452E-09	1.1226E-18	7.2691E+06	3.9362E+05
Zr-95	4.7723E-09	2.2214E-16	1.4082E+09	4.8592E+05
Zr-97	4.1916E-09	2.1926E-18	1.3613E+07	4.3489E+05
Nb-95	4.7869E-09	1.2242E-16	7.7601E+08	4.8729E+05
Mo-99	5.9624E-08	1.2432E-16	7.5621E+08	6.0992E+06
Tc-99m	5.3838E-08	1.0239E-17	6.2283E+07	5.4549E+06
Ru-103	5.2963E-08	1.6410E-15	9.5948E+09	5.3935E+06
Ru-105	2.6008E-08	3.8691E-18	2.2191E+07	2.8489E+06
Ru-106	2.3074E-08	6.8969E-15	3.9183E+10	2.3490E+06
Rh-105	3.5270E-08	4.1786E-17	2.3966E+08	3.5949E+06
Sb-127	5.9821E-08	2.2401E-16	1.0622E+09	6.1110E+06
Sb-129	1.2805E-07	2.2771E-17	1.0630E+08	1.4055E+07
Te-127	6.0121E-08	2.2781E-17	1.0802E+08	6.1002E+06

Te-127m	1.0326E-08	1.0947E-15	5.1910E+09	1.0512E+06
Te-129	1.4883E-07	7.1067E-18	3.3176E+07	1.5416E+07
Te-129m	3.4024E-08	1.1294E-15	5.2724E+09	3.4637E+06
Te-131m	1.2110E-07	1.5186E-16	6.9813E+08	1.2460E+07
Te-132	8.9905E-07	2.9614E-15	1.3510E+10	9.1899E+07
I-131	8.2109E-04	6.6230E-12	3.0446E+13	1.1498E+11
I-132	6.7411E-04	6.5307E-14	2.9794E+11	1.1059E+11
I-133	1.5908E-03	1.4043E-12	6.3584E+12	2.2710E+11
I-134	2.9455E-04	1.1042E-14	4.9622E+10	7.3845E+10
I-135	1.2662E-03	3.6054E-13	1.6083E+12	1.8948E+11
Xe-133	1.8697E+00	9.9886E-09	4.5228E+16	1.7081E+14
Xe-135	7.2006E-01	2.8197E-10	1.2578E+15	6.7332E+13
Cs-134	2.8462E-06	2.1998E-12	9.8862E+12	4.3651E+08
Cs-136	8.4707E-07	1.1558E-14	5.1178E+10	1.3010E+08
Cs-137	2.2905E-06	2.6334E-11	1.1575E+14	3.5128E+08
Ba-139	1.4660E-07	8.9626E-18	3.8830E+07	1.9083E+07
Ba-140	4.7326E-07	6.4645E-15	2.7807E+10	4.8229E+07
La-140	1.6664E-08	2.9980E-17	1.2896E+08	1.3445E+06
La-141	2.9293E-09	5.1796E-19	2.2122E+06	3.2399E+05
La-142	1.4881E-09	1.0395E-19	4.4085E+05	1.8846E+05
Ce-141	1.1219E-08	3.9373E-16	1.6816E+09	1.1424E+06
Ce-143	1.0316E-08	1.5534E-17	6.5418E+07	1.0604E+06
Ce-144	9.0150E-09	2.8265E-15	1.1820E+10	9.1778E+05
Pr-143	4.2357E-09	6.2901E-17	2.6489E+08	4.3057E+05
Nd-147	1.7495E-09	2.1626E-17	8.8597E+07	1.7832E+05
Np-239	1.2406E-07	5.3475E-16	1.3474E+09	1.2701E+07
Pu-238	3.6403E-11	2.1264E-15	5.3804E+09	3.7058E+03
Pu-239	3.1891E-12	5.1308E-14	1.2928E+11	3.2464E+02
Pu-240	5.9718E-12	2.6208E-14	6.5761E+10	6.0794E+02
Pu-241	1.2871E-09	1.2495E-14	3.1223E+10	1.3103E+05
Am-241	8.6266E-13	2.5135E-16	6.2807E+08	8.7808E+01
Cm-242	2.1879E-10	6.6016E-17	1.6428E+08	2.2275E+04
Cm-244	1.4465E-11	1.7880E-16	4.4130E+08	1.4726E+03

CR Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	3.6525E+17	0.0000E+00	
Elemental I (atoms)	2.9735E+13	0.0000E+00	
Organic I (atoms)	8.5218E+12	0.0000E+00	
Aerosols (kg)	2.9081E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9400E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.8285E-13
Total I (Ci)			4.6467E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6823E+17
Elemental I (atoms)	0.0000E+00	5.2640E+13
Organic I (atoms)	0.0000E+00	1.2553E+13
Aerosols (kg)	0.0000E+00	5.1028E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.7637E+17
Elemental I (atoms)	1.0495E+14	3.2460E+12
Organic I (atoms)	2.7021E+13	8.3569E+11
Aerosols (kg)	1.0158E-10	3.1415E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	1.7904E+17	0.0000E+00
Elemental I (atoms)	2.5557E+13	0.0000E+00
Organic I (atoms)	4.7560E+12	0.0000E+00
Aerosols (kg)	2.5086E-11	0.0000E+00

EAB Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.2159E-02	7.3132E-02	2.4470E-02
Accumulated dose (rem)	5.2176E-02	2.2683E-01	5.9355E-02

LPZ Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.1224E-01	1.3605E+00	4.5522E-01
Accumulated dose (rem)	1.0977E+00	4.9791E+00	1.2553E+00

CR Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.8801E-03	3.4265E-01	1.9704E-02
Accumulated dose (rem)	1.7924E-02	8.8972E-01	4.6066E-02

DW Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	7.3351E-02	2.3068E-09	2.3951E+16	4.3574E+15
Co-60	8.7895E-02	7.7756E-08	7.8043E+17	5.2178E+15
Kr-85	1.3579E+06	3.4611E+00	2.4521E+25	3.3190E+20
Kr-85m	1.4070E+07	1.7097E-03	1.2113E+22	4.0173E+21
Kr-87	8.7549E+06	3.0908E-04	2.1394E+21	3.8619E+21
Kr-88	2.9294E+07	2.3362E-03	1.5988E+22	9.1890E+21
Rb-86	2.5243E+00	3.1024E-08	2.1724E+17	3.1470E+17
Sr-89	1.2429E+02	4.2780E-06	2.8947E+19	7.3853E+18
Sr-90	1.6369E+01	1.2000E-04	8.0297E+20	9.7173E+17
Sr-91	1.2441E+02	3.4321E-08	2.2713E+17	8.3795E+18
Sr-92	7.4925E+01	5.9609E-09	3.9019E+16	6.9553E+18
Y-90	3.6183E-01	6.6506E-10	4.4501E+15	1.0192E+16
Y-91	1.6072E+00	6.5536E-08	4.3370E+17	9.3742E+16
Y-92	1.8153E+01	1.8866E-09	1.2349E+16	1.1392E+17
Y-93	1.4512E+00	4.3497E-10	2.8166E+15	9.7008E+16
Zr-95	1.9264E+00	8.9669E-08	5.6842E+17	1.1444E+17
Zr-97	1.6513E+00	8.6379E-10	5.3627E+15	1.0522E+17
Nb-95	1.9327E+00	4.9427E-08	3.1332E+17	1.1473E+17
Mo-99	2.3923E+01	4.9879E-08	3.0341E+17	1.4461E+18
Tc-99m	2.1705E+01	4.1277E-09	2.5109E+16	1.2876E+18
Ru-103	2.1375E+01	6.6230E-07	3.8723E+18	1.2705E+18
Ru-105	9.5622E+00	1.4225E-09	8.1587E+15	7.4464E+17
Ru-106	9.3160E+00	2.7846E-06	1.5820E+19	5.5310E+17
Rh-105	1.4191E+01	1.6813E-08	9.6431E+16	8.4829E+17
Sb-127	2.4045E+01	9.0039E-08	4.2695E+17	1.4460E+18
Sb-129	4.6956E+01	8.3501E-09	3.8981E+16	3.6845E+18
Te-127	2.4260E+01	9.1925E-09	4.3589E+16	1.4383E+18
Te-127m	4.1693E+00	4.4201E-07	2.0960E+18	2.4750E+17
Te-129	5.6505E+01	2.6981E-09	1.2596E+16	3.8539E+18
Te-129m	1.3736E+01	4.5596E-07	2.1286E+18	8.1554E+17
Te-131m	4.8221E+01	6.0473E-08	2.7800E+17	2.9790E+18
Te-132	3.6108E+02	1.1893E-06	5.4261E+18	2.1765E+19
I-131	3.3235E+04	2.6808E-04	1.2324E+21	1.5242E+20
I-132	3.5284E+04	3.4183E-06	1.5595E+19	2.1600E+20
I-133	6.3198E+04	5.5789E-05	2.5261E+20	3.0913E+20
I-134	7.4287E+03	2.7847E-07	1.2515E+18	2.0662E+20
I-135	4.8189E+04	1.3722E-05	6.1210E+19	2.7522E+20
Xe-133	1.4384E+08	7.6846E-01	3.4795E+24	3.5328E+22
Xe-135	5.5682E+07	2.1804E-02	9.7264E+22	1.4459E+22
Cs-134	2.7740E+02	2.1440E-04	9.6355E+20	3.4465E+19
Cs-136	8.2452E+01	1.1250E-06	4.9815E+18	1.0294E+19
Cs-137	2.2325E+02	2.5666E-03	1.1282E+22	2.7735E+19
Ba-139	4.3775E+01	2.6762E-09	1.1595E+16	6.3330E+18
Ba-140	1.9083E+02	2.6066E-06	1.1212E+19	1.1372E+19
La-140	5.5759E+00	1.0032E-08	4.3152E+16	1.2238E+17
La-141	1.0640E+00	1.8813E-10	8.0352E+14	8.5854E+16
La-142	4.5876E-01	3.2048E-11	1.3591E+14	6.0258E+16
Ce-141	4.5297E+00	1.5898E-07	6.7899E+17	2.6912E+17
Ce-143	4.1130E+00	6.1935E-09	2.6083E+16	2.5317E+17
Ce-144	3.6397E+00	1.1412E-06	4.7724E+18	2.1610E+17
Pr-143	1.7081E+00	2.5366E-08	1.0682E+17	1.0105E+17
Nd-147	7.0529E-01	8.7181E-09	3.5716E+16	4.2058E+16

Np-239	4.9723E+01	2.1433E-07	5.4005E+17	3.0148E+18
Pu-238	1.4698E-02	8.5856E-07	2.1724E+18	8.7252E+14
Pu-239	1.2878E-03	2.0718E-05	5.2203E+19	7.6428E+13
Pu-240	2.4112E-03	1.0582E-05	2.6552E+19	1.4314E+14
Pu-241	5.1970E-01	5.0450E-06	1.2606E+19	3.0851E+16
Am-241	3.4831E-04	1.0148E-07	2.5359E+17	2.0669E+13
Cm-242	8.8332E-02	2.6652E-08	6.6323E+16	5.2453E+15
Cm-244	5.8406E-03	7.2193E-08	1.7818E+17	3.4672E+14

DW Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8128E+25	0.0000E+00	
Elemental I (atoms)	4.3752E+19	4.8566E+22	
Organic I (atoms)	1.4617E+21	0.0000E+00	
Aerosols (kg)	2.9667E-03	4.8985E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0681E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3075E-05
Total I (Ci)			1.8733E+05

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4310E+17
Organic I (atoms)	0.0000E+00	7.3742E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4310E+17
Organic I (atoms)	0.0000E+00	7.3742E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

RB Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.0763E-02	6.5296E-10	6.7796E+15	4.8199E+12
Co-60	2.4879E-02	2.2010E-08	2.2091E+17	5.7735E+12
Kr-85	1.5290E+03	3.8971E-03	2.7610E+22	2.0582E+17
Kr-85m	1.5843E+04	1.9251E-06	1.3639E+19	2.3812E+18
Kr-87	9.8578E+03	3.4802E-07	2.4090E+18	2.0191E+18
Kr-88	3.2985E+04	2.6305E-06	1.8002E+19	5.2998E+18
Rb-86	1.4814E+00	1.8206E-08	1.2749E+17	4.4681E+14
Sr-89	3.5180E+01	1.2109E-06	8.1937E+18	8.1681E+15
Sr-90	4.6334E+00	3.3968E-05	2.2729E+20	1.0752E+15
Sr-91	3.5216E+01	9.7148E-09	6.4290E+16	8.7500E+15
Sr-92	2.1208E+01	1.6873E-09	1.1045E+16	6.3044E+15
Y-90	1.3533E-01	2.4875E-10	1.6644E+15	2.1495E+13
Y-91	4.6039E-01	1.8773E-08	1.2424E+17	1.0535E+14
Y-92	8.2083E+00	8.5305E-10	5.5839E+15	1.1792E+15
Y-93	4.1077E-01	1.2312E-10	7.9726E+14	1.0164E+14
Zr-95	5.4527E-01	2.5382E-08	1.6090E+17	1.2659E+14
Zr-97	4.6741E-01	2.4450E-10	1.5180E+15	1.1269E+14
Nb-95	5.4708E-01	1.3991E-08	8.8689E+16	1.2695E+14
Mo-99	6.7715E+00	1.4119E-08	8.5884E+16	1.5867E+15
Tc-99m	6.1437E+00	1.1684E-09	7.1073E+15	1.4209E+15
Ru-103	6.0504E+00	1.8747E-07	1.0961E+18	1.4050E+15
Ru-105	2.7067E+00	4.0266E-10	2.3094E+15	7.2861E+14
Ru-106	2.6370E+00	7.8820E-07	4.4780E+18	6.1197E+14
Rh-105	4.0170E+00	4.7592E-09	2.7296E+16	9.3580E+14

Sb-127	6.8062E+00	2.5486E-08	1.2085E+17	1.5904E+15
Sb-129	1.3291E+01	2.3636E-09	1.1034E+16	3.5931E+15
Te-127	6.8670E+00	2.6020E-09	1.2338E+16	1.5892E+15
Te-127m	1.1802E+00	1.2512E-07	5.9328E+17	2.7386E+14
Te-129	1.5994E+01	7.6373E-10	3.5654E+15	3.9652E+15
Te-129m	3.8881E+00	1.2906E-07	6.0251E+17	9.0234E+14
Te-131m	1.3650E+01	1.7117E-08	7.8690E+16	3.2361E+15
Te-132	1.0221E+02	3.3666E-07	1.5359E+18	2.3913E+16
I-131	7.1438E+02	5.7623E-06	2.6490E+19	2.0494E+17
I-132	5.8831E+02	5.6995E-08	2.6003E+17	2.1634E+17
I-133	1.3592E+03	1.1998E-06	5.4327E+18	4.0393E+17
I-134	1.5977E+02	5.9890E-09	2.6915E+16	1.3785E+17
I-135	1.0364E+03	2.9511E-07	1.3164E+18	3.3583E+17
Xe-133	1.6188E+05	8.6484E-04	3.9159E+21	2.1864E+19
Xe-135	6.1931E+04	2.4251E-05	1.0818E+20	8.6829E+18
Cs-134	1.6279E+02	1.2582E-04	5.6544E+20	4.9011E+16
Cs-136	4.8385E+01	6.6018E-07	2.9233E+18	1.4606E+16
Cs-137	1.3101E+02	1.5062E-03	6.6207E+21	3.9442E+16
Ba-139	1.2391E+01	7.5753E-10	3.2820E+15	4.7831E+15
Ba-140	5.4015E+01	7.3782E-07	3.1738E+18	1.2561E+16
La-140	2.1843E+00	3.9299E-09	1.6904E+16	3.2446E+14
La-141	3.0116E-01	5.3253E-11	2.2744E+14	8.2698E+13
La-142	1.2986E-01	9.0714E-12	3.8471E+13	4.7294E+13
Ce-141	1.2818E+00	4.4987E-08	1.9214E+17	2.9762E+14
Ce-143	1.1642E+00	1.7531E-09	7.3829E+15	2.7548E+14
Ce-144	1.0303E+00	3.2302E-07	1.3509E+18	2.3910E+14
Pr-143	4.8453E-01	7.1953E-09	3.0302E+16	1.1213E+14
Nd-147	1.9964E-01	2.4678E-09	1.0110E+16	4.6440E+13
Np-239	1.4075E+01	6.0668E-08	1.5287E+17	3.3034E+15
Pu-238	4.1604E-03	2.4302E-07	6.1492E+17	9.6545E+11
Pu-239	3.6451E-04	5.8644E-06	1.4777E+19	8.4576E+10
Pu-240	6.8251E-04	2.9952E-06	7.5157E+18	1.5838E+11
Pu-241	1.4711E-01	1.4280E-06	3.5684E+18	3.4137E+13
Am-241	9.8604E-05	2.8729E-08	7.1789E+16	2.2876E+10
Cm-242	2.5003E-02	7.5440E-09	1.8773E+16	5.8031E+12
Cm-244	1.6532E-03	2.0435E-08	5.0435E+16	3.8364E+11

RB Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	3.1669E+22	0.0000E+00	
Elemental I (atoms)	1.5586E+18	0.0000E+00	
Organic I (atoms)	1.7533E+18	0.0000E+00	
Aerosols (kg)	1.6879E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.9035E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5399E-08
Total I (Ci)			3.8580E+03

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.3392E-10	7.3566E-18	7.6383E+07	3.5381E+04
Co-60	2.8030E-10	2.4797E-16	2.4889E+09	4.2385E+04
Kr-85	2.7168E-02	6.9247E-08	4.9061E+17	3.4307E+12
Kr-85m	2.8151E-01	3.4207E-11	2.4235E+14	3.9299E+13
Kr-87	1.7516E-01	6.1839E-12	4.2805E+13	3.2243E+13

Kr-88	5.8611E-01	4.6742E-11	3.1987E+14	8.6903E+13
Rb-86	2.7437E-08	3.3720E-16	2.3613E+09	6.1141E+06
Sr-89	3.9636E-07	1.3643E-14	9.2314E+10	5.9956E+07
Sr-90	5.2203E-08	3.8270E-13	2.5607E+12	7.8935E+06
Sr-91	3.9676E-07	1.0945E-16	7.2433E+08	6.3137E+07
Sr-92	2.3894E-07	1.9010E-17	1.2443E+08	4.3441E+07
Y-90	1.6388E-09	3.0122E-18	2.0155E+07	1.9379E+05
Y-91	5.2063E-09	2.1229E-16	1.4049E+09	7.7923E+05
Y-92	1.0326E-07	1.0731E-17	7.0246E+07	1.2211E+07
Y-93	4.6280E-09	1.3872E-18	8.9824E+06	7.3419E+05
Zr-95	6.1433E-09	2.8596E-16	1.8128E+09	9.2921E+05
Zr-97	5.2661E-09	2.7547E-18	1.7102E+07	8.1934E+05
Nb-95	6.1637E-09	1.5763E-16	9.9921E+08	9.3197E+05
Mo-99	7.6292E-08	1.5907E-16	9.6761E+08	1.1620E+07
Tc-99m	6.9218E-08	1.3164E-17	8.0075E+07	1.0425E+07
Ru-103	6.8167E-08	2.1121E-15	1.2349E+10	1.0313E+07
Ru-105	3.0495E-08	4.5366E-18	2.6019E+07	5.1509E+06
Ru-106	2.9710E-08	8.8803E-15	5.0451E+10	4.4926E+06
Rh-105	4.5258E-08	5.3620E-17	3.0753E+08	6.8635E+06
Sb-127	7.6682E-08	2.8714E-16	1.3616E+09	1.1655E+07
Sb-129	1.4975E-07	2.6629E-17	1.2431E+08	2.5374E+07
Te-127	7.7367E-08	2.9316E-17	1.3901E+08	1.1663E+07
Te-127m	1.3296E-08	1.4096E-15	6.6842E+09	2.0105E+06
Te-129	1.8020E-07	8.6046E-18	4.0169E+07	2.8488E+07
Te-129m	4.3805E-08	1.4541E-15	6.7882E+09	6.6242E+06
Te-131m	1.5378E-07	1.9285E-16	8.8656E+08	2.3629E+07
Te-132	1.1515E-06	3.7929E-15	1.7304E+10	1.7519E+08
I-131	9.4271E-04	7.6040E-12	3.4956E+13	1.8584E+11
I-132	6.7190E-04	6.5093E-14	2.9697E+11	1.6490E+11
I-133	1.7940E-03	1.5837E-12	7.1707E+12	3.6313E+11
I-134	2.1088E-04	7.9049E-15	3.5526E+10	9.3993E+10
I-135	1.3679E-03	3.8952E-13	1.7376E+12	2.9541E+11
Xe-133	2.8733E+00	1.5350E-08	6.9505E+16	3.6395E+14
Xe-135	1.0708E+00	4.1932E-10	1.8705E+15	1.4048E+14
Cs-134	3.0151E-06	2.3304E-12	1.0473E+13	6.7093E+08
Cs-136	8.9618E-07	1.2228E-14	5.4145E+10	1.9983E+08
Cs-137	2.4265E-06	2.7897E-11	1.2263E+14	5.3994E+08
Ba-139	1.3960E-07	8.5347E-18	3.6976E+07	3.0767E+07
Ba-140	6.0856E-07	8.3127E-15	3.5757E+10	9.2164E+07
La-140	2.6708E-08	4.8051E-17	2.0669E+08	3.0464E+06
La-141	3.3931E-09	5.9997E-19	2.5625E+06	5.8165E+05
La-142	1.4630E-09	1.0220E-19	4.3344E+05	3.0895E+05
Ce-141	1.4441E-08	5.0680E-16	2.1646E+09	2.1844E+06
Ce-143	1.3117E-08	1.9752E-17	8.3180E+07	2.0125E+06
Ce-144	1.1607E-08	3.6393E-15	1.5220E+10	1.7553E+06
Pr-143	5.4625E-09	8.1120E-17	3.4162E+08	8.2427E+05
Nd-147	2.2492E-09	2.7803E-17	1.1390E+08	3.4072E+05
Np-239	1.5857E-07	6.8352E-16	1.7223E+09	2.4182E+07
Pu-238	4.6874E-11	2.7380E-15	6.9280E+09	7.0876E+03
Pu-239	4.1068E-12	6.6072E-14	1.6648E+11	6.2092E+02
Pu-240	7.6896E-12	3.3746E-14	8.4676E+10	1.1627E+03
Pu-241	1.6574E-09	1.6089E-14	4.0203E+10	2.5061E+05
Am-241	1.1110E-12	3.2369E-16	8.0884E+08	1.6795E+02
Cm-242	2.8170E-10	8.4995E-17	2.1151E+08	4.2600E+04
Cm-244	1.8626E-11	2.3023E-16	5.6823E+08	2.8164E+03

CR Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump		
Noble gases (atoms)	5.6259E+17	0.0000E+00		
Elemental I (atoms)	3.1610E+13	0.0000E+00		
Organic I (atoms)	1.2052E+13	0.0000E+00		
Aerosols (kg)	3.0905E-11	0.0000E+00		
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.4935E-13	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.4680E-13	
Total I (Ci)			4.9874E-03	

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.9407E+17
Elemental I (atoms)	0.0000E+00	6.7933E+13

Organic I (atoms)	0.0000E+00	2.0359E+13
Aerosols (kg)	0.0000E+00	6.5704E-11

Environment to CR Filtered Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.5950E+17
Elemental I (atoms)	1.3833E+14	4.2783E+12
Organic I (atoms)	4.4057E+13	1.3626E+12
Aerosols (kg)	1.3361E-10	4.1322E-12

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	3.9033E+17	0.0000E+00
Elemental I (atoms)	3.9722E+13	0.0000E+00
Organic I (atoms)	9.4616E+12	0.0000E+00
Aerosols (kg)	3.8927E-11	0.0000E+00

EAB Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2126E-02	1.5996E-01	5.7168E-02
Accumulated dose (rem)	1.0430E-01	3.8678E-01	1.1652E-01

LPZ Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	9.6973E-01	2.9757E+00	1.0635E+00
Accumulated dose (rem)	2.0675E+00	7.9549E+00	2.3189E+00

CR Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.1764E-02	7.0629E-01	4.4033E-02
Accumulated dose (rem)	3.9687E-02	1.5960E+00	9.0098E-02

DW Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	3.6468E-03	1.1469E-10	1.1908E+15	4.3601E+15
Co-60	4.3715E-03	3.8673E-09	3.8816E+16	5.2210E+15
Kr-85	1.3565E+06	3.4576E+00	2.4497E+25	5.1267E+20
Kr-85m	1.2041E+07	1.4632E-03	1.0366E+22	5.7527E+21
Kr-87	5.0710E+06	1.7902E-04	1.2392E+21	4.7604E+21
Kr-88	2.2927E+07	1.8284E-03	1.2513E+22	1.2649E+22
Rb-86	1.2536E-01	1.5406E-09	1.0788E+16	3.1479E+17
Sr-89	6.1780E+00	2.1265E-07	1.4389E+18	7.3898E+18
Sr-90	8.1415E-01	5.9685E-06	3.9937E+19	9.7232E+17
Sr-91	5.7525E+00	1.5869E-09	1.0502E+16	8.3839E+18
Sr-92	2.8855E+00	2.2957E-10	1.5027E+15	6.9579E+18
Y-90	2.6577E-02	4.8850E-11	3.2687E+14	1.0207E+16
Y-91	8.1135E-02	3.3084E-09	2.1894E+16	9.3801E+16
Y-92	1.3304E+00	1.3826E-10	9.0500E+14	1.1466E+17
Y-93	6.7390E-02	2.0199E-11	1.3080E+14	9.7060E+16
Zr-95	9.5768E-02	4.4579E-09	2.8259E+16	1.1451E+17
Zr-97	7.8829E-02	4.1236E-11	2.5601E+14	1.0528E+17
Nb-95	9.6128E-02	2.4583E-09	1.5583E+16	1.1480E+17
Mo-99	1.1774E+00	2.4549E-09	1.4933E+16	1.4469E+18
Tc-99m	1.0760E+00	2.0464E-10	1.2448E+15	1.2884E+18
Ru-103	1.0623E+00	3.2917E-08	1.9245E+17	1.2713E+18
Ru-105	4.0685E-01	6.0526E-11	3.4714E+14	7.4498E+17
Ru-106	4.6331E-01	1.3849E-07	7.8677E+17	5.5344E+17
Rh-105	7.0069E-01	8.3015E-10	4.7612E+15	8.4880E+17
Sb-127	1.1870E+00	4.4448E-09	2.1076E+16	1.4468E+18
Sb-129	1.9892E+00	3.5374E-10	1.6514E+15	3.6861E+18
Te-127	1.2050E+00	4.5661E-10	2.1652E+15	1.4392E+18
Te-127m	2.0737E-01	2.1985E-08	1.0425E+17	2.4765E+17
Te-129	2.5158E+00	1.2013E-10	5.6081E+14	3.8558E+18
Te-129m	6.8300E-01	2.2672E-08	1.0584E+17	8.1603E+17

Te-131m	2.3436E+00	2.9390E-09	1.3511E+16	2.9808E+18
Te-132	1.7800E+01	5.8632E-08	2.6749E+17	2.1778E+19
I-131	3.1924E+04	2.5750E-04	1.1838E+21	1.5672E+20
I-132	2.5188E+04	2.4402E-06	1.1133E+19	2.1995E+20
I-133	5.8927E+04	5.2019E-05	2.3554E+20	3.1718E+20
I-134	3.2480E+03	1.2175E-07	5.4718E+17	2.0728E+20
I-135	4.1830E+04	1.1911E-05	5.3133E+19	2.8115E+20
Xe-133	1.4291E+08	7.6348E-01	3.4570E+24	5.4425E+22
Xe-135	5.1544E+07	2.0184E-02	9.0037E+22	2.1597E+22
Cs-134	1.3797E+01	1.0663E-05	4.7922E+19	3.4475E+19
Cs-136	4.0919E+00	5.5831E-08	2.4722E+17	1.0297E+19
Cs-137	1.1104E+01	1.2766E-04	5.6114E+20	2.7743E+19
Ba-139	1.3167E+00	8.0500E-11	3.4877E+14	6.3344E+18
Ba-140	9.4696E+00	1.2935E-07	5.5640E+17	1.1379E+19
La-140	4.3451E-01	7.8173E-10	3.3626E+15	1.2261E+17
La-141	4.4361E-02	7.8441E-12	3.3502E+13	8.5890E+16
La-142	1.4555E-02	1.0167E-12	4.3120E+12	6.0273E+16
Ce-141	2.2514E-01	7.9014E-09	3.3747E+16	2.6928E+17
Ce-143	2.0032E-01	3.0164E-10	1.2703E+15	2.5332E+17
Ce-144	1.8101E-01	5.6752E-08	2.3734E+17	2.1623E+17
Pr-143	8.5206E-02	1.2653E-09	5.3287E+15	1.0111E+17
Nd-147	3.4987E-02	4.3247E-10	1.7717E+15	4.2084E+16
Np-239	2.4429E+00	1.0530E-08	2.6533E+16	3.0166E+18
Pu-238	7.3105E-04	4.2702E-08	1.0805E+17	8.7305E+14
Pu-239	6.4057E-05	1.0306E-06	2.5968E+18	7.6475E+13
Pu-240	1.1993E-04	5.2630E-07	1.3206E+18	1.4322E+14
Pu-241	2.5848E-02	2.5092E-07	6.2700E+17	3.0870E+16
Am-241	1.7329E-05	5.0489E-09	1.2616E+16	2.0682E+13
Cm-242	4.3926E-03	1.3253E-09	3.2981E+15	5.2485E+15
Cm-244	2.9049E-04	3.5906E-09	8.8620E+15	3.4693E+14

DW Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8068E+25	0.0000E+00	
Elemental I (atoms)	4.3051E+19	4.8566E+22	
Organic I (atoms)	1.4382E+21	0.0000E+00	
Aerosols (kg)	1.4754E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0146E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2270E-05
Total I (Ci)			1.6112E+05

DW to RB Transport Group Inventory:

Time (h) = 4.0000 Leakage Transport

Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.6387E+18
Organic I (atoms)	2.6914E+18
Aerosols (kg)	1.6814E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5140E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5140E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

RB Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	2.0769E-02	6.5315E-10	6.7816E+15	7.5864E+12
Co-60	2.4896E-02	2.2025E-08	2.2106E+17	9.0892E+12

Kr-85	2.3772E+03	6.0592E-03	4.2929E+22	4.7163E+17
Kr-85m	2.1101E+04	2.5641E-06	1.8166E+19	4.9191E+18
Kr-87	8.8865E+03	3.1373E-07	2.1716E+18	3.3151E+18
Kr-88	4.0178E+04	3.2042E-06	2.1928E+19	1.0345E+19
Rb-86	1.4796E+00	1.8184E-08	1.2733E+17	6.4403E+14
Sr-89	3.5185E+01	1.2111E-06	8.1947E+18	1.2855E+16
Sr-90	4.6367E+00	3.3991E-05	2.2745E+20	1.6927E+15
Sr-91	3.2761E+01	9.0375E-09	5.9808E+16	1.3276E+16
Sr-92	1.6433E+01	1.3074E-09	8.5580E+15	8.7983E+15
Y-90	1.8392E-01	3.3805E-10	2.2620E+15	4.2432E+13
Y-91	4.6753E-01	1.9064E-08	1.2616E+17	1.6712E+14
Y-92	1.0100E+01	1.0497E-09	6.8711E+15	2.3887E+15
Y-93	3.8380E-01	1.1504E-10	7.4490E+14	1.5455E+14
Zr-95	5.4541E-01	2.5388E-08	1.6094E+17	1.9924E+14
Zr-97	4.4894E-01	2.3484E-10	1.4580E+15	1.7372E+14
Nb-95	5.4746E-01	1.4000E-08	8.8750E+16	1.9986E+14
Mo-99	6.7055E+00	1.3981E-08	8.5046E+16	2.4845E+15
Tc-99m	6.1282E+00	1.1654E-09	7.0893E+15	2.2338E+15
Ru-103	6.0502E+00	1.8746E-07	1.0961E+18	2.2110E+15
Ru-105	2.3171E+00	3.4470E-10	1.9770E+15	1.0626E+15
Ru-106	2.6386E+00	7.8869E-07	4.4807E+18	9.6339E+14
Rh-105	3.9905E+00	4.7278E-09	2.7116E+16	1.4690E+15
Sb-127	6.7600E+00	2.5314E-08	1.2003E+17	2.4941E+15
Sb-129	1.1329E+01	2.0146E-09	9.4048E+15	5.2296E+15
Te-127	6.8628E+00	2.6004E-09	1.2331E+16	2.5005E+15
Te-127m	1.1810E+00	1.2521E-07	5.9370E+17	4.3114E+14
Te-129	1.4328E+01	6.8416E-10	3.1939E+15	5.9360E+15
Te-129m	3.8898E+00	1.2912E-07	6.0277E+17	1.4204E+15
Te-131m	1.3347E+01	1.6738E-08	7.6946E+16	5.0343E+15
Te-132	1.0137E+02	3.3392E-07	1.5234E+18	3.7474E+16
I-131	7.3202E+02	5.9046E-06	2.7144E+19	3.0142E+17
I-132	4.7803E+02	4.6311E-08	2.1128E+17	2.8698E+17
I-133	1.3519E+03	1.1934E-06	5.4034E+18	5.8476E+17
I-134	7.4513E+01	2.7932E-09	1.2553E+16	1.5276E+17
I-135	9.5962E+02	2.7325E-07	1.2189E+18	4.6890E+17
Xe-133	2.5036E+05	1.3375E-03	6.0563E+21	4.9928E+19
Xe-135	8.9677E+04	3.5116E-05	1.5665E+20	1.9055E+19
Cs-134	1.6284E+02	1.2586E-04	5.6561E+20	7.0699E+16
Cs-136	4.8295E+01	6.5895E-07	2.9179E+18	2.1045E+16
Cs-137	1.3105E+02	1.5067E-03	6.6229E+21	5.6897E+16
Ba-139	7.4990E+00	4.5846E-10	1.9863E+15	6.0809E+15
Ba-140	5.3930E+01	7.3667E-07	3.1688E+18	1.9751E+16
La-140	3.0703E+00	5.5238E-09	2.3761E+16	6.6845E+14
La-141	2.5264E-01	4.4673E-11	1.9080E+14	1.1949E+14
La-142	8.2891E-02	5.7905E-12	2.4557E+13	6.1232E+13
Ce-141	1.2818E+00	4.4987E-08	1.9214E+17	4.6839E+14
Ce-143	1.1408E+00	1.7179E-09	7.2345E+15	4.2902E+14
Ce-144	1.0309E+00	3.2321E-07	1.3517E+18	3.7640E+14
Pr-143	4.8629E-01	7.2215E-09	3.0412E+16	1.7678E+14
Nd-147	1.9925E-01	2.4630E-09	1.0090E+16	7.3011E+13
Np-239	1.3913E+01	5.9971E-08	1.5111E+17	5.1677E+15
Pu-238	4.1634E-03	2.4319E-07	6.1535E+17	1.5199E+12
Pu-239	3.6481E-04	5.8693E-06	1.4789E+19	1.3316E+11
Pu-240	6.8299E-04	2.9973E-06	7.5210E+18	2.4934E+11
Pu-241	1.4721E-01	1.4290E-06	3.5709E+18	5.3742E+13
Am-241	9.8700E-05	2.8757E-08	7.1859E+16	3.6019E+10
Cm-242	2.5016E-02	7.5480E-09	1.8783E+16	9.1350E+12
Cm-244	1.6544E-03	2.0449E-08	5.0470E+16	6.0397E+11

RB Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	4.9184E+22	0.0000E+00	
Elemental I (atoms)	1.5635E+18	0.0000E+00	
Organic I (atoms)	2.6284E+18	0.0000E+00	
Aerosols (kg)	1.6884E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.9436E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5514E-08
Total I (Ci)			3.5960E+03

DW to RB Transport Group Inventory:

Time (h) = 4.0000 Leakage Transport

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Noble gases (atoms)      4.9270E+22
Elemental I (atoms)      1.6387E+18
Organic I (atoms)        2.6914E+18
Aerosols (kg)            1.6814E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   4.0000       Ci           kg          Atoms      Decay
Co-58                  3.3311E-10  1.0476E-17  1.0877E+08  7.3780E+04
Co-60                  3.9931E-10  3.5325E-16  3.5456E+09  8.8406E+04
Kr-85                  5.2965E-02  1.3500E-07  9.5645E+17  8.8092E+12
Kr-85m                 4.7014E-01  5.7128E-11  4.0475E+14  9.0501E+13
Kr-87                  1.9799E-01  6.9899E-12  4.8384E+13  5.8196E+13
Kr-88                  8.9518E-01  7.1390E-11  4.8855E+14  1.8851E+14
Rb-86                  3.1612E-08  3.8851E-16  2.7205E+09  1.0064E+07
Sr-89                  5.6432E-07  1.9424E-14  1.3143E+11  1.2501E+08
Sr-90                  7.4367E-08  5.4519E-13  3.6480E+12  1.6464E+07
Sr-91                  5.2545E-07  1.4495E-16  9.5926E+08  1.2583E+08
Sr-92                  2.6357E-07  2.0969E-17  1.3726E+08  7.7804E+07
Y-90                   3.0458E-09  5.5983E-18  3.7460E+07  5.0085E+05
Y-91                   7.5149E-09  3.0643E-16  2.0279E+09  1.6393E+06
Y-92                   1.6953E-07  1.7618E-17  1.1533E+08  3.0303E+07
Y-93                   6.1557E-09  1.8450E-18  1.1947E+07  1.4671E+06
Zr-95                  8.7477E-09  4.0720E-16  2.5813E+09  1.9376E+06
Zr-97                  7.2005E-09  3.7666E-18  2.3385E+07  1.6655E+06
Nb-95                  8.7806E-09  2.2455E-16  1.4234E+09  1.9439E+06
Mo-99                  1.0755E-07  2.2424E-16  1.3640E+09  2.4077E+07
Tc-99m                 9.8289E-08  1.8692E-17  1.1371E+08  2.1707E+07
Ru-103                 9.7038E-08  3.0067E-15  1.7579E+10  2.1500E+07
Ru-105                 3.7163E-08  5.5286E-18  3.1709E+07  9.7658E+06
Ru-106                 4.2321E-08  1.2650E-14  7.1866E+10  9.3703E+06
Rh-105                 6.4004E-08  7.5829E-17  4.3491E+08  1.4262E+07
Sb-127                 1.0842E-07  4.0600E-16  1.9252E+09  2.4196E+07
Sb-129                 1.8170E-07  3.2312E-17  1.5084E+08  4.7985E+07
Te-127                 1.1007E-07  4.1708E-17  1.9777E+08  2.4311E+07
Te-127m                1.8942E-08  2.0082E-15  9.5223E+09  4.1935E+06
Te-129                 2.2980E-07  1.0973E-17  5.1226E+07  5.5756E+07
Te-129m                6.2388E-08  2.0709E-15  9.6678E+09  1.3815E+07
Te-131m                2.1407E-07  2.6846E-16  1.2341E+09  4.8572E+07
Te-132                 1.6259E-06  5.3557E-15  2.4434E+10  3.6337E+08
I-131                  1.2629E-03  1.0187E-11  4.6828E+13  3.3364E+11
I-132                  7.1004E-04  6.8788E-14  3.1383E+11  2.5847E+11
I-133                  2.3327E-03  2.0592E-12  9.3238E+12  6.4004E+11
I-134                  1.2857E-04  4.8197E-15  2.1660E+10  1.1645E+11
I-135                  1.6559E-03  4.7151E-13  2.1033E+12  4.9887E+11
Xe-133                 5.5736E+00  2.9776E-08  1.3483E+17  9.3123E+14
Xe-135                 1.9590E+00  7.6710E-10  3.4219E+15  3.4540E+14
Cs-134                 3.4791E-06  2.6890E-12  1.2085E+13  1.1053E+09
Cs-136                 1.0319E-06  1.4079E-14  6.2342E+10  3.2880E+08
Cs-137                 2.8001E-06  3.2192E-11  1.4150E+14  8.8954E+08
Ba-139                 1.2028E-07  7.3532E-18  3.1857E+07  4.8523E+07
Ba-140                 8.6498E-07  1.1815E-14  5.0824E+10  1.9196E+08
La-140                 5.0997E-08  9.1750E-17  3.9467E+08  8.1227E+06
La-141                 4.0521E-09  7.1651E-19  3.0602E+06  1.0898E+06
La-142                 1.3295E-09  9.2873E-20  3.9387E+05  4.9995E+05
Ce-141                 2.0558E-08  7.2150E-16  3.0816E+09  4.5545E+06
Ce-143                 1.8298E-08  2.7553E-17  1.1603E+08  4.1423E+06
Ce-144                 1.6534E-08  5.1839E-15  2.1679E+10  3.6609E+06
Pr-143                 7.8025E-09  1.1587E-16  4.8796E+08  1.7222E+06
Nd-147                 3.1958E-09  3.9504E-17  1.6183E+08  7.0950E+05
Np-239                 2.2314E-07  9.6187E-16  2.4236E+09  5.0049E+07
Pu-238                 6.6776E-11  3.9005E-15  9.8696E+09  1.4784E+04
Pu-239                 5.8512E-12  9.4136E-14  2.3720E+11  1.2952E+03
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Pu-240                 1.0954E-11  4.8074E-14  1.2063E+11  2.4252E+03
Pu-241                 2.3610E-09  2.2920E-14  5.7273E+10  5.2272E+05
Am-241                 1.5831E-12  4.6125E-16  1.1526E+09  3.5038E+02
Cm-242                 4.0123E-10  1.2106E-16  3.0126E+08  8.8847E+04
Cm-244                 2.6535E-11  3.2798E-16  8.0949E+08  5.8746E+03

CR Transport Group Inventory:
Time (h) =   4.0000    Atmosphere     Sump
Noble gases (atoms)    1.0956E+18  0.0000E+00
Elemental I (atoms)    3.6613E+13  0.0000E+00
Organic I (atoms)      2.1359E+13  0.0000E+00
Aerosols (kg)          3.5811E-11  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         5.9561E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   7.1746E-13
Total I (Ci)                                   6.0900E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.5057E+17
Elemental I (atoms)    0.0000E+00  9.7713E+13
Organic I (atoms)      0.0000E+00  4.1160E+13
Aerosols (kg)          0.0000E+00  9.4368E-11

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.4616E+18
Elemental I (atoms)    2.0333E+14  6.2884E+12
Organic I (atoms)      8.9456E+13  2.7667E+12
Aerosols (kg)          1.9616E-10  6.0669E-12

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    1.0150E+18  0.0000E+00
Elemental I (atoms)    6.6015E+13  0.0000E+00
Organic I (atoms)      2.2118E+13  0.0000E+00
Aerosols (kg)          6.4617E-11  0.0000E+00

EAB Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3326E-01  1.1137E+00  3.6815E-01
Accumulated dose (rem)  4.3756E-01  1.5005E+00  4.8468E-01

LPZ Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1998E+00  2.0719E+01  6.8489E+00
Accumulated dose (rem)  8.2672E+00  2.8673E+01  9.1678E+00

CR Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.7653E-01  5.3364E+00  3.4382E-01
Accumulated dose (rem)  2.1621E-01  6.9325E+00  4.3392E-01

DW Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg          Atoms       Decay
Co-58                  3.6262E-03  1.1404E-10  1.1841E+15  4.3620E+15
Co-60                  4.3537E-03  3.8515E-09  3.8657E+16  5.2233E+15
Kr-85                  1.3511E+06  3.4437E+00  2.4398E+25  1.2340E+21
Kr-85m                 6.4586E+06  7.8481E-04  5.5603E+21  1.0527E+22
Kr-87                  5.7076E+05  2.0150E-05  1.3948E+20  5.8581E+21
Kr-88                  8.6023E+06  6.8603E-04  4.6947E+21  2.0435E+22
Rb-86                  1.2408E-01  1.5250E-09  1.0679E+16  3.1486E+17
Sr-89                  6.1391E+00  2.1131E-07  1.4298E+18  7.3930E+18
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Sr-90	8.1087E-01	5.9445E-06	3.9776E+19	9.7276E+17
Sr-91	4.2791E+00	1.1805E-09	7.8119E+15	8.3866E+18
Sr-92	1.0331E+00	8.2193E-11	5.3802E+14	6.9588E+18
Y-90	5.9745E-02	1.0981E-10	7.3479E+14	1.0230E+16
Y-91	8.4766E-02	3.4564E-09	2.2874E+16	9.3845E+16
Y-92	1.5289E+00	1.5889E-10	1.0401E+15	1.1548E+17
Y-93	5.1007E-02	1.5288E-11	9.8998E+13	9.7091E+16
Zr-95	9.5210E-02	4.4319E-09	2.8094E+16	1.1456E+17
Zr-97	6.6632E-02	3.4856E-11	2.1640E+14	1.0532E+17
Nb-95	9.5737E-02	2.4483E-09	1.5520E+16	1.1485E+17
Mo-99	1.1244E+00	2.3445E-09	1.4261E+16	1.4476E+18
Tc-99m	1.0507E+00	1.9982E-10	1.2155E+15	1.2890E+18
Ru-103	1.0550E+00	3.2688E-08	1.9112E+17	1.2718E+18
Ru-105	2.1702E-01	3.2284E-11	1.8516E+14	7.4514E+17
Ru-106	4.6131E-01	1.3789E-07	7.8336E+17	5.5369E+17
Rh-105	6.6790E-01	7.9130E-10	4.5384E+15	8.4917E+17
Sb-127	1.1473E+00	4.2961E-09	2.0371E+16	1.4475E+18
Sb-129	1.0428E+00	1.8544E-10	8.6570E+14	3.6869E+18
Te-127	1.1901E+00	4.5096E-10	2.1384E+15	1.4398E+18
Te-127m	2.0654E-01	2.1897E-08	1.0383E+17	2.4776E+17
Te-129	1.5769E+00	7.5299E-11	3.5152E+14	3.8569E+18
Te-129m	6.7903E-01	2.2540E-08	1.0522E+17	8.1640E+17
Te-131m	2.1281E+00	2.6688E-09	1.2269E+16	2.9819E+18
Te-132	1.7111E+01	5.6362E-08	2.5714E+17	2.1787E+19
I-131	3.1342E+04	2.5281E-04	1.1622E+21	1.7357E+20
I-132	7.5270E+03	7.2921E-07	3.3268E+18	2.2774E+20
I-133	5.1366E+04	4.5344E-05	2.0531E+20	3.4651E+20
I-134	1.3688E+02	5.1311E-09	2.3060E+16	2.0781E+20
I-135	2.7389E+04	7.7989E-06	3.4790E+19	2.9932E+20
Xe-133	1.3923E+08	7.4385E-01	3.3681E+24	1.2958E+23
Xe-135	3.7849E+07	1.4821E-02	6.6114E+22	4.5222E+22
Cs-134	1.3739E+01	1.0619E-05	4.7722E+19	3.4482E+19
Cs-136	4.0396E+00	5.5118E-08	2.4406E+17	1.0299E+19
Cs-137	1.1059E+01	1.2714E-04	5.5888E+20	2.7749E+19
Ba-139	1.7545E-01	1.0726E-11	4.6471E+13	6.3347E+18
Ba-140	9.3464E+00	1.2767E-07	5.4916E+17	1.1384E+19
La-140	1.0291E+00	1.8515E-09	7.9643E+15	1.2300E+17
La-141	2.1820E-02	3.8584E-12	1.6479E+13	8.5907E+16
La-142	2.4000E-03	1.6765E-13	7.1101E+11	6.0276E+16
Ce-141	2.2355E-01	7.8457E-09	3.3509E+16	2.6940E+17
Ce-143	1.8343E-01	2.7622E-10	1.1632E+15	2.5342E+17
Ce-144	1.8021E-01	5.6501E-08	2.3629E+17	2.1633E+17
Pr-143	8.5766E-02	1.2737E-09	5.3637E+15	1.0116E+17
Nd-147	3.4481E-02	4.2623E-10	1.7461E+15	4.2102E+16
Np-239	2.3166E+00	9.9858E-09	2.5161E+16	3.0179E+18
Pu-238	7.2812E-04	4.2531E-08	1.0762E+17	8.7344E+14
Pu-239	6.3831E-05	1.0269E-06	2.5876E+18	7.6509E+13
Pu-240	1.1944E-04	5.2418E-07	1.3153E+18	1.4329E+14
Pu-241	2.5743E-02	2.4991E-07	6.2447E+17	3.0884E+16
Am-241	1.7278E-05	5.0341E-09	1.2579E+16	2.0691E+13
Cm-242	4.3718E-03	1.3191E-09	3.2825E+15	5.2508E+15
Cm-244	2.8932E-04	3.5761E-09	8.8263E+15	3.4709E+14

DW Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7843E+25	0.0000E+00	
Elemental I (atoms)	4.0774E+19	4.8566E+22	
Organic I (atoms)	1.3622E+21	0.0000E+00	
Aerosols (kg)	1.4691E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.5890E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1212E-05
Total I (Ci)			1.1776E+05

DW to RB Transport Group Inventory:

Time (h) = 8.0000 Leakage Transport	
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1895E+18
Aerosols (kg)	1.6818E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8343E+17
Organic I (atoms)	0.0000E+00	2.0850E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8343E+17
Organic I (atoms)	0.0000E+00	2.0850E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

RB Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	2.0744E-02	6.5237E-10	6.7735E+15	1.8645E+13
Co-60	2.4906E-02	2.2033E-08	2.2114E+17	2.2357E+13
Kr-85	5.7618E+03	1.4686E-02	1.0405E+23	2.6630E+18
Kr-85m	2.7543E+04	3.3469E-06	2.3712E+19	1.8811E+19
Kr-87	2.4341E+03	8.5931E-08	5.9482E+17	6.1852E+18
Kr-88	3.6685E+04	2.9256E-06	2.0021E+19	3.2433E+19
Rb-86	1.4707E+00	1.8075E-08	1.2657E+17	1.4300E+15
Sr-89	3.5120E+01	1.2088E-06	8.1796E+18	3.1584E+16
Sr-90	4.6387E+00	3.4006E-05	2.2754E+20	4.1637E+15
Sr-91	2.4479E+01	6.7529E-09	4.4689E+16	2.8418E+16
Sr-92	5.9101E+00	4.7019E-10	3.0778E+15	1.4281E+16
Y-90	3.7296E-01	6.8550E-10	4.5869E+15	1.8980E+14
Y-91	4.9035E-01	1.9995E-08	1.3232E+17	4.2245E+14
Y-92	9.8996E+00	1.0288E-09	6.7344E+15	8.0106E+15
Y-93	2.9179E-01	8.7459E-11	5.6633E+14	3.3341E+14
Zr-95	5.4466E-01	2.5353E-08	1.6072E+17	4.8963E+14
Zr-97	3.8118E-01	1.9940E-10	1.2379E+15	3.9437E+14
Nb-95	5.4767E-01	1.4006E-08	8.8784E+16	4.9159E+14
Mo-99	6.4324E+00	1.3412E-08	8.1583E+16	5.9839E+15
Tc-99m	6.0106E+00	1.1431E-09	6.9534E+15	5.4524E+15
Ru-103	6.0351E+00	1.8699E-07	1.0933E+18	5.4306E+15
Ru-105	1.2415E+00	1.8469E-10	1.0592E+15	1.9810E+15
Ru-106	2.6389E+00	7.8879E-07	4.4813E+18	2.3693E+15
Rh-105	3.8208E+00	4.5267E-09	2.5962E+16	3.5521E+15
Sb-127	6.5631E+00	2.4576E-08	1.1654E+17	6.0431E+15
Sb-129	5.9655E+00	1.0608E-09	4.9523E+15	9.6852E+15
Te-127	6.8083E+00	2.5798E-09	1.2233E+16	6.1308E+15
Te-127m	1.1815E+00	1.2526E-07	5.9397E+17	1.0605E+15
Te-129	9.0210E+00	4.3076E-10	2.0109E+15	1.1897E+16
Te-129m	3.8844E+00	1.2894E-07	6.0195E+17	3.4916E+15
Te-131m	1.2174E+01	1.5267E-08	7.0184E+16	1.1828E+16
Te-132	9.7887E+01	3.2243E-07	1.4710E+18	9.0552E+16
I-131	8.0023E+02	6.4548E-06	2.9673E+19	7.1024E+17
I-132	2.3262E+02	2.2536E-08	1.0282E+17	4.6492E+17
I-133	1.3118E+03	1.1580E-06	5.2434E+18	1.2959E+18
I-134	3.4958E+00	1.3104E-10	5.8892E+14	1.6515E+17
I-135	6.9947E+02	1.9917E-07	8.8849E+17	9.0821E+17
Xe-133	5.9372E+05	3.1719E-03	1.4362E+22	2.7789E+20
Xe-135	1.6109E+05	6.3080E-05	2.8139E+20	8.9079E+19
Cs-134	1.6284E+02	1.2586E-04	5.6564E+20	1.5746E+17
Cs-136	4.7881E+01	6.5330E-07	2.8928E+18	4.6666E+16
Cs-137	1.3108E+02	1.5070E-03	6.6243E+21	1.2673E+17
Ba-139	1.0037E+00	6.1360E-11	2.6584E+14	7.8017E+15
Ba-140	5.3467E+01	7.3034E-07	3.1416E+18	4.8362E+16
La-140	6.4432E+00	1.1592E-08	4.9864E+16	3.1899E+15
La-141	1.2483E-01	2.2072E-11	9.4271E+13	2.1608E+14
La-142	1.3729E-02	9.5908E-13	4.0674E+12	8.1727E+13
Ce-141	1.2785E+00	4.4870E-08	1.9164E+17	1.1505E+15
Ce-143	1.0493E+00	1.5801E-09	6.6544E+15	1.0121E+15
Ce-144	1.0309E+00	3.2322E-07	1.3517E+18	9.2565E+14
Pr-143	4.9166E-01	7.3013E-09	3.0748E+16	4.3728E+14
Nd-147	1.9725E-01	2.4383E-09	9.9889E+15	1.7864E+14

Np-239	1.3252E+01	5.7125E-08	1.4394E+17	1.2403E+16
Pu-238	4.1653E-03	2.4330E-07	6.1563E+17	3.7387E+12
Pu-239	3.6515E-04	5.8747E-06	1.4803E+19	3.2762E+11
Pu-240	6.8329E-04	2.9986E-06	7.5243E+18	6.1332E+11
Pu-241	1.4727E-01	1.4296E-06	3.5723E+18	1.3219E+14
Am-241	9.8851E-05	2.8801E-08	7.1969E+16	8.8646E+10
Cm-242	2.5009E-02	7.5459E-09	1.8778E+16	2.2462E+13
Cm-244	1.6551E-03	2.0458E-08	5.0492E+16	1.4856E+12

RB Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1874E+23	0.0000E+00	
Elemental I (atoms)	1.5919E+18	0.0000E+00	
Organic I (atoms)	5.9193E+18	0.0000E+00	
Aerosols (kg)	1.6884E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.1000E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.6284E-08
Total I (Ci)			3.0476E+03

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1895E+18
Aerosols (kg)	1.6818E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	5.9242E-10	1.8631E-17	1.9344E+08	3.3507E+05
Co-60	7.1127E-10	6.2923E-16	6.3155E+09	4.0189E+05
Kr-85	2.4244E-01	6.1794E-07	4.3780E+18	8.4185E+13
Kr-85m	1.1589E+00	1.4083E-10	9.9773E+14	5.5470E+14
Kr-87	1.0242E-01	3.6157E-12	2.5028E+13	1.4695E+14
Kr-88	1.5436E+00	1.2310E-10	8.4242E+14	9.1379E+14
Rb-86	4.3607E-08	5.3593E-16	3.7528E+09	3.0850E+07
Sr-89	1.0030E-06	3.4523E-14	2.3360E+11	5.6751E+08
Sr-90	1.3247E-07	9.7116E-13	6.4983E+12	7.4850E+07
Sr-91	6.9909E-07	1.9285E-16	1.2762E+09	4.7904E+08
Sr-92	1.6878E-07	1.3428E-17	8.7897E+07	2.0156E+08
Y-90	1.0684E-08	1.9638E-17	1.3140E+08	4.1192E+06
Y-91	1.4010E-08	5.7126E-16	3.7805E+09	7.6905E+06
Y-92	2.8395E-07	2.9510E-17	1.9317E+08	1.6494E+08
Y-93	8.3331E-09	2.4977E-18	1.6174E+07	5.6425E+06
Zr-95	1.5555E-08	7.2405E-16	4.5898E+09	8.7987E+06
Zr-97	1.0886E-08	5.6944E-18	3.5353E+07	6.8418E+06
Nb-95	1.5641E-08	3.9998E-16	2.5355E+09	8.8371E+06
Mo-99	1.8370E-07	3.8302E-16	2.3299E+09	1.0661E+08
Tc-99m	1.7165E-07	3.2645E-17	1.9858E+08	9.7692E+07
Ru-103	1.7235E-07	5.3403E-15	3.1223E+10	9.7563E+07
Ru-105	3.5454E-08	5.2743E-18	3.0250E+07	3.0872E+07
Ru-106	7.5364E-08	2.2527E-14	1.2798E+11	4.2590E+07
Rh-105	1.0912E-07	1.2928E-16	7.4145E+08	6.3391E+07
Sb-127	1.8743E-07	7.0185E-16	3.3281E+09	1.0794E+08
Sb-129	1.7036E-07	3.0296E-17	1.4143E+08	1.5030E+08
Te-127	1.9443E-07	7.3675E-17	3.4935E+08	1.1006E+08
Te-127m	3.3743E-08	3.5773E-15	1.6963E+10	1.9065E+07
Te-129	2.5763E-07	1.2302E-17	5.7428E+07	1.9373E+08
Te-129m	1.1093E-07	3.6824E-15	1.7191E+10	6.2751E+07
Te-131m	3.4768E-07	4.3601E-16	2.0044E+09	2.0846E+08
Te-132	2.7955E-06	9.2080E-15	4.2009E+10	1.6156E+09
I-131	3.0325E-03	2.4460E-11	1.1245E+14	1.4761E+12

I-132	6.5491E-04	6.3447E-14	2.8946E+11	6.4414E+11
I-133	4.9720E-03	4.3891E-12	1.9873E+13	2.6129E+12
I-134	1.3250E-05	4.9667E-16	2.2321E+09	1.4514E+11
I-135	2.6511E-03	7.5490E-13	3.3675E+12	1.6958E+12
Xe-133	2.4975E+01	1.3343E-07	6.0415E+17	8.7612E+15
Xe-135	6.7336E+00	2.6368E-09	1.1762E+16	2.6968E+15
Cs-134	4.8283E-06	3.7318E-12	1.6771E+13	3.4003E+09
Cs-136	1.4197E-06	1.9370E-14	8.5772E+10	1.0064E+09
Cs-137	3.8865E-06	4.4682E-11	1.9641E+14	2.7367E+09
Ba-139	2.8663E-08	1.7523E-18	7.5920E+06	8.5710E+07
Ba-140	1.5269E-06	2.0857E-14	8.9718E+10	8.6772E+08
La-140	1.8460E-07	3.3212E-16	1.4286E+09	7.0140E+07
La-141	3.5648E-09	6.3035E-19	2.6922E+06	3.3015E+06
La-142	3.9209E-10	2.7390E-20	1.1616E+05	9.4692E+05
Ce-141	3.6511E-08	1.2814E-15	5.4728E+09	2.0669E+07
Ce-143	2.9968E-08	4.5127E-17	1.9004E+08	1.7870E+07
Ce-144	2.9441E-08	9.2306E-15	3.8603E+10	1.6639E+07
Pr-143	1.4042E-08	2.0853E-16	8.7817E+08	7.8813E+06
Nd-147	5.6332E-09	6.9633E-17	2.8527E+08	3.2042E+06
Np-239	3.7847E-07	1.6314E-15	4.1107E+09	2.2065E+08
Pu-238	1.1895E-10	6.9483E-15	1.7581E+10	6.7210E+04
Pu-239	1.0428E-11	1.6777E-13	4.2274E+11	5.8902E+03
Pu-240	1.9514E-11	8.5637E-14	2.1488E+11	1.1026E+04
Pu-241	4.2058E-09	4.0828E-14	1.0202E+11	2.3763E+06
Am-241	2.8230E-12	8.2252E-16	2.0553E+09	1.5940E+03
Cm-242	7.1423E-10	2.1550E-16	5.3627E+08	4.0373E+05
Cm-244	4.7267E-11	5.8424E-16	1.4420E+09	2.6707E+04

CR Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	4.9958E+18	0.0000E+00	
Elemental I (atoms)	5.0739E+13	0.0000E+00	
Organic I (atoms)	8.4401E+13	0.0000E+00	
Aerosols (kg)	5.0007E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3779E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6104E-12
Total I (Ci)			1.1324E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.5826E+18
Elemental I (atoms)	0.0000E+00	2.4374E+14
Organic I (atoms)	0.0000E+00	2.4895E+14
Aerosols (kg)	0.0000E+00	2.3600E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0309E+19
Elemental I (atoms)	5.2203E+14	1.6145E+13
Organic I (atoms)	5.4296E+14	1.6793E+13
Aerosols (kg)	5.0527E-10	1.5627E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	9.8826E+18	0.0000E+00
Elemental I (atoms)	2.0555E+14	0.0000E+00
Organic I (atoms)	1.7842E+14	0.0000E+00
Aerosols (kg)	2.0160E-10	0.0000E+00

EAB Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3907E+00	9.5871E+00	1.6876E+00
Accumulated dose (rem)	1.8282E+00	1.1088E+01	2.1722E+00

LPZ Doses:

Time (h) = 24.0000 Whole Body Thyroid TEDE
Delta dose (rem) 9.2452E+00 3.2778E+01 1.0260E+01
Accumulated dose (rem) 1.7512E+01 6.1452E+01 1.9428E+01

CR Doses:

Time (h) = 24.0000 Whole Body Thyroid TEDE
Delta dose (rem) 3.8464E-01 2.1074E+01 1.0377E+00
Accumulated dose (rem) 6.0086E-01 2.8007E+01 1.4717E+00

DW Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	3.5450E-03	1.1148E-10	1.1575E+15	4.3696E+15
Co-60	4.2831E-03	3.7890E-09	3.8030E+16	5.2325E+15
Kr-85	1.3294E+06	3.3884E+00	2.4006E+25	4.0892E+21
Kr-85m	5.3460E+05	6.4962E-05	4.6025E+20	1.5593E+22
Kr-87	9.1606E+01	3.2340E-09	2.2386E+16	5.9973E+21
Kr-88	1.7048E+05	1.3596E-05	9.3040E+19	2.5017E+22
Rb-86	1.1911E-01	1.4639E-09	1.0251E+16	3.1512E+17
Sr-89	5.9859E+00	2.0604E-07	1.3942E+18	7.4059E+18
Sr-90	7.9787E-01	5.8492E-06	3.9138E+19	9.7447E+17
Sr-91	1.3103E+00	3.6145E-10	2.3920E+15	8.3919E+18
Sr-92	1.6977E-02	1.3506E-12	8.8409E+12	6.9593E+18
Y-90	1.7689E-01	3.2513E-10	2.1756E+15	1.0479E+16
Y-91	9.0958E-02	3.7090E-09	2.4545E+16	9.4033E+16
Y-92	1.6077E-01	1.6708E-11	1.0937E+14	1.1693E+17
Y-93	1.6740E-02	5.0174E-12	3.2490E+13	9.7157E+16
Zr-95	9.3014E-02	4.3297E-09	2.7446E+16	1.1476E+17
Zr-97	3.4016E-02	1.7794E-11	1.1047E+14	1.0542E+17
Nb-95	9.4183E-02	2.4086E-09	1.5268E+16	1.1506E+17
Mo-99	9.3531E-01	1.9501E-09	1.1863E+16	1.4497E+18
Tc-99m	9.3702E-01	1.7820E-10	1.0840E+15	1.2910E+18
Ru-103	1.0260E+00	3.1789E-08	1.8586E+17	1.2741E+18
Ru-105	1.7567E-02	2.6133E-12	1.4989E+13	7.4531E+17
Ru-106	4.5336E-01	1.3551E-07	7.6987E+17	5.5466E+17
Rh-105	5.0027E-01	5.9270E-10	3.3994E+15	8.5041E+17
Sb-127	1.0012E+00	3.7492E-09	1.7778E+16	1.4498E+18
Sb-129	7.8755E-02	1.4005E-11	6.5379E+13	3.6877E+18
Te-127	1.1176E+00	4.2348E-10	2.0081E+15	1.4422E+18
Te-127m	2.0319E-01	2.1541E-08	1.0215E+17	2.4820E+17
Te-129	6.8143E-01	3.2539E-11	1.5190E+14	3.8586E+18
Te-129m	6.6015E-01	2.1913E-08	1.0230E+17	8.1782E+17
Te-131m	1.4469E+00	1.8145E-09	8.3416E+15	2.9857E+18
Te-132	1.4611E+01	4.8128E-08	2.1957E+17	2.1821E+19
I-131	2.9118E+04	2.3487E-04	1.0797E+21	2.3795E+20
I-132	7.6850E+01	7.4451E-09	3.3966E+16	2.3105E+20
I-133	2.9656E+04	2.6179E-05	1.1854E+20	4.3071E+20
I-134	4.3178E-04	1.6186E-14	7.2740E+10	2.0783E+20
I-135	5.0339E+03	1.4334E-06	6.3942E+18	3.2744E+20
Xe-133	1.2546E+08	6.7024E-01	3.0348E+24	4.1128E+23
Xe-135	1.1002E+07	4.3080E-03	1.9217E+22	9.1517E+22
Cs-134	1.3511E+01	1.0443E-05	4.6931E+19	3.4511E+19
Cs-136	3.8373E+00	5.2357E-08	2.3184E+17	1.0308E+19
Cs-137	1.0882E+01	1.2510E-04	5.4992E+20	2.7772E+19
Ba-139	5.5300E-05	3.3808E-15	1.4647E+10	6.3347E+18
Ba-140	8.8693E+00	1.2115E-07	5.2113E+17	1.1404E+19
La-140	2.9554E+00	5.3170E-09	2.2871E+16	1.2724E+17
La-141	1.2773E-03	2.2586E-13	9.6464E+11	8.5923E+16
La-142	1.7742E-06	1.2394E-16	5.2562E+08	6.0277E+16
Ce-141	2.1697E-01	7.6148E-09	3.2523E+16	2.6987E+17
Ce-143	1.2898E-01	1.9422E-10	8.1793E+14	2.5375E+17
Ce-144	1.7704E-01	5.5507E-08	2.3213E+17	2.1671E+17
Pr-143	8.6703E-02	1.2876E-09	5.4223E+15	1.0134E+17
Nd-147	3.2532E-02	4.0213E-10	1.6474E+15	4.2174E+16
Np-239	1.8734E+00	8.0754E-09	2.0348E+16	3.0223E+18
Pu-238	7.1653E-04	4.1854E-08	1.0590E+17	8.7498E+14
Pu-239	6.2919E-05	1.0123E-06	2.5506E+18	7.6644E+13
Pu-240	1.1753E-04	5.1580E-07	1.2943E+18	1.4354E+14
Pu-241	2.5330E-02	2.4589E-07	6.1443E+17	3.0938E+16
Am-241	1.7076E-05	4.9752E-09	1.2432E+16	2.0728E+13

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Cm-242                4.2897E-03  1.2943E-09  3.2209E+15  5.2600E+15
Cm-244                2.8467E-04  3.5187E-09  8.6845E+15  3.4770E+14

DW Transport Group Inventory:
Time (h) =  24.0000    Atmosphere     Sump
Noble gases (atoms)    2.7061E+25  0.0000E+00
Elemental I (atoms)    3.4945E+19  4.8566E+22
Organic I (atoms)      1.1675E+21  0.0000E+00
Aerosols (kg)          1.4446E-04  4.8987E+01
Dose Effective (Ci/cc) I-131 (Thyroid)         8.0519E-06
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   8.8209E-06
Total I (Ci)                                   6.3885E+04

DW to  RB Transport Group Inventory:
Time (h) =  24.0000  Leakage Transport

Noble gases (atoms)      3.9365E+23
Elemental I (atoms)      2.1204E+18
Organic I (atoms)        1.8784E+19
Aerosols (kg)            1.6832E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2356E+23
Elemental I (atoms)    0.0000E+00  9.9876E+17
Organic I (atoms)      0.0000E+00  5.9379E+18
Aerosols (kg)          0.0000E+00  8.8403E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2356E+23
Elemental I (atoms)    0.0000E+00  9.9876E+17
Organic I (atoms)      0.0000E+00  5.9379E+18
Aerosols (kg)          0.0000E+00  8.8403E-04

RB Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms      Decay
Co-58                 2.0645E-02  6.4925E-10  6.7411E+15  6.2751E+13
Co-60                 2.4943E-02  2.2066E-08  2.2147E+17  7.5478E+13
Kr-85                 1.9163E+04  4.8844E-02  3.4605E+23  2.9909E+19
Kr-85m                7.7063E+03  9.3642E-07  6.6344E+18  5.7133E+19
Kr-87                 1.3205E+00  4.6618E-11  3.2269E+14  6.9467E+18
Kr-88                 2.4574E+03  1.9598E-07  1.3412E+18  6.3382E+19
Rb-86                 1.4360E+00  1.7648E-08  1.2358E+17  4.5273E+15
Sr-89                 3.4860E+01  1.1999E-06  8.1191E+18  1.0616E+17
Sr-90                 4.6465E+00  3.4063E-05  2.2793E+20  1.4058E+16
Sr-91                 7.6305E+00  2.1050E-09  1.3930E+16  5.9224E+16
Sr-92                 9.8866E-02  7.8656E-12  5.1486E+13  1.7309E+16
Y-90                  1.0564E+00  1.9417E-09  1.2992E+16  1.6937E+15
Y-91                  5.3511E-01  2.1820E-08  1.4440E+17  1.5230E+15
Y-92                  9.8655E-01  1.0253E-10  6.7112E+14  1.7106E+16
Y-93                  9.7486E-02  2.9220E-11  1.8921E+14  7.1114E+14
Zr-95                 5.4168E-01  2.5214E-08  1.5984E+17  1.6473E+15
Zr-97                 1.9810E-01  1.0363E-10  6.4335E+14  9.9054E+14
Nb-95                 5.4849E-01  1.4027E-08  8.8916E+16  1.6594E+15
Mo-99                 5.4469E+00  1.1357E-08  6.9084E+16  1.8614E+16
Tc-99m                5.4569E+00  1.0378E-09  6.3127E+15  1.7219E+16
Ru-103                5.9748E+00  1.8513E-07  1.0824E+18  1.8229E+16
Ru-105                1.0230E-01  1.5219E-11  8.7288E+13  2.9536E+15
Ru-106                2.6402E+00  7.8916E-07  4.4834E+18  7.9950E+15
Rh-105                2.9134E+00  3.4517E-09  1.9797E+16  1.0730E+16
Sb-127                5.8309E+00  2.1834E-08  1.0353E+17  1.9235E+16
Sb-129                4.5864E-01  8.1559E-11  3.8074E+14  1.4260E+16
Te-127                6.5085E+00  2.4662E-09  1.1694E+16  1.9977E+16
Te-127m               1.1833E+00  1.2545E-07  5.9486E+17  3.5805E+15
Te-129                3.9684E+00  1.8949E-10  8.8461E+14  2.1903E+16
Te-129m               3.8445E+00  1.2762E-07  5.9575E+17  1.1730E+16
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Te-131m	8.4264E+00	1.0567E-08	4.8578E+16	3.3537E+16
Te-132	8.5091E+01	2.8028E-07	1.2787E+18	2.8522E+17
I-131	1.0495E+03	8.4656E-06	3.8917E+19	2.7023E+18
I-132	1.0273E+02	9.9522E-09	4.5404E+16	7.2420E+17
I-133	1.0686E+03	9.4336E-07	4.2715E+18	3.8654E+18
I-134	1.5559E-05	5.8324E-16	2.6212E+09	1.6576E+17
I-135	1.8140E+02	5.1652E-08	2.3041E+17	1.7389E+18
Xe-133	1.8085E+06	9.6616E-03	4.3747E+22	2.9442E+21
Xe-135	1.5864E+05	6.2120E-05	2.7711E+20	4.8245E+20
Cs-134	1.6288E+02	1.2589E-04	5.6577E+20	5.0456E+17
Cs-136	4.6260E+01	6.3119E-07	2.7949E+18	1.4698E+17
Cs-137	1.3118E+02	1.5082E-03	6.6295E+21	4.0620E+17
Ba-139	3.2204E-04	1.9689E-14	8.5300E+10	8.0675E+15
Ba-140	5.1652E+01	7.0554E-07	3.0349E+18	1.6037E+17
La-140	1.7633E+01	3.1724E-08	1.3646E+17	2.8755E+16
La-141	7.4386E-03	1.3153E-12	5.6177E+12	3.0479E+14
La-142	1.0332E-05	7.2178E-16	3.0610E+09	8.5793E+13
Ce-141	1.2632E+00	4.4333E-08	1.8935E+17	3.8592E+15
Ce-143	7.5113E-01	1.1311E-09	4.7633E+15	2.9131E+15
Ce-144	1.0310E+00	3.2325E-07	1.3519E+18	3.1229E+15
Pr-143	5.0591E-01	7.5129E-09	3.1639E+16	1.5008E+15
Nd-147	1.8945E-01	2.3418E-09	9.5938E+15	5.9067E+14
Np-239	1.0910E+01	4.7028E-08	1.1850E+17	3.8071E+16
Pu-238	4.1728E-03	2.4374E-07	6.1674E+17	1.2624E+13
Pu-239	3.6642E-04	5.8951E-06	1.4854E+19	1.1072E+12
Pu-240	6.8448E-04	3.0038E-06	7.5373E+18	2.0709E+12
Pu-241	1.4751E-01	1.4320E-06	3.5782E+18	4.4632E+14
Am-241	9.9454E-05	2.8977E-08	7.2408E+16	2.9995E+11
Cm-242	2.4982E-02	7.5376E-09	1.8757E+16	7.5735E+13
Cm-244	1.6578E-03	2.0492E-08	5.0576E+16	5.0160E+12

RB Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	3.9008E+23	0.0000E+00	
Elemental I (atoms)	1.7407E+18	0.0000E+00	
Organic I (atoms)	1.6936E+19	0.0000E+00	
Aerosols (kg)	1.6888E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.6753E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0350E-08
Total I (Ci)			2.4023E+03

DW to RB Transport Group Inventory:

Time (h) = 24.0000 Leakage Transport	
Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1204E+18
Organic I (atoms)	1.8784E+19
Aerosols (kg)	1.6832E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	1.1102E-10	3.4913E-18	3.6251E+07	7.7582E+05
Co-60	1.3413E-10	1.1866E-16	1.1910E+09	9.3237E+05
Kr-85	3.6373E-01	9.2708E-07	6.5682E+18	6.3668E+14
Kr-85m	1.4627E-01	1.7774E-11	1.2592E+14	1.3782E+15
Kr-87	2.5064E-05	8.8484E-16	6.1249E+09	1.6645E+14
Kr-88	4.6644E-02	3.7198E-12	2.5456E+13	1.6077E+15
Rb-86	7.2528E-09	8.9136E-17	6.2417E+08	6.1262E+07
Sr-89	1.8746E-07	6.4525E-15	4.3661E+10	1.3129E+09
Sr-90	2.4987E-08	1.8318E-13	1.2257E+12	1.7366E+08
Sr-91	4.1033E-08	1.1319E-17	7.4909E+07	8.2833E+08
Sr-92	5.3165E-10	4.2297E-20	2.7687E+05	2.4556E+08

Y-90	5.6777E-09	1.0436E-17	6.9829E+07	1.7586E+07
Y-91	2.8769E-09	1.1731E-16	7.7633E+08	1.8575E+07
Y-92	5.2993E-09	5.5073E-19	3.6050E+06	2.7905E+08
Y-93	5.2423E-10	1.5713E-19	1.0175E+06	9.8944E+06
Zr-95	2.9129E-09	1.3559E-16	8.5952E+08	2.0368E+07
Zr-97	1.0653E-09	5.5725E-19	3.4596E+06	1.3242E+07
Nb-95	2.9495E-09	7.5429E-17	4.7815E+08	2.0499E+07
Mo-99	2.9291E-08	6.1072E-17	3.7150E+08	2.3511E+08
Tc-99m	2.9344E-08	5.5806E-18	3.3947E+07	2.1733E+08
Ru-103	3.2130E-08	9.9553E-16	5.8206E+09	2.2553E+08
Ru-105	5.5014E-10	8.1841E-20	4.6939E+05	4.3405E+07
Ru-106	1.4198E-08	4.2437E-15	2.4110E+10	9.8776E+07
Rh-105	1.5667E-08	1.8562E-17	1.0646E+08	1.3726E+08
Sb-127	3.1356E-08	1.1741E-16	5.5676E+08	2.4145E+08
Sb-129	2.4663E-09	4.3859E-19	2.0475E+06	2.0960E+08
Te-127	3.5000E-08	1.3262E-17	6.2886E+07	2.4971E+08
Te-127m	6.3632E-09	6.7460E-16	3.1988E+09	4.4230E+07
Te-129	2.1340E-08	1.0190E-18	4.7570E+06	3.0797E+08
Te-129m	2.0674E-08	6.8626E-16	3.2037E+09	1.4513E+08
Te-131m	4.5313E-08	5.6826E-17	2.6123E+08	4.3431E+08
Te-132	4.5758E-07	1.5072E-15	6.8762E+09	3.5904E+09
I-131	2.7864E-03	2.2476E-11	1.0332E+14	6.3300E+12
I-132	5.4060E-05	5.2373E-15	2.3894E+10	9.6178E+11
I-133	2.8377E-03	2.5050E-12	1.1342E+13	8.8395E+12
I-135	4.8167E-04	1.3716E-13	6.1183E+11	3.6908E+12
Xe-133	3.4325E+01	1.8338E-07	8.3032E+17	6.2910E+16
Xe-135	3.0088E+00	1.1782E-09	5.2558E+15	1.0856E+16
Cs-134	8.2268E-07	6.3585E-13	2.8576E+12	6.7985E+09
Cs-136	2.3365E-07	3.1880E-15	1.4117E+10	1.9925E+09
Cs-137	6.6258E-07	7.6175E-12	3.3484E+13	5.4727E+09
Ba-140	2.7776E-07	3.7941E-15	1.6320E+10	1.9907E+09
La-140	9.4774E-08	1.7051E-16	7.3345E+08	2.9997E+08
La-141	4.0001E-11	7.0731E-21	3.0209E+04	4.4763E+06
Ce-141	6.7930E-09	2.3841E-16	1.0182E+09	4.7759E+07
Ce-143	4.0392E-09	6.0824E-18	2.5615E+07	3.7575E+07
Ce-144	5.5443E-09	1.7383E-15	7.2696E+09	3.8585E+07
Pr-143	2.7204E-09	4.0399E-17	1.7013E+08	1.8471E+07
Nd-147	1.0188E-09	1.2593E-17	5.1591E+07	7.3380E+06
Np-239	5.8670E-08	2.5290E-16	6.3723E+08	4.8261E+08
Pu-238	2.2439E-11	1.3107E-15	3.3165E+09	1.5594E+05
Pu-239	1.9704E-12	3.1701E-14	7.9877E+10	1.3674E+04
Pu-240	3.6808E-12	1.6153E-14	4.0532E+10	2.5580E+04
Pu-241	7.9324E-10	7.7004E-15	1.9242E+10	5.5132E+06
Am-241	5.3481E-13	1.5582E-16	3.8937E+08	3.7030E+03
Cm-242	1.3434E-10	4.0533E-17	1.0087E+08	9.3587E+05
Cm-244	8.9150E-12	1.1019E-16	2.7197E+08	6.1961E+04

CR Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	7.4040E+18	0.0000E+00	
Elemental I (atoms)	9.6313E+12	0.0000E+00	
Organic I (atoms)	1.0554E+14	0.0000E+00	
Aerosols (kg)	8.5460E-12	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.1444E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2542E-12
Total I (Ci)			6.1598E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5113E+19
Elemental I (atoms)	0.0000E+00	4.0625E+14
Organic I (atoms)	0.0000E+00	1.1938E+15
Aerosols (kg)	0.0000E+00	3.9310E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.6503E+19
Elemental I (atoms)	8.7671E+14	2.7115E+13

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Organic I (atoms)      2.6051E+15  8.0569E+13
Aerosols (kg)          8.4816E-10  2.6232E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    7.4134E+19  0.0000E+00
Elemental I (atoms)    4.1768E+14  0.0000E+00
Organic I (atoms)      1.1550E+15  0.0000E+00
Aerosols (kg)          4.1076E-10  0.0000E+00

EAB Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.6126E-01  8.6748E+00  9.2765E-01
Accumulated dose (rem)  2.4895E+00  1.9762E+01  3.0999E+00

LPZ Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8323E+00  1.5796E+01  2.3174E+00
Accumulated dose (rem)  1.9345E+01  7.7248E+01  2.1745E+01

CR Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.5212E-02  8.6598E+00  3.5123E-01
Accumulated dose (rem)  6.8607E-01  3.6667E+01  1.8229E+00

DW Compartment Nuclide Inventory:

Time (h) =  48.0000       Ci           kg          Atoms       Decay
Co-58                  3.4683E-03  1.0907E-10  1.1325E+15  4.3809E+15
Co-60                  4.2301E-03  3.7421E-09  3.7560E+16  5.2461E+15
Kr-85                  1.3132E+06  3.3471E+00  2.3714E+25  8.3120E+21
Kr-85m                 1.2886E+04  1.5658E-06  1.1094E+19  1.6041E+22
Kr-87                  1.8853E-04  6.6557E-15  4.6071E+10  5.9973E+21
Kr-88                  4.8140E+02  3.8391E-08  2.6273E+17  2.5109E+22
Rb-86                  1.1339E-01  1.3936E-09  9.7584E+15  3.1549E+17
Sr-89                  5.8334E+00  2.0079E-07  1.3586E+18  7.4248E+18
Sr-90                  7.8823E-01  5.7785E-06  3.8665E+19  9.7700E+17
Sr-91                  2.2470E-01  6.1987E-11  4.1022E+14  8.3939E+18
Sr-92                  3.6195E-05  2.8796E-15  1.8849E+10  6.9594E+18
Y-90                   3.1617E-01  5.8113E-10  3.8885E+15  1.1264E+16
Y-91                   9.1824E-02  3.7443E-09  2.4779E+16  9.4327E+16
Y-92                   1.8661E-03  1.9394E-13  1.2695E+12  1.1705E+17
Y-93                   3.1855E-03  9.5480E-13  6.1827E+12  9.7183E+16
Zr-95                  9.0906E-02  4.2316E-09  2.6824E+16  1.1506E+17
Zr-97                  1.2559E-02  6.5694E-12  4.0785E+13  1.0549E+17
Nb-95                  9.3002E-02  2.3784E-09  1.5077E+16  1.1536E+17
Mo-99                  7.1819E-01  1.4974E-09  9.1089E+15  1.4524E+18
Tc-99m                 7.3496E-01  1.3977E-10  8.5023E+14  1.2936E+18
Ru-103                 9.9590E-01  3.0858E-08  1.8042E+17  1.2773E+18
Ru-105                 4.0950E-04  6.0920E-14  3.4940E+11  7.4532E+17
Ru-106                 4.4707E-01  1.3363E-07  7.5919E+17  5.5610E+17
Rh-105                 3.1029E-01  3.6761E-10  2.1084E+15  8.5169E+17
Sb-127                 8.2623E-01  3.0939E-09  1.4671E+16  1.4527E+18
Sb-129                 1.6544E-03  2.9420E-13  1.3734E+12  3.6878E+18
Te-127                 9.7995E-01  3.7132E-10  1.7607E+15  1.4454E+18
Te-127m                2.0051E-01  2.1257E-08  1.0080E+17  2.4884E+17
Te-129                 5.5487E-01  2.6495E-11  1.2369E+14  3.8600E+18
Te-129m                6.3899E-01  2.1211E-08  9.9020E+16  8.1990E+17
Te-131m                8.2106E-01  1.0297E-09  4.7334E+15  2.9892E+18
Te-132                 1.1669E+01  3.8438E-08  1.7536E+17  2.1863E+19
I-131                  2.6392E+04  2.1288E-04  9.7864E+20  3.2658E+20
I-132                  1.3971E+01  1.3535E-09  6.1750E+15  2.3112E+20
I-133                  1.3168E+04  1.1624E-05  5.2634E+19  4.9562E+20
I-135                  4.0147E+02  1.1432E-07  5.0996E+17  3.3329E+20
Xe-133                 1.0861E+08  5.8023E-01  2.6272E+24  7.8467E+23
Xe-135                 1.7444E+06  6.8307E-04  3.0470E+21  1.0758E+23
Cs-134                 1.3336E+01  1.0308E-05  4.6324E+19  3.4554E+19
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Cs-136	3.5958E+00	4.9062E-08	2.1725E+17	1.0320E+19
Cs-137	1.0750E+01	1.2359E-04	5.4328E+20	2.7807E+19
Ba-139	3.1321E-10	1.9148E-20	8.2960E+04	6.3347E+18
Ba-140	8.2987E+00	1.1336E-07	4.8761E+17	1.1431E+19
La-140	4.8373E+00	8.7028E-09	3.7435E+16	1.3973E+17
La-141	1.8310E-05	3.2377E-15	1.3828E+10	8.5924E+16
La-142	3.6095E-11	2.5215E-21	1.0693E+04	6.0277E+16
Ce-141	2.0985E-01	7.3647E-09	3.1455E+16	2.7056E+17
Ce-143	7.6974E-02	1.1591E-10	4.8813E+14	2.5407E+17
Ce-144	1.7449E-01	5.4707E-08	2.2878E+17	2.1727E+17
Pr-143	8.6375E-02	1.2827E-09	5.4018E+15	1.0162E+17
Nd-147	3.0174E-02	3.7299E-10	1.5280E+15	4.2274E+16
Np-239	1.3790E+00	5.9441E-09	1.4978E+16	3.0275E+18
Pu-238	7.0800E-04	4.1356E-08	1.0464E+17	8.7726E+14
Pu-239	6.2289E-05	1.0021E-06	2.5251E+18	7.6844E+13
Pu-240	1.1612E-04	5.0960E-07	1.2787E+18	1.4391E+14
Pu-241	2.5022E-02	2.4290E-07	6.0697E+17	3.1019E+16
Am-241	1.6980E-05	4.9474E-09	1.2363E+16	2.0782E+13
Cm-242	4.2202E-03	1.2733E-09	3.1686E+15	5.2736E+15
Cm-244	2.8122E-04	3.4761E-09	8.5793E+15	3.4860E+14

DW Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	2.6344E+25	0.0000E+00	
Elemental I (atoms)	2.9930E+19	4.8566E+22	
Organic I (atoms)	9.9990E+20	0.0000E+00	
Aerosols (kg)	1.4262E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		6.7323E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		7.0502E-06
Total I (Ci)			3.9976E+04

DW to RB Transport Group Inventory:

Time (h) = 48.0000 Leakage Transport

Noble gases (atoms)	5.9392E+23
Elemental I (atoms)	2.3630E+18
Organic I (atoms)	2.6889E+19
Aerosols (kg)	1.6843E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 48.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8483E+23
Elemental I (atoms)	0.0000E+00	1.0730E+18
Organic I (atoms)	0.0000E+00	8.4175E+18
Aerosols (kg)	0.0000E+00	8.8436E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 48.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8483E+23
Elemental I (atoms)	0.0000E+00	1.0730E+18
Organic I (atoms)	0.0000E+00	8.4175E+18
Aerosols (kg)	0.0000E+00	8.8436E-04

RB Compartment Nuclide Inventory:

Time (h) = 48.0000	Ci	kg	Atoms	Decay
Co-58	2.0470E-02	6.4375E-10	6.6840E+15	1.2847E+14
Co-60	2.4966E-02	2.2086E-08	2.2168E+17	1.5525E+14
Kr-85	2.9068E+04	7.4091E-02	5.2492E+23	1.0769E+20
Kr-85m	2.8524E+02	3.4661E-08	2.4557E+17	6.4498E+19
Kr-87	4.1732E-06	1.4733E-16	1.0198E+09	6.9471E+18
Kr-88	1.0656E+01	8.4982E-10	5.8156E+15	6.4851E+19
Rb-86	1.3845E+00	1.7015E-08	1.1915E+17	9.0350E+15
Sr-89	3.4429E+01	1.1851E-06	8.0187E+18	2.1691E+17
Sr-90	4.6521E+00	3.4105E-05	2.2820E+20	2.8922E+16
Sr-91	1.3262E+00	3.6585E-10	2.4211E+15	7.0741E+16
Sr-92	2.1363E-04	1.6996E-14	1.1125E+11	1.7360E+16
Y-90	1.8863E+00	3.4670E-09	2.3199E+16	6.3734E+15

Y-91	5.4729E-01	2.2316E-08	1.4768E+17	3.2599E+15
Y-92	1.1472E-02	1.1922E-12	7.8038E+12	1.7821E+16
Y-93	1.8801E-02	5.6352E-12	3.6491E+13	8.6398E+14
Zr-95	5.3653E-01	2.4975E-08	1.5832E+17	3.3707E+15
Zr-97	7.4121E-02	3.8773E-11	2.4072E+14	1.3937E+15
Nb-95	5.4890E-01	1.4037E-08	8.8983E+16	3.4128E+15
Mo-99	4.2388E+00	8.8379E-09	5.3761E+16	3.4015E+16
Tc-99m	4.3377E+00	8.2494E-10	5.0181E+15	3.2074E+16
Ru-103	5.8778E+00	1.8212E-07	1.0648E+18	3.7174E+16
Ru-105	2.4169E-03	3.5955E-13	2.0621E+12	3.0389E+15
Ru-106	2.6386E+00	7.8869E-07	4.4807E+18	1.6433E+16
Rh-105	1.8313E+00	2.1697E-09	1.2444E+16	1.8189E+16
Sb-127	4.8764E+00	1.8260E-08	8.6587E+16	3.6305E+16
Sb-129	9.7642E-03	1.7364E-12	8.1059E+12	1.4633E+16
Te-127	5.7837E+00	2.1915E-09	1.0392E+16	3.8998E+16
Te-127m	1.1834E+00	1.2546E-07	5.9491E+17	7.3634E+15
Te-129	3.2748E+00	1.5637E-10	7.3001E+14	3.0259E+16
Te-129m	3.7713E+00	1.2519E-07	5.8442E+17	2.3904E+16
Te-131m	4.8459E+00	6.0771E-09	2.7937E+16	5.4227E+16
Te-132	6.8873E+01	2.2686E-07	1.0350E+18	5.3041E+17
I-131	1.1624E+03	9.3760E-06	4.3102E+19	6.2598E+18
I-132	8.2209E+01	7.9643E-09	3.6335E+16	9.7855E+17
I-133	5.7964E+02	5.1168E-07	2.3169E+18	6.4390E+18
I-135	1.7672E+01	5.0322E-09	2.2448E+16	1.9652E+18
Xe-133	2.4042E+06	1.2844E-02	5.8157E+22	9.7908E+21
Xe-135	3.8642E+04	1.5131E-05	6.7499E+19	7.6065E+20
Cs-134	1.6283E+02	1.2585E-04	5.6560E+20	1.0252E+18
Cs-136	4.3903E+01	5.9903E-07	2.6525E+18	2.9106E+17
Cs-137	1.3126E+02	1.5090E-03	6.6332E+21	8.2570E+17
Ba-139	1.8486E-09	1.1301E-19	4.8963E+05	8.0676E+15
Ba-140	4.8979E+01	6.6904E-07	2.8779E+18	3.2119E+17
La-140	2.8829E+01	5.1867E-08	2.2311E+17	1.0315E+17
La-141	1.0807E-04	1.9109E-14	8.1614E+10	3.1033E+14
La-142	2.1303E-10	1.4882E-20	6.3113E+04	8.5796E+13
Ce-141	1.2382E+00	4.3455E-08	1.8560E+17	7.8575E+15
Ce-143	4.5430E-01	6.8410E-10	2.8809E+15	4.8004E+15
Ce-144	1.0298E+00	3.2288E-07	1.3503E+18	6.4171E+15
Pr-143	5.1072E-01	7.5844E-09	3.1940E+16	3.1279E+15
Nd-147	1.7809E-01	2.2014E-09	9.0184E+15	1.1780E+15
Np-239	8.1388E+00	3.5082E-08	8.8398E+16	6.8304E+16
Pu-238	4.1786E-03	2.4408E-07	6.1760E+17	2.5973E+13
Pu-239	3.6763E-04	5.9146E-06	1.4903E+19	2.2805E+12
Pu-240	6.8535E-04	3.0077E-06	7.5470E+18	4.2605E+12
Pu-241	1.4768E-01	1.4336E-06	3.5823E+18	9.1817E+14
Am-241	1.0023E-04	2.9203E-08	7.2972E+16	6.1908E+11
Cm-242	2.4907E-02	7.5152E-09	1.8701E+16	1.5548E+14
Cm-244	1.6598E-03	2.0516E-08	5.0635E+16	1.0319E+13

RB Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	5.8315E+23	0.0000E+00	
Elemental I (atoms)	1.7353E+18	0.0000E+00	
Organic I (atoms)	2.2232E+19	0.0000E+00	
Aerosols (kg)	1.6888E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7546E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9391E-08
Total I (Ci)			1.8419E+03

DW to RB Transport Group Inventory:

Time (h) = 48.0000 Leakage Transport	
Noble gases (atoms)	5.9392E+23
Elemental I (atoms)	2.3630E+18
Organic I (atoms)	2.6889E+19
Aerosols (kg)	1.6843E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00

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Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  48.0000       Ci           kg          Atoms      Decay
Co-58                  1.2991E-11  4.0854E-19  4.2418E+06  8.5662E+05
Co-60                  1.5844E-11  1.4016E-17  1.4068E+08  1.0303E+06
Kr-85                  1.5425E-01  3.9315E-07  2.7854E+18  1.1252E+15
Kr-85m                 1.5136E-03  1.8392E-13  1.3031E+12  1.4336E+15
Kr-88                  5.6545E-05  4.5094E-15  3.0859E+10  1.6197E+15
Rb-86                  8.1340E-10  9.9966E-18  7.0001E+07  6.6450E+07
Sr-89                  2.1849E-08  7.5207E-16  5.0889E+09  1.4492E+09
Sr-90                  2.9524E-09  2.1644E-14  1.4482E+11  1.9191E+08
Sr-91                  8.4164E-10  2.3218E-19  1.5365E+06  8.4567E+08
Y-90                   1.1967E-09  2.1995E-18  1.4717E+07  2.2929E+07
Y-91                   3.4721E-10  1.4158E-17  9.3694E+07  2.0701E+07
Y-93                   1.1932E-11  3.5763E-21  2.3158E+04  1.0122E+07
Zr-95                  3.4049E-10  1.5850E-17  1.0047E+08  2.2487E+07
Zr-97                  4.7039E-11  2.4606E-20  1.5276E+05  1.3799E+07
Nb-95                  3.4834E-10  8.9084E-18  5.6471E+07  2.2653E+07
Mo-99                  2.6900E-09  5.6088E-18  3.4118E+07  2.5462E+08
Tc-99m                 2.7528E-09  5.2353E-19  3.1846E+06  2.3608E+08
Ru-103                 3.7302E-09  1.1558E-16  6.7577E+08  2.4885E+08
Ru-106                 1.6745E-09  5.0052E-16  2.8436E+09  1.0914E+08
Rh-105                 1.1622E-09  1.3769E-18  7.8972E+06  1.4695E+08
Sb-127                 3.0947E-09  1.1588E-17  5.4950E+07  2.6288E+08
Te-127                 3.6705E-09  1.3908E-18  6.5950E+06  2.7340E+08
Te-127m                7.5102E-10  7.9620E-17  3.7754E+08  4.8876E+07
Te-129                 2.0783E-09  9.9239E-20  4.6328E+05  3.1851E+08
Te-129m                2.3934E-09  7.9447E-17  3.7089E+08  1.6012E+08
Te-131m                3.0753E-09  3.8567E-18  1.7729E+07  4.6148E+08
Te-132                 4.3709E-08  1.4397E-16  6.5683E+08  3.8994E+09
I-131                  1.0262E-03  8.2774E-12  3.8052E+13  9.7908E+12
I-132                  3.3576E-06  3.2528E-16  1.4840E+09  9.9115E+11
I-133                  5.1191E-04  4.5190E-13  2.0461E+12  1.1404E+13
I-135                  1.5607E-05  4.4442E-15  1.9825E+10  3.9313E+12
Xe-133                 1.2757E+01  6.8153E-08  3.0859E+17  1.0617E+17
Xe-135                 2.0490E-01  8.0236E-11  3.5792E+14  1.2766E+16
Cs-134                 9.5667E-08  7.3941E-14  3.3230E+11  7.3950E+09
Cs-136                 2.5794E-08  3.5194E-16  1.5584E+09  2.1587E+09
Cs-137                 7.7116E-08  8.8658E-13  3.8972E+12  5.9533E+09
Ba-140                 3.1083E-08  4.2459E-16  1.8264E+09  2.1895E+09
La-140                 1.8290E-08  3.2906E-17  1.4154E+08  3.8580E+08
Ce-141                 7.8579E-10  2.7578E-17  1.1779E+08  5.2682E+07
Ce-143                 2.8831E-10  4.3415E-19  1.8283E+06  4.0038E+07
Ce-144                 6.5355E-10  2.0491E-16  8.5693E+08  4.2631E+07
Pr-143                 3.2410E-10  4.8129E-18  2.0269E+07  2.0467E+07
Nd-147                 1.1302E-10  1.3971E-18  5.7233E+06  8.0648E+06
Np-239                 5.1651E-09  2.2264E-17  5.6100E+07  5.2109E+08
Pu-238                 2.6518E-12  1.5490E-16  3.9194E+08  1.7233E+05
Pu-239                 2.3331E-13  3.7536E-15  9.4580E+09  1.5114E+04
Pu-240                 4.3494E-13  1.9088E-15  4.7895E+09  2.8269E+04
Pu-241                 9.3722E-11  9.0981E-16  2.2734E+09  6.0927E+06
Am-241                 6.3608E-14  1.8533E-17  4.6310E+07  4.0946E+03
Cm-242                 1.5807E-11  4.7693E-18  1.1868E+07  1.0339E+06
Cm-244                 1.0533E-12  1.3020E-17  3.2134E+07  6.8473E+04

CR Transport Group Inventory:
Time (h) =  48.0000    Atmosphere     Sump
Noble gases (atoms)    3.0944E+18  0.0000E+00
Elemental I (atoms)    1.4686E+12  0.0000E+00
Organic I (atoms)      3.8638E+13  0.0000E+00
Aerosols (kg)          9.9453E-13  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          3.8876E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    4.0715E-13
Total I (Ci)                                    1.5571E-03

Environment to CR Unfiltered Transport Group Inventory:

                        Pathway
Time (h) =  48.0000    Filtered   Transported
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Noble gases (atoms)    0.0000E+00  4.1852E+19
Elemental I (atoms)    0.0000E+00  4.4134E+14
Organic I (atoms)      0.0000E+00  1.8720E+15
Aerosols (kg)          0.0000E+00  4.2216E-10

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =  48.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.4165E+19
Elemental I (atoms)    9.5330E+14  2.9483E+13
Organic I (atoms)      4.0852E+15  1.2635E+14
Aerosols (kg)          9.1157E-10  2.8193E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  48.0000     Filtered   Transported
Noble gases (atoms)    1.3277E+20  0.0000E+00
Elemental I (atoms)    4.6291E+14  0.0000E+00
Organic I (atoms)      1.9394E+15  0.0000E+00
Aerosols (kg)          4.4929E-10  0.0000E+00

EAB Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.9802E-01  7.9808E+00  7.4201E-01
Accumulated dose (rem)  2.9875E+00  2.7743E+01  3.8419E+00

LPZ Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3800E+00  1.4532E+01  1.8243E+00
Accumulated dose (rem)  2.0725E+01  9.1780E+01  2.3570E+01

CR Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.7517E-02  7.2566E+00  2.7937E-01
Accumulated dose (rem)  7.4359E-01  4.3923E+01  2.1023E+00

DW Compartment Nuclide Inventory:

Time (h) =  72.0000       Ci           kg          Atoms      Decay
Co-58                  3.3932E-03  1.0671E-10  1.1080E+15  4.3918E+15
Co-60                  4.1777E-03  3.6959E-09  3.7095E+16  5.2596E+15
Kr-85                  1.2972E+06  3.3063E+00  2.3425E+25  1.2483E+22
Kr-85m                 3.1061E+02  3.7743E-08  2.6740E+17  1.6052E+22
Kr-87                  3.8799E-10  1.3698E-20  9.4815E+04  5.9973E+21
Kr-88                  1.3594E+00  1.0841E-10  7.4189E+14  2.5110E+22
Rb-86                  1.0794E-01  1.3266E-09  9.2896E+15  3.1584E+17
Sr-89                  5.6847E+00  1.9567E-07  1.3240E+18  7.4432E+18
Sr-90                  7.7871E-01  5.7087E-06  3.8198E+19  9.7951E+17
Sr-91                  3.8536E-02  1.0631E-11  7.0350E+13  8.3942E+18
Sr-92                  7.7171E-08  6.1396E-18  4.0188E+07  6.9594E+18
Y-90                   4.2009E-01  7.7213E-10  5.1665E+15  1.2435E+16
Y-91                   9.0170E-02  3.6768E-09  2.4332E+16  9.4618E+16
Y-92                   1.7677E-05  1.8371E-15  1.2025E+10  1.1705E+17
Y-93                   6.0619E-04  1.8169E-13  1.1766E+12  9.7188E+16
Zr-95                  8.8846E-02  4.1357E-09  2.6216E+16  1.1535E+17
Zr-97                  4.6365E-03  2.4254E-12  1.5058E+13  1.0552E+17
Nb-95                  9.1818E-02  2.3481E-09  1.4885E+16  1.1565E+17
Mo-99                  5.5147E-01  1.1498E-09  6.9944E+15  1.4544E+18
Tc-99m                 5.6531E-01  1.0751E-10  6.5398E+14  1.2955E+18
Ru-103                 9.6672E-01  2.9954E-08  1.7513E+17  1.2804E+18
Ru-105                 9.5459E-06  1.4201E-15  8.1448E+09  7.4532E+17
Ru-106                 4.4087E-01  1.3178E-07  7.4865E+17  5.5752E+17
Rh-105                 1.9155E-01  2.2694E-10  1.3016E+15  8.5247E+17
Sb-127                 6.8180E-01  2.5531E-09  1.2106E+16  1.4551E+18
Sb-129                 3.4754E-05  6.1802E-15  2.8851E+10  3.6878E+18
Te-127                 8.4559E-01  3.2041E-10  1.5193E+15  1.4483E+18
Te-127m                1.9770E-01  2.0959E-08  9.9383E+16  2.4948E+17
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Te-129	5.3480E-01	2.5537E-11	1.1921E+14	3.8613E+18
Te-129m	6.1842E-01	2.0528E-08	9.5833E+16	8.2191E+17
Te-131m	4.6591E-01	5.8428E-10	2.6860E+15	2.9912E+18
Te-132	9.3199E+00	3.0699E-08	1.4005E+17	2.1896E+19
I-131	2.3921E+04	1.9295E-04	8.8701E+20	4.0692E+20
I-132	1.1124E+01	1.0777E-09	4.9168E+15	2.3116E+20
I-133	5.8469E+03	5.1614E-06	2.3371E+19	5.2444E+20
I-135	3.2019E+01	9.1174E-09	4.0671E+16	3.3376E+20
Xe-133	9.4020E+07	5.0229E-01	2.2744E+24	1.1079E+24
Xe-135	2.7651E+05	1.0828E-04	4.8300E+20	1.1013E+23
Cs-134	1.3164E+01	1.0174E-05	4.5725E+19	3.4597E+19
Cs-136	3.3695E+00	4.5974E-08	2.0358E+17	1.0331E+19
Cs-137	1.0620E+01	1.2210E-04	5.3672E+20	2.7841E+19
Ba-140	7.7648E+00	1.0606E-07	4.5624E+17	1.1457E+19
La-140	5.8805E+00	1.0580E-08	4.5509E+16	1.5681E+17
La-141	2.6248E-07	4.6412E-17	1.9823E+08	8.5924E+16
Ce-141	2.0295E-01	7.1227E-09	3.0421E+16	2.7122E+17
Ce-143	4.5937E-02	6.9173E-11	2.9131E+14	2.5427E+17
Ce-144	1.7197E-01	5.3918E-08	2.2549E+17	2.1783E+17
Pr-143	8.4058E-02	1.2483E-09	5.2569E+15	1.0189E+17
Nd-147	2.7988E-02	3.4596E-10	1.4173E+15	4.2367E+16
Np-239	1.0150E+00	4.3754E-09	1.1025E+16	3.0313E+18
Pu-238	6.9956E-04	4.0863E-08	1.0340E+17	8.7951E+14
Pu-239	6.1634E-05	9.9159E-07	2.4985E+18	7.7042E+13
Pu-240	1.1473E-04	5.0348E-07	1.2633E+18	1.4428E+14
Pu-241	2.4718E-02	2.3995E-07	5.9959E+17	3.1098E+16
Am-241	1.6885E-05	4.9196E-09	1.2293E+16	2.0836E+13
Cm-242	4.1517E-03	1.2527E-09	3.1173E+15	5.2870E+15
Cm-244	2.7782E-04	3.4339E-09	8.4753E+15	3.4949E+14

DW Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5700E+25	0.0000E+00	
Elemental I (atoms)	2.6410E+19	4.8566E+22	
Organic I (atoms)	8.8229E+20	0.0000E+00	
Aerosols (kg)	1.4083E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.8612E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.0005E-06
Total I (Ci)			2.9811E+04

DW to RB Transport Group Inventory:

Time (h) = 72.0000	Leakage Transport
Noble gases (atoms)	7.8910E+23
Elemental I (atoms)	2.5742E+18
Organic I (atoms)	3.3944E+19
Aerosols (kg)	1.6853E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.4453E+23
Elemental I (atoms)	0.0000E+00	1.1376E+18
Organic I (atoms)	0.0000E+00	1.0576E+19
Aerosols (kg)	0.0000E+00	8.8469E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.4453E+23
Elemental I (atoms)	0.0000E+00	1.1376E+18
Organic I (atoms)	0.0000E+00	1.0576E+19
Aerosols (kg)	0.0000E+00	8.8469E-04

RB Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	2.0296E-02	6.3828E-10	6.6272E+15	1.9363E+14
Co-60	2.4988E-02	2.2106E-08	2.2188E+17	2.3510E+14
Kr-85	3.8851E+04	9.9026E-02	7.0158E+23	2.1694E+20

Kr-85m	9.3028E+00	1.1304E-09	8.0089E+15	6.4759E+19
Kr-88	4.0714E-02	3.2469E-12	2.2220E+13	6.4857E+19
Rb-86	1.3348E+00	1.6404E-08	1.1487E+17	1.3381E+16
Sr-89	3.4002E+01	1.1704E-06	7.9194E+18	3.2629E+17
Sr-90	4.6577E+00	3.4146E-05	2.2848E+20	4.3803E+16
Sr-91	2.3050E-01	6.3585E-11	4.2079E+14	7.2743E+16
Sr-92	4.6159E-07	3.6723E-17	2.4038E+08	1.7360E+16
Y-90	2.5283E+00	4.6470E-09	3.1094E+16	1.3393E+16
Y-91	5.4461E-01	2.2207E-08	1.4696E+17	5.0065E+15
Y-92	1.0990E-04	1.1421E-14	7.4761E+10	1.7829E+16
Y-93	3.6258E-03	1.0868E-12	7.0374E+12	8.9346E+14
Zr-95	5.3142E-01	2.4737E-08	1.5681E+17	5.0778E+15
Zr-97	2.7733E-02	1.4507E-11	9.0065E+13	1.5446E+15
Nb-95	5.4919E-01	1.4045E-08	8.9031E+16	5.1674E+15
Mo-99	3.2986E+00	6.8775E-09	4.1836E+16	4.6001E+16
Tc-99m	3.3813E+00	6.4305E-10	3.9117E+15	4.3733E+16
Ru-103	5.7823E+00	1.7916E-07	1.0475E+18	5.5812E+16
Ru-105	5.7098E-05	8.4941E-15	4.8717E+10	3.0409E+15
Ru-106	2.6370E+00	7.8820E-07	4.4780E+18	2.4866E+16
Rh-105	1.1457E+00	1.3574E-09	7.7851E+15	2.2863E+16
Sb-127	4.0781E+00	1.5271E-08	7.2412E+16	5.0580E+16
Sb-129	2.0787E-04	3.6966E-14	1.7257E+11	1.4641E+16
Te-127	5.0578E+00	1.9165E-09	9.0876E+15	5.5727E+16
Te-127m	1.1825E+00	1.2536E-07	5.9445E+17	1.1145E+16
Te-129	3.1988E+00	1.5275E-10	7.1307E+14	3.8044E+16
Te-129m	3.6990E+00	1.2279E-07	5.7321E+17	3.5844E+16
Te-131m	2.7868E+00	3.4948E-09	1.6066E+16	6.6125E+16
Te-132	5.5746E+01	1.8362E-07	8.3772E+17	7.2887E+17
I-131	1.2471E+03	1.0059E-05	4.6244E+19	1.0131E+19
I-132	6.6538E+01	6.4462E-09	2.9409E+16	1.1840E+18
I-133	3.0462E+02	2.6891E-07	1.2176E+18	7.8131E+18
I-135	1.6682E+00	4.7501E-10	2.1190E+15	1.9870E+18
Xe-133	2.8160E+06	1.5044E-02	6.8120E+22	1.8229E+22
Xe-135	8.2878E+03	3.2454E-06	1.4477E+19	8.2453E+20
Cs-134	1.6278E+02	1.2581E-04	5.6542E+20	1.5457E+18
Cs-136	4.1666E+01	5.6850E-07	2.5173E+18	4.2781E+17
Cs-137	1.3133E+02	1.5098E-03	6.6368E+21	1.2454E+18
Ba-140	4.6444E+01	6.3441E-07	2.7289E+18	4.7368E+17
La-140	3.5358E+01	6.3613E-08	2.7364E+17	2.0543E+17
La-141	1.5700E-06	2.7761E-16	1.1857E+09	3.1041E+14
Ce-141	1.2136E+00	4.2592E-08	1.8191E+17	1.1776E+16
Ce-143	2.7476E-01	4.1375E-10	1.7424E+15	5.9418E+15
Ce-144	1.0286E+00	3.2250E-07	1.3487E+18	9.7073E+15
Pr-143	5.0367E-01	7.4796E-09	3.1499E+16	4.7505E+15
Nd-147	1.6741E-01	2.0693E-09	8.4774E+15	1.7301E+15
Np-239	6.0713E+00	2.6171E-08	6.5942E+16	9.0857E+16
Pu-238	4.1843E-03	2.4442E-07	6.1845E+17	3.9341E+13
Pu-239	3.6865E-04	5.9311E-06	1.4945E+19	3.4575E+12
Pu-240	6.8622E-04	3.0115E-06	7.5565E+18	6.4528E+12
Pu-241	1.4785E-01	1.4352E-06	3.5864E+18	1.3906E+15
Am-241	1.0100E-04	2.9429E-08	7.3537E+16	9.4070E+11
Cm-242	2.4833E-02	7.4927E-09	1.8645E+16	2.3499E+14
Cm-244	1.6617E-03	2.0540E-08	5.0694E+16	1.5628E+13

RB Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	7.6972E+23	0.0000E+00	
Elemental I (atoms)	1.7494E+18	0.0000E+00	
Organic I (atoms)	2.6517E+19	0.0000E+00	
Aerosols (kg)	1.6890E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8690E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9668E-08
Total I (Ci)			1.6199E+03

DW to RB Transport Group Inventory:

Time (h) = 72.0000	Leakage Transport
Noble gases (atoms)	7.8910E+23
Elemental I (atoms)	2.5742E+18
Organic I (atoms)	3.3944E+19
Aerosols (kg)	1.6853E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	4.1920E-12	1.3183E-19	1.3688E+06	8.8101E+05
Co-60	5.1612E-12	4.5659E-18	4.5827E+07	1.0602E+06
Kr-85	1.6154E-01	4.1173E-07	2.9170E+18	1.6332E+15
Kr-85m	3.8679E-05	4.7001E-15	3.3299E+10	1.4349E+15
Kr-88	1.6928E-07	1.3500E-17	9.2385E+07	1.6198E+15
Rb-86	2.5214E-10	3.0988E-18	2.1699E+07	6.7953E+07
Sr-89	7.0230E-09	2.4174E-16	1.6357E+09	1.4901E+09
Sr-90	9.6202E-10	7.0526E-15	4.7191E+10	1.9747E+08
Sr-91	4.7607E-11	1.3133E-20	8.6911E+04	8.4653E+08
Y-90	5.2203E-10	9.5951E-19	6.4203E+06	2.5483E+07
Y-91	1.1243E-10	4.5845E-18	3.0339E+07	2.1354E+07
Zr-95	1.0976E-10	5.1092E-18	3.2388E+07	2.3126E+07
Zr-97	5.7280E-12	2.9963E-21	1.8602E+04	1.3861E+07
Nb-95	1.1343E-10	2.9008E-18	1.8389E+07	2.3309E+07
Mo-99	6.8130E-10	1.4205E-18	8.6409E+06	2.5920E+08
Tc-99m	6.9839E-10	1.3282E-19	8.0793E+05	2.4054E+08
Ru-103	1.1943E-09	3.7005E-17	2.1636E+08	2.5583E+08
Ru-106	5.4465E-10	1.6280E-16	9.2489E+08	1.1229E+08
Rh-105	2.3664E-10	2.8036E-19	1.6080E+06	1.4877E+08
Sb-127	8.4231E-10	3.1541E-18	1.4956E+07	2.6830E+08
Te-127	1.0446E-09	3.9583E-19	1.8770E+06	2.7974E+08
Te-127m	2.4423E-10	2.5893E-17	1.2278E+08	5.0291E+07
Te-129	6.6070E-10	3.1549E-20	1.4728E+05	3.2143E+08
Te-129m	7.6400E-10	2.5361E-17	1.1839E+08	1.6459E+08
Te-131m	5.7559E-10	7.2182E-19	3.3183E+06	4.6616E+08
Te-132	1.1514E-08	3.7926E-17	1.7303E+08	3.9751E+09
I-131	9.6622E-04	7.7937E-12	3.5828E+13	1.2978E+13
I-132	9.3366E-07	9.0452E-17	4.1266E+08	9.9800E+11
I-133	2.3614E-04	2.0845E-13	9.4387E+11	1.2545E+13
I-135	1.2931E-06	3.6822E-16	1.6426E+09	3.9497E+12
Xe-133	1.1708E+01	6.2550E-08	2.8322E+17	1.4550E+17
Xe-135	3.4435E-02	1.3484E-11	6.0150E+13	1.3074E+16
Cs-134	3.0749E-08	2.3766E-14	1.0681E+11	7.5744E+09
Cs-136	7.8706E-09	1.0739E-16	4.7552E+08	2.2060E+09
Cs-137	2.4808E-08	2.8521E-13	1.2537E+12	6.0979E+09
Ba-140	9.5928E-09	1.3103E-16	5.6364E+08	2.2468E+09
La-140	7.3011E-09	1.3135E-17	5.6503E+07	4.2332E+08
Ce-141	2.5066E-10	8.7972E-18	3.7573E+07	5.4150E+07
Ce-143	5.6751E-11	8.5457E-20	3.5989E+05	4.0485E+07
Ce-144	2.1245E-10	6.6610E-17	2.7857E+08	4.3862E+07
Pr-143	1.0402E-10	1.5447E-18	6.5053E+06	2.1074E+07
Nd-147	3.4577E-11	4.2741E-19	1.7510E+06	8.2725E+06
Np-239	1.2540E-09	5.4054E-18	1.3620E+07	5.2975E+08
Pu-238	8.6424E-13	5.0482E-17	1.2774E+08	1.7733E+05
Pu-239	7.6143E-14	1.2250E-15	3.0867E+09	1.5554E+04
Pu-240	1.4173E-13	6.2200E-16	1.5607E+09	2.9089E+04
Pu-241	3.0537E-11	2.9644E-16	7.4074E+08	6.2693E+06
Am-241	2.0862E-14	6.0783E-18	1.5188E+07	4.2148E+03
Cm-242	5.1291E-12	1.5476E-18	3.8511E+06	1.0636E+06
Cm-244	3.4322E-13	4.2423E-18	1.0470E+07	7.0459E+04

CR Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	3.2003E+18	0.0000E+00	
Elemental I (atoms)	6.6461E+11	0.0000E+00	
Organic I (atoms)	3.6106E+13	0.0000E+00	
Aerosols (kg)	3.1992E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.5160E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5996E-13
Total I (Ci)			1.2046E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9947E+19
Elemental I (atoms)	0.0000E+00	4.5580E+14
Organic I (atoms)	0.0000E+00	2.5263E+15
Aerosols (kg)	0.0000E+00	4.3190E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3488E+20
Elemental I (atoms)	9.8484E+14	3.0459E+13
Organic I (atoms)	5.5132E+15	1.7051E+14
Aerosols (kg)	9.3283E-10	2.8850E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	1.9143E+20	0.0000E+00
Elemental I (atoms)	4.7905E+14	0.0000E+00
Organic I (atoms)	2.6362E+15	0.0000E+00
Aerosols (kg)	4.6036E-10	0.0000E+00

EAB Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.2397E-01	7.1581E+00	6.4235E-01
Accumulated dose (rem)	3.4115E+00	3.4901E+01	4.4842E+00

LPZ Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.1748E+00	1.3034E+01	1.5724E+00
Accumulated dose (rem)	2.1900E+01	1.0481E+02	2.5142E+01

CR Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.9094E-02	6.5194E+00	2.4799E-01
Accumulated dose (rem)	7.9268E-01	5.0443E+01	2.3502E+00

DW Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	3.3198E-03	1.0440E-10	1.0840E+15	4.4025E+15
Co-60	4.1260E-03	3.6501E-09	3.6636E+16	5.2728E+15
Kr-85	1.2814E+06	3.2660E+00	2.3139E+25	1.6604E+22
Kr-85m	7.4869E+00	9.0976E-10	6.4455E+15	1.6052E+22
Kr-88	3.8386E-03	3.0613E-13	2.0949E+12	2.5110E+22
Rb-86	1.0276E-01	1.2629E-09	8.8433E+15	3.1618E+17
Sr-89	5.5399E+00	1.9069E-07	1.2903E+18	7.4612E+18
Sr-90	7.6930E-01	5.6397E-06	3.7737E+19	9.8198E+17
Sr-91	6.6087E-03	1.8231E-12	1.2065E+13	8.3943E+18
Sr-92	1.6453E-10	1.3090E-20	8.5685E+04	6.9594E+18
Y-90	4.9709E-01	9.1366E-10	6.1135E+15	1.3894E+16
Y-91	8.8126E-02	3.5935E-09	2.3781E+16	9.4903E+16
Y-92	1.6087E-07	1.6718E-17	1.0943E+08	1.1705E+17
Y-93	1.1536E-04	3.4576E-14	2.2389E+11	9.7189E+16
Zr-95	8.6832E-02	4.0419E-09	2.5622E+16	1.1563E+17
Zr-97	1.7118E-03	8.9542E-13	5.5591E+12	1.0553E+17
Nb-95	9.0631E-02	2.3178E-09	1.4692E+16	1.1594E+17
Mo-99	4.2346E-01	8.8291E-10	5.3707E+15	1.4559E+18
Tc-99m	4.3414E-01	8.2564E-11	5.0223E+14	1.2970E+18
Ru-103	9.3840E-01	2.9076E-08	1.7000E+17	1.2835E+18
Ru-105	2.2253E-07	3.3104E-17	1.8986E+08	7.4532E+17
Ru-106	4.3475E-01	1.2995E-07	7.3827E+17	5.5892E+17
Rh-105	1.1822E-01	1.4007E-10	8.0334E+14	8.5296E+17

Sb-127	5.6263E-01	2.1068E-09	9.9901E+15	1.4570E+18
Sb-129	7.3006E-07	1.2983E-16	6.0607E+08	3.6878E+18
Te-127	7.3075E-01	2.7689E-10	1.3130E+15	1.4507E+18
Te-127m	1.9479E-01	2.0650E-08	9.7920E+16	2.5010E+17
Te-129	5.1754E-01	2.4713E-11	1.1537E+14	3.8626E+18
Te-129m	5.9852E-01	1.9868E-08	9.2748E+16	8.2385E+17
Te-131m	2.6438E-01	3.3155E-10	1.5241E+15	2.9924E+18
Te-132	7.4435E+00	2.4518E-08	1.1186E+17	2.1923E+19
I-131	2.1682E+04	1.7489E-04	8.0397E+20	4.7973E+20
I-132	8.8846E+00	8.6073E-10	3.9268E+15	2.3118E+20
I-133	2.5962E+03	2.2918E-06	1.0377E+19	5.3724E+20
I-135	2.5536E+00	7.2715E-10	3.2437E+15	3.3379E+20
Xe-133	8.1392E+07	4.3483E-01	1.9689E+24	1.3877E+24
Xe-135	4.3824E+04	1.7161E-05	7.6552E+19	1.1053E+23
Cs-134	1.2994E+01	1.0043E-05	4.5134E+19	3.4638E+19
Cs-136	3.1574E+00	4.3081E-08	1.9076E+17	1.0341E+19
Cs-137	1.0492E+01	1.2062E-04	5.3023E+20	2.7875E+19
Ba-140	7.2653E+00	9.9241E-08	4.2689E+17	1.1481E+19
La-140	6.3875E+00	1.1492E-08	4.9433E+16	1.7632E+17
La-141	3.7626E-09	6.6532E-19	2.8416E+06	8.5924E+16
Ce-141	1.9628E-01	6.8886E-09	2.9421E+16	2.7185E+17
Ce-143	2.7414E-02	4.1282E-11	1.7385E+14	2.5438E+17
Ce-144	1.6949E-01	5.3140E-08	2.2223E+17	2.1837E+17
Pr-143	8.0684E-02	1.1982E-09	5.0459E+15	1.0216E+17
Nd-147	2.5960E-02	3.2090E-10	1.3146E+15	4.2453E+16
Np-239	7.4715E-01	3.2206E-09	8.1150E+15	3.0341E+18
Pu-238	6.9123E-04	4.0376E-08	1.0216E+17	8.8173E+14
Pu-239	6.0962E-05	9.8078E-07	2.4713E+18	7.7238E+13
Pu-240	1.1335E-04	4.9743E-07	1.2482E+18	1.4465E+14
Pu-241	2.4418E-02	2.3704E-07	5.9231E+17	3.1177E+16
Am-241	1.6789E-05	4.8917E-09	1.2223E+16	2.0890E+13
Cm-242	4.0844E-03	1.2324E-09	3.0667E+15	5.3002E+15
Cm-244	2.7445E-04	3.3923E-09	8.3726E+15	3.5038E+14

DW Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5108E+25	0.0000E+00	
Elemental I (atoms)	2.3623E+19	4.8566E+22	
Organic I (atoms)	7.8918E+20	0.0000E+00	
Aerosols (kg)	1.3906E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.2063E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.2681E-06
Total I (Ci)			2.4289E+04

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	2.7618E+18
Organic I (atoms)	4.0214E+19
Aerosols (kg)	1.6864E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

RB Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	2.0123E-02	6.3285E-10	6.5709E+15	2.5824E+14
Co-60	2.5011E-02	2.2126E-08	2.2207E+17	3.1502E+14
Kr-85	4.8513E+04	1.2365E-01	8.7606E+23	3.5726E+20
Kr-85m	2.8345E-01	3.4444E-11	2.4403E+14	6.4767E+19
Kr-88	1.4533E-04	1.1590E-14	7.9315E+10	6.4857E+19
Rb-86	1.2869E+00	1.5816E-08	1.1075E+17	1.7571E+16
Sr-89	3.3581E+01	1.1559E-06	7.8212E+18	4.3432E+17
Sr-90	4.6632E+00	3.4186E-05	2.2875E+20	5.8702E+16
Sr-91	4.0060E-02	1.1051E-11	7.3132E+13	7.3091E+16
Sr-92	9.9734E-10	7.9347E-20	5.1939E+05	1.7360E+16
Y-90	3.0252E+00	5.5603E-09	3.7206E+16	2.2223E+16
Y-91	5.3940E-01	2.1995E-08	1.4556E+17	6.7394E+15
Y-92	1.0130E-06	1.0528E-16	6.8914E+08	1.7829E+16
Y-93	6.9925E-04	2.0959E-13	1.3572E+12	8.9914E+14
Zr-95	5.2635E-01	2.4501E-08	1.5531E+17	6.7685E+15
Zr-97	1.0376E-02	5.4277E-12	3.3697E+13	1.6010E+15
Nb-95	5.4937E-01	1.4049E-08	8.9060E+16	6.9227E+15
Mo-99	2.5668E+00	5.3519E-09	3.2555E+16	5.5327E+16
Tc-99m	2.6316E+00	5.0047E-10	3.0444E+15	5.2812E+16
Ru-103	5.6883E+00	1.7625E-07	1.0305E+18	7.4146E+16
Ru-105	1.3489E-06	2.0066E-16	1.1509E+09	3.0409E+15
Ru-106	2.6353E+00	7.8770E-07	4.4751E+18	3.3293E+16
Rh-105	7.1663E-01	8.4904E-10	4.8695E+15	2.5786E+16
Sb-127	3.4104E+00	1.2771E-08	6.0557E+16	6.2518E+16
Sb-129	4.4254E-06	7.8696E-16	3.6738E+09	1.4641E+16
Te-127	4.4295E+00	1.6784E-09	7.9588E+15	7.0357E+16
Te-127m	1.1807E+00	1.2517E-07	5.9356E+17	1.4922E+16
Te-129	3.1372E+00	1.4980E-10	6.9931E+14	4.5671E+16
Te-129m	3.6280E+00	1.2043E-07	5.6220E+17	4.7556E+16
Te-131m	1.6026E+00	2.0097E-09	9.2388E+15	7.2968E+16
Te-132	4.5120E+01	1.4862E-07	6.7803E+17	8.8950E+17
I-131	1.3078E+03	1.0549E-05	4.8495E+19	1.4232E+19
I-132	5.3855E+01	5.2174E-09	2.3803E+16	1.3502E+18
I-133	1.5649E+02	1.3815E-07	6.2552E+17	8.5272E+18
I-135	1.5393E-01	4.3831E-11	1.9553E+14	1.9891E+18
Xe-133	3.0816E+06	1.6463E-02	7.4544E+22	2.7734E+22
Xe-135	1.6603E+03	6.5016E-07	2.9003E+18	8.3783E+20
Cs-134	1.6273E+02	1.2577E-04	5.6524E+20	2.0660E+18
Cs-136	3.9543E+01	5.3953E-07	2.3891E+18	5.5758E+17
Cs-137	1.3140E+02	1.5107E-03	6.6404E+21	1.6654E+18
Ba-140	4.4040E+01	6.0156E-07	2.5876E+18	6.1828E+17
La-140	3.8841E+01	6.9880E-08	3.0059E+17	3.2343E+17
La-141	2.2808E-08	4.0329E-18	1.7225E+07	3.1041E+14
Ce-141	1.1895E+00	4.1745E-08	1.7829E+17	1.5617E+16
Ce-143	1.6618E-01	2.5024E-10	1.0538E+15	6.6321E+15
Ce-144	1.0274E+00	3.2212E-07	1.3471E+18	1.2994E+16
Pr-143	4.8992E-01	7.2755E-09	3.0639E+16	6.3392E+15
Nd-147	1.5736E-01	1.9452E-09	7.9687E+15	2.2490E+15
Np-239	4.5290E+00	1.9522E-08	4.9190E+16	1.0768E+17
Pu-238	4.1900E-03	2.4475E-07	6.1928E+17	5.2727E+13
Pu-239	3.6953E-04	5.9451E-06	1.4980E+19	4.6374E+12
Pu-240	6.8707E-04	3.0152E-06	7.5659E+18	8.6480E+12
Pu-241	1.4801E-01	1.4368E-06	3.5904E+18	1.8635E+15
Am-241	1.0178E-04	2.9655E-08	7.4101E+16	1.2648E+12
Cm-242	2.4758E-02	7.4702E-09	1.8589E+16	3.1426E+14
Cm-244	1.6636E-03	2.0563E-08	5.0752E+16	2.0944E+13

RB Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	9.5060E+23	0.0000E+00	
Elemental I (atoms)	1.7621E+18	0.0000E+00	
Organic I (atoms)	2.9963E+19	0.0000E+00	
Aerosols (kg)	1.6894E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9761E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0280E-08
Total I (Ci)			1.5183E+03

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23

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Elemental I (atoms)      2.7618E+18
Organic I (atoms)        4.0214E+19
Aerosols (kg)            1.6864E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms      Decay
Co-58                  1.3411E-12  4.2177E-20  4.3792E+05  8.8880E+05
Co-60                  1.6669E-12  1.4746E-18  1.4800E+07  1.0698E+06
Kr-85                  1.6247E-01  4.1412E-07  2.9340E+18  2.1520E+15
Kr-85m                 9.4931E-07  1.1535E-16  8.1727E+08  1.4349E+15
Kr-88                  4.8672E-10  3.8816E-20  2.6563E+05  1.6198E+15
Rb-86                  7.6343E-11  9.3825E-19  6.5701E+06  6.8412E+07
Sr-89                  2.2380E-09  7.7035E-17  5.2125E+08  1.5032E+09
Sr-90                  3.1079E-10  2.2784E-15  1.5245E+10  1.9927E+08
Y-90                   2.0154E-10  3.7043E-19  2.4786E+06  2.6529E+07
Y-91                   3.5914E-11  1.4644E-18  9.6913E+06  2.1563E+07
Zr-95                  3.5079E-11  1.6329E-18  1.0351E+07  2.3330E+07
Nb-95                  3.6614E-11  9.3634E-19  5.9355E+06  2.3521E+07
Mo-99                  1.7107E-10  3.5668E-19  2.1697E+06  2.6035E+08
Tc-99m                 1.7539E-10  3.3355E-20  2.0290E+05  2.4166E+08
Ru-103                 3.7910E-10  1.1746E-17  6.8678E+07  2.5804E+08
Ru-106                 1.7563E-10  5.2497E-17  2.9825E+08  1.1331E+08
Rh-105                 4.7761E-11  5.6585E-20  3.2454E+05  1.4914E+08
Sb-127                 2.2729E-10  8.5112E-19  4.0359E+06  2.6977E+08
Te-127                 2.9521E-10  1.1186E-19  5.3043E+05  2.8152E+08
Te-127m                7.8691E-11  8.3424E-18  3.9558E+07  5.0746E+07
Te-129                 2.0908E-10  9.9836E-21  4.6607E+04  3.2235E+08
Te-129m                2.4179E-10  8.0262E-18  3.7469E+07  1.6601E+08
Te-131m                1.0681E-10  1.3394E-19  6.1573E+05  4.6703E+08
Te-132                 3.0071E-09  9.9049E-18  4.5188E+07  3.9948E+09
I-131                  8.8239E-04  7.1175E-12  3.2719E+13  1.5925E+13
I-132                  2.6323E-07  2.5502E-17  1.1635E+08  9.9990E+11
I-133                  1.0565E-04  9.3266E-14  4.2230E+11  1.3062E+13
I-135                  1.0392E-07  2.9591E-17  1.3200E+08  3.9512E+12
Xe-133                 1.0320E+01  5.5135E-08  2.4965E+17  1.8073E+17
Xe-135                 5.5569E-03  2.1760E-12  9.7068E+12  1.3124E+16
Cs-134                 9.6537E-09  7.4614E-15  3.3532E+10  7.6312E+09
Cs-136                 2.3458E-09  3.2007E-17  1.4173E+08  2.2203E+09
Cs-137                 7.7951E-09  8.9618E-14  3.9393E+11  6.1437E+09
Ba-140                 2.9351E-09  4.0092E-17  1.7246E+08  2.2644E+09
La-140                 2.5878E-09  4.6557E-18  2.0027E+07  4.3741E+08
Ce-141                 7.9275E-11  2.7822E-18  1.1883E+07  5.4614E+07
Ce-143                 1.1075E-11  1.6677E-20  7.0233E+04  4.0572E+07
Ce-144                 6.8471E-11  2.1468E-17  8.9779E+07  4.4258E+07
Pr-143                 3.2646E-11  4.8480E-19  2.0416E+06  2.1266E+07
Nd-147                 1.0488E-11  1.2964E-19  5.3109E+05  8.3354E+06
Np-239                 3.0184E-10  1.3011E-18  3.2784E+06  5.3184E+08
Pu-238                 2.7925E-13  1.6311E-17  4.1273E+07  1.7894E+05
Pu-239                 2.4628E-14  3.9622E-16  9.9837E+08  1.5696E+04
Pu-240                 4.5791E-14  2.0096E-16  5.0424E+08  2.9354E+04
Pu-241                 9.8645E-12  9.5760E-17  2.3929E+08  6.3263E+06
Am-241                 6.7832E-15  1.9764E-18  4.9385E+06  4.2538E+03
Cm-242                 1.6500E-12  4.9786E-19  1.2389E+06  1.0732E+06
Cm-244                 1.1087E-13  1.3705E-18  3.3824E+06  7.1099E+04

CR Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    3.1836E+18  0.0000E+00
Elemental I (atoms)    2.6817E+11  0.0000E+00
Organic I (atoms)      3.2873E+13  0.0000E+00
Aerosols (kg)          1.0058E-13  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         3.1468E-13
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Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 3.1841E-13
Total I (Ci) 9.8841E-04

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.8191E+19
Elemental I (atoms)	0.0000E+00	4.6138E+14
Organic I (atoms)	0.0000E+00	3.1267E+15
Aerosols (kg)	0.0000E+00	4.3499E-10

Environment to CR Filtered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7593E+20
Elemental I (atoms)	9.9703E+14	3.0836E+13
Organic I (atoms)	6.8236E+15	2.1104E+14
Aerosols (kg)	9.3956E-10	2.9059E-11

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.5070E+20	0.0000E+00
Elemental I (atoms)	4.8537E+14	0.0000E+00
Organic I (atoms)	3.2769E+15	0.0000E+00
Aerosols (kg)	4.6387E-10	0.0000E+00

EAB Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5868E+00	3.0343E+01	2.5109E+00
Accumulated dose (rem)	4.9983E+00	6.5245E+01	6.9952E+00

LPZ Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.2694E+00	2.8517E+01	3.1379E+00
Accumulated dose (rem)	2.4169E+01	1.3333E+02	2.8280E+01

CR Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	9.5283E-02	1.4315E+01	5.3128E-01
Accumulated dose (rem)	8.8796E-01	6.4758E+01	2.8815E+00

DW Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	2.9114E-03	9.1558E-11	9.5065E+14	4.4622E+15
Co-60	3.8291E-03	3.3874E-09	3.3999E+16	5.3491E+15
Kr-85	1.1905E+06	3.0343E+00	2.1497E+25	4.0293E+22
Kr-85m	1.4684E-09	1.7843E-19	1.2641E+06	1.6052E+22
Rb-86	7.6475E-02	9.3987E-10	6.5814E+15	3.1789E+17
Sr-89	4.7450E+00	1.6333E-07	1.1051E+18	7.5596E+18
Sr-90	7.1520E-01	5.2431E-06	3.5083E+19	9.9621E+17
Sr-91	1.6813E-07	4.6380E-17	3.0693E+08	8.3943E+18
Y-90	6.6518E-01	1.2226E-09	8.1808E+15	2.5510E+16
Y-91	7.6353E-02	3.1134E-09	2.0604E+16	9.6477E+16
Y-93	5.4781E-09	1.6420E-18	1.0632E+07	9.7189E+16
Zr-95	7.5675E-02	3.5226E-09	2.2330E+16	1.1718E+17
Zr-97	4.3346E-06	2.2675E-15	1.4077E+10	1.0553E+17
Nb-95	8.3520E-02	2.1359E-09	1.3540E+16	1.1761E+17
Mo-99	8.6799E-02	1.8098E-10	1.1009E+15	1.4600E+18
Tc-99m	8.8990E-02	1.6924E-11	1.0295E+14	1.3010E+18
Ru-103	7.8507E-01	2.4325E-08	1.4222E+17	1.2999E+18
Ru-106	3.9979E-01	1.1950E-07	6.7890E+17	5.6691E+17
Rh-105	6.5357E-03	7.7432E-12	4.4410E+13	8.5370E+17
Sb-127	1.7766E-01	6.6525E-10	3.1545E+15	1.4635E+18
Te-127	3.4816E-01	1.3193E-10	6.2557E+14	1.4601E+18

Te-127m	1.7652E-01	1.8714E-08	8.8740E+16	2.5366E+17
Te-129	4.2529E-01	2.0308E-11	9.4804E+13	3.8694E+18
Te-129m	4.9183E-01	1.6326E-08	7.6216E+16	8.3427E+17
Te-131m	8.8263E-03	1.1069E-11	5.0884E+13	2.9938E+18
Te-132	1.9317E+00	6.3629E-09	2.9029E+16	2.2001E+19
I-131	1.2021E+04	9.6964E-05	4.4575E+20	7.9382E+20
I-132	2.3057E+00	2.2338E-10	1.0191E+15	2.3127E+20
I-133	1.9897E+01	1.7564E-08	7.9529E+16	5.4738E+20
I-135	6.5716E-07	1.8712E-16	8.3473E+08	3.3380E+20
Xe-133	3.4255E+07	1.8300E-01	8.2862E+23	2.4322E+24
Xe-135	6.9419E-01	2.7184E-10	1.2126E+15	1.1061E+23
Cs-134	1.2018E+01	9.2888E-06	4.1745E+19	3.4878E+19
Cs-136	2.1378E+00	2.9168E-08	1.2916E+17	1.0391E+19
Cs-137	9.7544E+00	1.1214E-04	4.9295E+20	2.8069E+19
Ba-140	4.8751E+00	6.6591E-08	2.8644E+17	1.1596E+19
La-140	5.5030E+00	9.9005E-09	4.2587E+16	2.9456E+17
Ce-141	1.6062E-01	5.6371E-09	2.4076E+16	2.7526E+17
Ce-143	1.2385E-03	1.8650E-12	7.8539E+12	2.5454E+17
Ce-144	1.5534E-01	4.8704E-08	2.0368E+17	2.2148E+17
Pr-143	5.7198E-02	8.4941E-10	3.5771E+15	1.0347E+17
Nd-147	1.6531E-02	2.0435E-10	8.3714E+14	4.2854E+16
Np-239	1.1884E-01	5.1225E-10	1.2907E+15	3.0406E+18
Pu-238	6.4327E-04	3.7575E-08	9.5076E+16	8.9452E+14
Pu-239	5.6851E-05	9.1464E-07	2.3046E+18	7.8367E+13
Pu-240	1.0542E-04	4.6263E-07	1.1608E+18	1.4674E+14
Pu-241	2.2691E-02	2.2028E-07	5.5043E+17	3.1628E+16
Am-241	1.6212E-05	4.7235E-09	1.1803E+16	2.1206E+13
Cm-242	3.7028E-03	1.1172E-09	2.7802E+15	5.3748E+15
Cm-244	2.5509E-04	3.1530E-09	7.7819E+15	3.5545E+14

DW Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump		
Noble gases (atoms)	2.2326E+25	0.0000E+00		
Elemental I (atoms)	1.2933E+19	4.8566E+22		
Organic I (atoms)	4.3205E+20	0.0000E+00		
Aerosols (kg)	1.2903E-04	4.8987E+01		
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8309E-06	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.8314E-06	
Total I (Ci)			1.2043E+04	

DW to RB Transport Group Inventory:

Time (h) = 240.0000	Leakage Transport
Noble gases (atoms)	2.0430E+24
Elemental I (atoms)	3.5589E+18
Organic I (atoms)	6.6841E+19
Aerosols (kg)	1.6924E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2812E+23
Elemental I (atoms)	0.0000E+00	1.4388E+18
Organic I (atoms)	0.0000E+00	2.0640E+19
Aerosols (kg)	0.0000E+00	8.8685E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2812E+23
Elemental I (atoms)	0.0000E+00	1.4388E+18
Organic I (atoms)	0.0000E+00	2.0640E+19
Aerosols (kg)	0.0000E+00	8.8685E-04

RB Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	1.9111E-02	6.0102E-10	6.2404E+15	6.3446E+14
Co-60	2.5135E-02	2.2236E-08	2.2318E+17	7.9598E+14
Kr-85	1.0402E+05	2.6514E-01	1.8785E+24	1.8305E+21

Kr-85m	1.2831E-10	1.5591E-20	1.1046E+05	6.4767E+19
Rb-86	1.0334E+00	1.2700E-08	8.8931E+16	3.9735E+16
Sr-89	3.1147E+01	1.0721E-06	7.2544E+18	1.0548E+18
Sr-90	4.6948E+00	3.4417E-05	2.3030E+20	1.4845E+17
Sr-91	1.1036E-06	3.0445E-16	2.0148E+09	7.3164E+16
Y-90	4.3690E+00	8.0303E-09	5.3733E+16	9.5786E+16
Y-91	5.0606E-01	2.0635E-08	1.3656E+17	1.6764E+16
Y-93	3.5960E-08	1.0778E-17	6.9794E+07	9.0050E+14
Zr-95	4.9675E-01	2.3123E-08	1.4658E+17	1.6578E+16
Zr-97	2.8454E-05	1.4884E-14	9.2407E+10	1.6346E+15
Nb-95	5.4825E-01	1.4021E-08	8.8878E+16	1.7452E+16
Mo-99	5.6978E-01	1.1880E-09	7.2265E+15	8.0778E+16
Tc-99m	5.8416E-01	1.1109E-10	6.7578E+14	7.7589E+16
Ru-103	5.1534E+00	1.5968E-07	9.3359E+17	1.7805E+17
Ru-106	2.6244E+00	7.8443E-07	4.4565E+18	8.3739E+16
Rh-105	4.2902E-02	5.0829E-11	2.9152E+14	3.0376E+16
Sb-127	1.1662E+00	4.3669E-09	2.0707E+16	1.0264E+17
Te-127	2.2855E+00	8.6600E-10	4.1064E+15	1.2916E+17
Te-127m	1.1588E+00	1.2285E-07	5.8252E+17	3.7383E+16
Te-129	2.7918E+00	1.3331E-10	6.2232E+14	8.8450E+16
Te-129m	3.2286E+00	1.0717E-07	5.0031E+17	1.1324E+17
Te-131m	5.7939E-02	7.2659E-11	3.3402E+14	8.1892E+16
Te-132	1.2681E+01	4.1768E-08	1.9056E+17	1.3798E+18
I-131	1.3408E+03	1.0815E-05	4.9719E+19	4.0395E+19
I-132	1.5136E+01	1.4663E-09	6.6897E+15	1.8577E+18
I-133	2.2182E+00	1.9581E-09	8.8663E+15	9.2406E+18
I-135	7.3263E-08	2.0862E-17	9.3061E+07	1.9893E+18
Xe-133	2.9932E+06	1.5991E-02	7.2406E+22	8.9324E+22
Xe-135	6.0681E-02	2.3762E-11	1.0600E+14	8.4105E+20
Cs-134	1.6239E+02	1.2551E-04	5.6408E+20	5.1841E+18
Cs-136	2.8886E+01	3.9413E-07	1.7452E+18	1.2085E+18
Cs-137	1.3181E+02	1.5153E-03	6.6609E+21	4.1897E+18
Ba-140	3.2001E+01	4.3713E-07	1.8803E+18	1.3415E+18
La-140	3.6134E+01	6.5008E-08	2.7964E+17	1.0697E+18
Ce-141	1.0541E+00	3.6994E-08	1.5800E+17	3.7109E+16
Ce-143	8.1299E-03	1.2242E-11	5.1556E+13	7.6368E+15
Ce-144	1.0197E+00	3.1971E-07	1.3370E+18	3.2628E+16
Pr-143	3.7609E-01	5.5850E-09	2.3520E+16	1.4657E+16
Nd-147	1.0852E-01	1.3414E-09	5.4953E+15	4.7701E+15
Np-239	7.8009E-01	3.3626E-09	8.4727E+15	1.4857E+17
Pu-238	4.2226E-03	2.4665E-07	6.2411E+17	1.3341E+14
Pu-239	3.7319E-04	6.0040E-06	1.5128E+19	1.1763E+13
Pu-240	6.9200E-04	3.0368E-06	7.6201E+18	2.1875E+13
Pu-241	1.4895E-01	1.4460E-06	3.6132E+18	4.7117E+15
Am-241	1.0643E-04	3.1010E-08	7.7488E+16	3.2614E+12
Cm-242	2.4307E-02	7.3339E-09	1.8250E+16	7.8483E+14
Cm-244	1.6745E-03	2.0697E-08	5.1083E+16	5.2959E+13

RB Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9509E+24	0.0000E+00	
Elemental I (atoms)	1.6408E+18	0.0000E+00	
Organic I (atoms)	3.7801E+19	0.0000E+00	
Aerosols (kg)	1.6919E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9973E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9993E-08
Total I (Ci)			1.3582E+03

DW to RB Transport Group Inventory:

Time (h) = 240.0000	Leakage Transport
Noble gases (atoms)	2.0430E+24
Elemental I (atoms)	3.5589E+18
Organic I (atoms)	6.6841E+19
Aerosols (kg)	1.6924E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00

Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	7.1558E-14	2.2504E-21	2.3366E+04	8.9274E+05
Co-60	9.4115E-14	8.3259E-20	8.3567E+05	1.0748E+06
Kr-85	1.1775E-01	3.0012E-07	2.1263E+18	4.4967E+15
Rb-86	1.8946E-12	2.3285E-20	1.6305E+05	6.8597E+07
Sr-89	1.1663E-10	4.0144E-18	2.7163E+07	1.5097E+09
Sr-90	1.7579E-11	1.2887E-16	8.6230E+08	2.0020E+08
Y-90	1.6350E-11	3.0051E-20	2.0108E+05	2.7221E+07
Y-91	1.8768E-12	7.6531E-20	5.0646E+05	2.1668E+07
Zr-95	1.8600E-12	8.6581E-20	5.4884E+05	2.3433E+07
Nb-95	2.0528E-12	5.2498E-20	3.3279E+05	2.3629E+07
Mo-99	2.1334E-12	4.4482E-21	2.7058E+04	2.6072E+08
Ru-103	1.9296E-11	5.9788E-19	3.4957E+06	2.5914E+08
Ru-106	9.8265E-12	2.9372E-18	1.6687E+07	1.1383E+08
Sb-127	4.3666E-12	1.6351E-20	7.7535E+04	2.7029E+08
Te-127	8.5575E-12	3.2426E-21	1.5376E+04	2.8223E+08
Te-127m	4.3388E-12	4.5998E-19	2.1811E+06	5.0979E+07
Te-129m	1.2089E-11	4.0128E-19	1.8733E+06	1.6670E+08
Te-132	4.7480E-11	1.5639E-19	7.1351E+05	4.0015E+09
I-131	3.7947E-04	3.0608E-12	1.4071E+13	2.5852E+13
I-132	9.2870E-09	8.9972E-19	4.1047E+06	1.0008E+12
I-133	6.2807E-07	5.5444E-16	2.5105E+09	1.3384E+13
Xe-133	3.3881E+00	1.8101E-08	8.1959E+16	2.8415E+17
Xe-135	6.8662E-08	2.6887E-17	1.1994E+08	1.3132E+16
Cs-134	2.9774E-10	2.3013E-16	1.0342E+09	7.6557E+09
Cs-136	5.2962E-11	7.2262E-19	3.1998E+06	2.2258E+09
Cs-137	2.4166E-10	2.7783E-15	1.2213E+10	6.1636E+09
Ba-140	1.1982E-10	1.6367E-18	7.0405E+06	2.2724E+09
La-140	1.3526E-10	2.4334E-19	1.0468E+06	4.4519E+08
Ce-141	3.9479E-12	1.3855E-19	5.9177E+05	5.4843E+07
Ce-144	3.8181E-12	1.1971E-18	5.0063E+06	4.4461E+07
Pr-143	1.4059E-12	2.0878E-20	8.7923E+04	2.1357E+07
Nd-147	4.0632E-13	5.0226E-21	2.0576E+04	8.3637E+06
Np-239	2.9209E-12	1.2591E-20	3.1725E+04	5.3245E+08
Pu-238	1.5811E-14	9.2355E-19	2.3369E+06	1.7977E+05
Pu-239	1.3973E-15	2.2481E-17	5.6646E+07	1.5770E+04
Pu-240	2.5911E-15	1.1371E-17	2.8532E+07	2.9490E+04
Pu-241	5.5773E-13	5.4142E-18	1.3529E+07	6.3557E+06
Am-241	3.9847E-16	1.1610E-19	2.9011E+05	4.2742E+03
Cm-242	9.1012E-14	2.7460E-20	6.8335E+04	1.0780E+06
Cm-244	6.2697E-15	7.7498E-20	1.9127E+05	7.1430E+04

CR Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	2.2083E+18	0.0000E+00	
Elemental I (atoms)	3.6901E+10	0.0000E+00	
Organic I (atoms)	1.4036E+13	0.0000E+00	
Aerosols (kg)	3.1952E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3272E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3274E-13
Total I (Ci)			3.8010E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5803E+20
Elemental I (atoms)	0.0000E+00	4.6701E+14
Organic I (atoms)	0.0000E+00	5.1255E+15
Aerosols (kg)	0.0000E+00	4.3632E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5556E+20
Elemental I (atoms)	1.0093E+15	3.1216E+13

Organic I (atoms)	1.1186E+16	3.4596E+14
Aerosols (kg)	9.4248E-10	2.9149E-11

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 240.0000	Pathway Filtered	Transported
Noble gases (atoms)	5.1103E+20	0.0000E+00
Elemental I (atoms)	4.9158E+14	0.0000E+00
Organic I (atoms)	5.4193E+15	0.0000E+00
Aerosols (kg)	4.6540E-10	0.0000E+00

EAB Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.8494E-01	2.3467E+01	1.5994E+00
Accumulated dose (rem)	5.8832E+00	8.8712E+01	8.5946E+00

LPZ Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2656E+00	2.2055E+01	1.9371E+00
Accumulated dose (rem)	2.5434E+01	1.5539E+02	3.0217E+01

CR Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2887E-02	1.1031E+01	3.8874E-01
Accumulated dose (rem)	9.4085E-01	7.5789E+01	3.2703E+00

DW Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	2.3393E-03	7.3566E-11	7.6384E+14	4.5458E+15
Co-60	3.3809E-03	2.9909E-09	3.0020E+16	5.4642E+15
Kr-85	1.0530E+06	2.6840E+00	1.9016E+25	7.6099E+22
Rb-86	4.6741E-02	5.7444E-10	4.0225E+15	3.1982E+17
Sr-89	3.6654E+00	1.2617E-07	8.5370E+17	7.6932E+18
Sr-90	6.3335E-01	4.6431E-06	3.1068E+19	1.0177E+18
Y-90	6.3338E-01	1.1642E-09	7.7897E+15	4.6445E+16
Y-91	6.0100E-02	2.4507E-09	1.6218E+16	9.8647E+16
Zr-95	6.0173E-02	2.8010E-09	1.7756E+16	1.1934E+17
Zr-97	2.0392E-10	1.0667E-19	6.6227E+05	1.0553E+17
Nb-95	7.2009E-02	1.8415E-09	1.1674E+16	1.2009E+17
Mo-99	6.1853E-03	1.2896E-11	7.8448E+13	1.4610E+18
Tc-99m	6.3414E-03	1.2060E-12	7.3361E+12	1.3019E+18
Ru-103	5.8313E-01	1.8068E-08	1.0564E+17	1.3217E+18
Ru-106	3.4766E-01	1.0392E-07	5.9038E+17	5.7884E+17
Rh-105	5.2433E-05	6.2120E-14	3.5628E+11	8.5374E+17
Sb-127	2.6013E-02	9.7407E-11	4.6189E+14	1.4660E+18
Te-127	1.7521E-01	6.6389E-11	3.1480E+14	1.4674E+18
Te-127m	1.4759E-01	1.5647E-08	7.4194E+16	2.5883E+17
Te-129	3.0662E-01	1.4641E-11	6.8349E+13	3.8781E+18
Te-129m	3.5459E-01	1.1770E-08	5.4948E+16	8.4768E+17
Te-131m	3.0552E-05	3.8314E-14	1.7613E+11	2.9939E+18
Te-132	2.0397E-01	6.7186E-10	3.0652E+15	2.2026E+19
I-131	4.4981E+03	3.6282E-05	1.6679E+20	1.0384E+21
I-132	2.4346E-01	2.3586E-11	1.0761E+14	2.3129E+20
I-133	5.9273E-03	5.2324E-12	2.3692E+13	5.4746E+20
Xe-133	8.0962E+06	4.3253E-02	1.9585E+23	3.0118E+24
Xe-135	6.9342E-09	2.7153E-18	1.2113E+07	1.1061E+23
Cs-134	1.0552E+01	8.1557E-06	3.6653E+19	3.5238E+19
Cs-136	1.1160E+00	1.5227E-08	6.7426E+16	1.0442E+19
Cs-137	8.6382E+00	9.9311E-05	4.3654E+20	2.8362E+19
Ba-140	2.5072E+00	3.4248E-08	1.4732E+17	1.1709E+19
La-140	2.9102E+00	5.2358E-09	2.2522E+16	4.2459E+17
Ce-141	1.1500E-01	4.0359E-09	1.7237E+16	2.7963E+17
Ce-143	7.0971E-06	1.0687E-14	4.5007E+10	2.5455E+17
Ce-144	1.3434E-01	4.2119E-08	1.7614E+17	2.2611E+17
Pr-143	3.0474E-02	4.5255E-10	1.9058E+15	1.0483E+17
Nd-147	7.7919E-03	9.6317E-11	3.9458E+14	4.3225E+16
Np-239	5.5487E-03	2.3918E-11	6.0266E+13	3.0418E+18

Pu-238	5.7060E-04	3.3330E-08	8.4335E+16	9.1389E+14
Pu-239	5.0404E-05	8.1092E-07	2.0433E+18	8.0079E+13
Pu-240	9.3415E-05	4.0995E-07	1.0287E+18	1.4992E+14
Pu-241	2.0081E-02	1.9494E-07	4.8712E+17	3.2311E+16
Am-241	1.5248E-05	4.4426E-09	1.1101E+16	2.1709E+13
Cm-242	3.1444E-03	9.4875E-10	2.3610E+15	5.4839E+15
Cm-244	2.2580E-04	2.7911E-09	6.8886E+15	3.6313E+14

DW Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9212E+25	0.0000E+00	
Elemental I (atoms)	4.8383E+18	4.8566E+22	
Organic I (atoms)	1.6164E+20	0.0000E+00	
Aerosols (kg)	1.1403E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0590E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.0590E-06
Total I (Ci)			4.4983E+03

DW to RB Transport Group Inventory:

Time (h) = 480.0000	Leakage Transport
Noble gases (atoms)	3.5933E+24
Elemental I (atoms)	4.1774E+18
Organic I (atoms)	8.7505E+19
Aerosols (kg)	1.7015E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1024E+24
Elemental I (atoms)	0.0000E+00	1.6280E+18
Organic I (atoms)	0.0000E+00	2.6961E+19
Aerosols (kg)	0.0000E+00	8.8964E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1024E+24
Elemental I (atoms)	0.0000E+00	1.6280E+18
Organic I (atoms)	0.0000E+00	2.6961E+19
Aerosols (kg)	0.0000E+00	8.8964E-04

RB Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	1.7515E-02	5.5083E-10	5.7193E+15	1.2196E+15
Co-60	2.5315E-02	2.2395E-08	2.2477E+17	1.6025E+15
Kr-85	1.8779E+05	4.7864E-01	3.3911E+24	6.5282E+21
Rb-86	7.1646E-01	8.8052E-09	6.1659E+16	6.7398E+16
Sr-89	2.7445E+01	9.4468E-07	6.3921E+18	1.9903E+18
Sr-90	4.7422E+00	3.4765E-05	2.3262E+20	2.9932E+17
Y-90	4.7426E+00	8.7171E-09	5.8328E+16	2.4266E+17
Y-91	4.5432E-01	1.8525E-08	1.2260E+17	3.2102E+16
Zr-95	4.5055E-01	2.0972E-08	1.3295E+17	3.1710E+16
Zr-97	1.5269E-09	7.9872E-19	4.9588E+06	1.6347E+15
Nb-95	5.3917E-01	1.3788E-08	8.7407E+16	3.4849E+16
Mo-99	4.6313E-02	9.6562E-11	5.8739E+14	8.7446E+16
Tc-99m	4.7482E-02	9.0300E-12	5.4929E+13	8.4081E+16
Ru-103	4.3662E+00	1.3529E-07	7.9099E+17	3.2988E+17
Ru-106	2.6031E+00	7.7808E-07	4.4205E+18	1.6731E+17
Rh-105	3.9259E-04	4.6513E-13	2.6677E+12	3.0665E+16
Sb-127	1.9477E-01	7.2934E-10	3.4584E+15	1.1999E+17
Te-127	1.3119E+00	4.9709E-10	2.3571E+15	1.8066E+17
Te-127m	1.1051E+00	1.1716E-07	5.5553E+17	7.3593E+16
Te-129	2.2958E+00	1.0963E-10	5.1177E+14	1.4951E+17
Te-129m	2.6550E+00	8.8132E-08	4.1143E+17	2.0700E+17
Te-131m	2.2876E-04	2.8688E-13	1.3188E+12	8.2226E+16
Te-132	1.5272E+00	5.0306E-09	2.2951E+16	1.5482E+18
I-131	9.2479E+02	7.4595E-06	3.4292E+19	7.7144E+19
I-132	1.8229E+00	1.7660E-10	8.0571E+14	2.0321E+18

I-133	1.2183E-03	1.0754E-12	4.8695E+12	9.2502E+18
Xe-133	1.4438E+06	7.7134E-03	3.4926E+22	1.5980E+23
Xe-135	1.2368E-09	4.8432E-19	2.1605E+06	8.4105E+20
Cs-134	1.6175E+02	1.2501E-04	5.6183E+20	1.0366E+19
Cs-136	1.7107E+01	2.3341E-07	1.0335E+18	1.9274E+18
Cs-137	1.3241E+02	1.5223E-03	6.6915E+21	8.4132E+18
Ba-140	1.8773E+01	2.5643E-07	1.1030E+18	2.1344E+18
La-140	2.1790E+01	3.9203E-08	1.6863E+17	1.9761E+18
Ce-141	8.6080E-01	3.0211E-08	1.2903E+17	6.7617E+16
Ce-143	5.3140E-05	8.0021E-14	3.3699E+11	7.6881E+15
Ce-144	1.0059E+00	3.1537E-07	1.3189E+18	6.5008E+16
Pr-143	2.2855E-01	3.3940E-09	1.4293E+16	2.4134E+16
Nd-147	5.8342E-02	7.2118E-10	2.9544E+15	7.3551E+15
Np-239	4.1546E-02	1.7909E-10	4.5125E+14	1.5662E+17
Pu-238	4.2723E-03	2.4956E-07	6.3146E+17	2.6921E+14
Pu-239	3.7740E-04	6.0718E-06	1.5299E+19	2.3764E+13
Pu-240	6.9945E-04	3.0695E-06	7.7022E+18	4.4118E+13
Pu-241	1.5036E-01	1.4596E-06	3.6473E+18	9.4965E+15
Am-241	1.1418E-04	3.3267E-08	8.3128E+16	6.7873E+12
Cm-242	2.3544E-02	7.1038E-09	1.7678E+16	1.5497E+15
Cm-244	1.6907E-03	2.0898E-08	5.1578E+16	1.0676E+14

RB Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	3.4260E+24	0.0000E+00	
Elemental I (atoms)	1.0784E+18	0.0000E+00	
Organic I (atoms)	2.8843E+19	0.0000E+00	
Aerosols (kg)	1.6970E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.7560E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.7562E-08
Total I (Ci)			9.2661E+02

DW to RB Transport Group Inventory:

Time (h) = 480.0000	Leakage Transport
Noble gases (atoms)	3.5933E+24
Elemental I (atoms)	4.1774E+18
Organic I (atoms)	8.7505E+19
Aerosols (kg)	1.7015E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	5.6994E-14	1.7924E-21	1.8610E+04	8.9478E+05
Co-60	8.2372E-14	7.2871E-20	7.3139E+05	1.0776E+06
Kr-85	1.0416E-01	2.6548E-07	1.8809E+18	8.0383E+15
Rb-86	1.1388E-12	1.3996E-20	9.8004E+04	6.8644E+07
Sr-89	8.9304E-11	3.0739E-18	2.0799E+07	1.5130E+09
Sr-90	1.5431E-11	1.1312E-16	7.5694E+08	2.0072E+08
Y-90	1.5432E-11	2.8364E-20	1.8979E+05	2.7731E+07
Y-91	1.4643E-12	5.9708E-20	3.9513E+05	2.1721E+07
Zr-95	1.4660E-12	6.8242E-20	4.3259E+05	2.3486E+07
Nb-95	1.7544E-12	4.4867E-20	2.8441E+05	2.3690E+07
Ru-103	1.4207E-11	4.4021E-19	2.5738E+06	2.5967E+08
Ru-106	8.4704E-12	2.5318E-18	1.4384E+07	1.1412E+08
Sb-127	6.3377E-13	2.3732E-21	1.1253E+04	2.7035E+08
Te-127m	3.5958E-12	3.8122E-19	1.8077E+06	5.1105E+07
Te-129m	8.6392E-12	2.8678E-19	1.3388E+06	1.6703E+08
Te-132	4.9696E-12	1.6369E-20	7.4680E+04	4.0021E+09
I-131	1.4162E-04	1.1424E-12	5.2515E+12	3.3554E+13
I-132	9.7424E-10	9.4383E-20	4.3060E+05	1.0009E+12
I-133	1.8662E-10	1.6474E-19	7.4595E+05	1.3387E+13
Xe-133	8.0080E-01	4.2782E-09	1.9371E+16	3.4148E+17

Cs-134	2.5709E-10	1.9871E-16	8.9301E+08	7.6645E+09
Cs-136	2.7190E-11	3.7099E-19	1.6428E+06	2.2271E+09
Cs-137	2.1046E-10	2.4196E-15	1.0636E+10	6.1707E+09
Ba-140	6.1086E-11	8.3441E-19	3.5892E+06	2.2752E+09
La-140	7.0904E-11	1.2756E-19	5.4872E+05	4.4836E+08
Ce-141	2.8017E-12	9.8330E-20	4.1997E+05	5.4949E+07
Ce-144	3.2730E-12	1.0262E-18	4.2915E+06	4.4574E+07
Pr-143	7.4247E-13	1.1026E-20	4.6433E+04	2.1390E+07
Pu-238	1.3902E-14	8.1205E-19	2.0547E+06	1.8025E+05
Pu-239	1.2280E-15	1.9757E-17	4.9783E+07	1.5812E+04
Pu-240	2.2759E-15	9.9881E-18	2.5062E+07	2.9568E+04
Pu-241	4.8926E-13	4.7495E-18	1.1868E+07	6.3724E+06
Am-241	3.7149E-16	1.0824E-19	2.7047E+05	4.2865E+03
Cm-242	7.6611E-14	2.3115E-20	5.7522E+04	1.0807E+06
Cm-244	5.5015E-15	6.8001E-20	1.6783E+05	7.1617E+04

CR Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9002E+18	0.0000E+00	
Elemental I (atoms)	2.4227E+08	0.0000E+00	
Organic I (atoms)	5.2513E+12	0.0000E+00	
Aerosols (kg)	2.7781E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.9519E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.9519E-14
Total I (Ci)			1.4163E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.7455E+20
Elemental I (atoms)	0.0000E+00	4.6711E+14
Organic I (atoms)	0.0000E+00	6.6786E+15
Aerosols (kg)	0.0000E+00	4.3684E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.1774E+20
Elemental I (atoms)	1.0095E+15	3.1223E+13
Organic I (atoms)	1.4576E+16	4.5079E+14
Aerosols (kg)	9.4360E-10	2.9184E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	8.8999E+20	0.0000E+00
Elemental I (atoms)	4.9173E+14	0.0000E+00
Organic I (atoms)	7.0783E+15	0.0000E+00
Aerosols (kg)	4.6595E-10	0.0000E+00

EAB Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.1240E-01	8.7802E+00	4.7973E-01
Accumulated dose (rem)	6.0956E+00	9.7492E+01	9.0743E+00

LPZ Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.0377E-01	8.2519E+00	5.5501E-01
Accumulated dose (rem)	2.5738E+01	1.6364E+02	3.0772E+01

CR Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2671E-02	4.1273E+00	1.3833E-01
Accumulated dose (rem)	9.5352E-01	7.9917E+01	3.4086E+00

DW Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.8796E-03	5.9110E-11	6.1374E+14	4.6129E+15
Co-60	2.9852E-03	2.6408E-09	2.6506E+16	5.5658E+15
Kr-85	9.3148E+05	2.3742E+00	1.6821E+25	1.0777E+23
Rb-86	2.8567E-02	3.5109E-10	2.4585E+15	3.2100E+17
Sr-89	2.8315E+00	9.7461E-08	6.5947E+17	7.7965E+18
Sr-90	5.6086E-01	4.1117E-06	2.7512E+19	1.0368E+18
Y-90	5.6381E-01	1.0363E-09	6.9342E+15	6.5471E+16
Y-91	4.7307E-02	1.9290E-09	1.2766E+16	1.0036E+17
Zr-95	4.7846E-02	2.2272E-09	1.4118E+16	1.2106E+17
Nb-95	6.1331E-02	1.5684E-09	9.9425E+15	1.2222E+17
Mo-99	4.4076E-04	9.1899E-13	5.5902E+12	1.4611E+18
Tc-99m	4.5189E-04	8.5939E-14	5.2277E+11	1.3020E+18
Ru-103	4.3314E-01	1.3421E-08	7.8468E+16	1.3378E+18
Ru-106	3.0233E-01	9.0367E-08	5.1340E+17	5.8921E+17
Rh-105	4.2064E-07	4.9836E-16	2.8583E+09	8.5374E+17
Sb-127	3.8088E-03	1.4262E-11	6.7630E+13	1.4663E+18
Te-127	1.2895E-01	4.8863E-11	2.3170E+14	1.4720E+18
Te-127m	1.2284E-01	1.3023E-08	6.1754E+16	2.6314E+17
Te-129	2.2106E-01	1.0555E-11	4.9276E+13	3.8844E+18
Te-129m	2.5564E-01	8.4860E-09	3.9615E+16	8.5734E+17
Te-131m	1.0575E-07	1.3262E-16	6.0968E+08	2.9939E+18
Te-132	2.1537E-02	7.0942E-11	3.2365E+14	2.2028E+19
I-131	1.6831E+03	1.3576E-05	6.2410E+19	1.1299E+21
I-132	2.5707E-02	2.4905E-12	1.1362E+13	2.3129E+20
I-133	1.7658E-06	1.5588E-15	7.0579E+09	5.4746E+20
Xe-133	1.9136E+06	1.0223E-02	4.6289E+22	3.1487E+24
Cs-134	9.2649E+00	7.1609E-06	3.2182E+19	3.5555E+19
Cs-136	5.8260E-01	7.9491E-09	3.5199E+16	1.0468E+19
Cs-137	7.6498E+00	8.7947E-05	3.8659E+20	2.8622E+19
Ba-140	1.2894E+00	1.7613E-08	7.5764E+16	1.1768E+19
La-140	1.4978E+00	2.6948E-09	1.1592E+16	4.9206E+17
Ce-141	8.2330E-02	2.8894E-09	1.2341E+16	2.8275E+17
Ce-143	4.0670E-08	6.1242E-17	2.5791E+08	2.5455E+17
Ce-144	1.1617E-01	3.6424E-08	1.5233E+17	2.3010E+17
Pr-143	1.6197E-02	2.4054E-10	1.0130E+15	1.0555E+17
Nd-147	3.6727E-03	4.5398E-11	1.8598E+14	4.3400E+16
Np-239	2.5908E-04	1.1168E-12	2.8139E+12	3.0419E+18
Pu-238	5.0611E-04	2.9563E-08	7.4803E+16	9.3108E+14
Pu-239	4.4666E-05	7.1861E-07	1.8107E+18	8.1597E+13
Pu-240	8.2778E-05	3.6327E-07	9.1154E+17	1.5273E+14
Pu-241	1.7771E-02	1.7251E-07	4.3108E+17	3.2915E+16
Am-241	1.4292E-05	4.1640E-09	1.0405E+16	2.2181E+13
Cm-242	2.6702E-03	8.0568E-10	2.0049E+15	5.5766E+15
Cm-244	1.9988E-04	2.4707E-09	6.0978E+15	3.6992E+14

DW Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.6867E+25	0.0000E+00	
Elemental I (atoms)	1.8104E+18	4.8566E+22	
Organic I (atoms)	6.0481E+19	0.0000E+00	
Aerosols (kg)	1.0084E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9626E-07
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9626E-07
Total I (Ci)			1.6831E+03

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport
Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	4.4088E+18
Organic I (atoms)	9.5236E+19
Aerosols (kg)	1.7096E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	1.6988E+18
Organic I (atoms)	0.0000E+00	2.9326E+19

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Aerosols (kg)          0.0000E+00  8.9210E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.5154E+24
Elemental I (atoms)    0.0000E+00  1.6988E+18
Organic I (atoms)      0.0000E+00  2.9326E+19
Aerosols (kg)          0.0000E+00  8.9210E-04

RB Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms      Decay
Co-58                  1.6032E-02  5.0417E-10  5.2348E+15  1.7555E+15
Co-60                  2.5462E-02  2.2525E-08  2.2608E+17  2.4142E+15
Kr-85                  2.6171E+05  6.6707E-01  4.7261E+24  1.3743E+22
Rb-86                  4.9644E-01  6.1012E-09  4.2724E+16  8.6571E+16
Sr-89                  2.4151E+01  8.3129E-07  5.6249E+18  2.8139E+18
Sr-90                  4.7838E+00  3.5070E-05  2.3466E+20  4.5160E+17
Y-90                   4.8090E+00  8.8390E-09  5.9144E+16  3.9468E+17
Y-91                   4.0733E-01  1.6610E-08  1.0992E+17  4.5863E+16
Zr-95                  4.0810E-01  1.8997E-08  1.2042E+17  4.5425E+16
Nb-95                  5.2312E-01  1.3378E-08  8.4804E+16  5.1839E+16
Mo-99                  3.7594E-03  7.8385E-12  4.7681E+13  8.7988E+16
Tc-99m                 3.8543E-03  7.3301E-13  4.4589E+12  8.4608E+16
Ru-103                 3.6944E+00  1.1447E-07  6.6928E+17  4.5844E+17
Ru-106                 2.5787E+00  7.7078E-07  4.3790E+18  2.5014E+17
Rh-105                 3.5878E-06  4.2507E-15  2.4379E+10  3.0668E+16
Sb-127                 3.2487E-02  1.2165E-10  5.7684E+14  1.2289E+17
Te-127                 1.0999E+00  4.1677E-10  1.9763E+15  2.1716E+17
Te-127m                1.0478E+00  1.1108E-07  5.2673E+17  1.0800E+17
Te-129                 1.8855E+00  9.0032E-11  4.2030E+14  1.9969E+17
Te-129m                2.1805E+00  7.2380E-08  3.3789E+17  2.8405E+17
Te-131m                9.0202E-07  1.1312E-15  5.2002E+09  8.2227E+16
Te-132                 1.8370E-01  6.0509E-10  2.7606E+15  1.5685E+18
I-131                  5.2468E+02  4.2322E-06  1.9456E+19  9.9958E+19
I-132                  2.1927E-01  2.1242E-11  9.6912E+13  2.0531E+18
I-133                  5.5033E-07  4.8581E-16  2.1997E+09  9.2502E+18
Xe-133                 5.3765E+05  2.8724E-03  1.3006E+22  1.8951E+23
Cs-134                 1.6100E+02  1.2444E-04  5.5925E+20  1.5525E+19
Cs-136                 1.0124E+01  1.3814E-07  6.1168E+17  2.3529E+18
Cs-137                 1.3294E+02  1.5283E-03  6.7181E+21  1.2655E+19
Ba-140                 1.0998E+01  1.5023E-07  6.4622E+17  2.5993E+18
La-140                 1.2776E+01  2.2985E-08  9.8870E+16  2.5120E+18
Ce-141                 7.0204E-01  2.4639E-08  1.0523E+17  9.2514E+16
Ce-143                 3.4689E-07  5.2236E-16  2.1998E+09  7.6885E+15
Ce-144                 9.9090E-01  3.1068E-07  1.2993E+18  9.6928E+16
Pr-143                 1.3838E-01  2.0550E-09  8.6540E+15  2.9880E+16
Nd-147                 3.1326E-02  3.8722E-10  1.5863E+15  8.7441E+15
Np-239                 2.2098E-03  9.5253E-12  2.4001E+13  1.5705E+17
Pu-238                 4.3168E-03  2.5215E-07  6.3802E+17  4.0652E+14
Pu-239                 3.8097E-04  6.1293E-06  1.5444E+19  3.5887E+13
Pu-240                 7.0605E-04  3.0985E-06  7.7749E+18  6.6586E+13
Pu-241                 1.5158E-01  1.4714E-06  3.6769E+18  1.4323E+16
Am-241                 1.2191E-04  3.5520E-08  8.8758E+16  1.0561E+13
Cm-242                 2.2776E-02  6.8719E-09  1.7101E+16  2.2901E+15
Cm-244                 1.7049E-03  2.1073E-08  5.2011E+16  1.6104E+14

RB Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    4.7391E+24  0.0000E+00
Elemental I (atoms)    5.9968E+17  0.0000E+00
Organic I (atoms)      1.7001E+19  0.0000E+00
Aerosols (kg)          1.7019E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.5636E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.5637E-08
Total I (Ci)                                    5.2490E+02

DW to  RB Transport Group Inventory:
Time (h) = 720.0000  Leakage Transport
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Noble gases (atoms)      4.9433E+24
Elemental I (atoms)      4.4088E+18
Organic I (atoms)        9.5236E+19
Aerosols (kg)            1.7096E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg          Atoms      Decay
Co-58                  4.5794E-14  1.4401E-21  1.4953E+04  8.9641E+05
Co-60                  7.2730E-14  6.4341E-20  6.4578E+05  1.0801E+06
Kr-85                  9.2133E-02  2.3483E-07  1.6638E+18  1.1171E+16
Rb-86                  6.9601E-13  8.5539E-21  5.9899E+04  6.8673E+07
Sr-89                  6.8986E-11  2.3745E-18  1.6067E+07  1.5155E+09
Sr-90                  1.3665E-11  1.0018E-16  6.7031E+08  2.0119E+08
Y-90                   1.3737E-11  2.5248E-20  1.6894E+05  2.8194E+07
Y-91                   1.1526E-12  4.6999E-20  3.1102E+05  2.1762E+07
Zr-95                  1.1657E-12  5.4263E-20  3.4398E+05  2.3528E+07
Nb-95                  1.4943E-12  3.8214E-20  2.4224E+05  2.3742E+07
Ru-103                 1.0553E-11  3.2698E-19  1.9118E+06  2.6006E+08
Ru-106                 7.3659E-12  2.2017E-18  1.2508E+07  1.1438E+08
Te-127m                2.9929E-12  3.1730E-19  1.5046E+06  5.1210E+07
Te-129m                6.2285E-12  2.0675E-19  9.6518E+05  1.6726E+08
I-131                  5.2993E-05  4.2745E-13  1.9650E+12  3.6435E+13
I-132                  1.0287E-10  9.9657E-21  4.5466E+04  1.0009E+12
Xe-133                 1.8927E-01  1.0112E-09  4.5785E+15  3.5503E+17
Cs-134                 2.2573E-10  1.7447E-16  7.8408E+08  7.6722E+09
Cs-136                 1.4194E-11  1.9367E-19  8.5758E+05  2.2277E+09
Cs-137                 1.8638E-10  2.1427E-15  9.4188E+09  6.1771E+09
Ba-140                 3.1416E-11  4.2913E-19  1.8459E+06  2.2766E+09
La-140                 3.6493E-11  6.5655E-20  2.8242E+05  4.5000E+08
Ce-141                 2.0059E-12  7.0398E-20  3.0067E+05  5.5025E+07
Ce-144                 2.8305E-12  8.8743E-19  3.7113E+06  4.4671E+07
Pr-143                 3.9463E-13  5.8604E-21  2.4680E+04  2.1408E+07
Pu-238                 1.2331E-14  7.2027E-19  1.8225E+06  1.8067E+05
Pu-239                 1.0882E-15  1.7508E-17  4.4115E+07  1.5848E+04
Pu-240                 2.0168E-15  8.8508E-18  2.2209E+07  2.9636E+04
Pu-241                 4.3298E-13  4.2031E-18  1.0503E+07  6.3871E+06
Am-241                 3.4820E-16  1.0145E-19  2.5351E+05  4.2980E+03
Cm-242                 6.5058E-14  1.9629E-20  4.8848E+04  1.0830E+06
Cm-244                 4.8699E-15  6.0195E-20  1.4857E+05  7.1782E+04

CR Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    1.6683E+18  0.0000E+00
Elemental I (atoms)    5.8730E+07  0.0000E+00
Organic I (atoms)      1.9649E+12  0.0000E+00
Aerosols (kg)          2.4568E-15  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.8529E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.8529E-14
Total I (Ci)                                    5.2993E-05

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.7602E+20
Elemental I (atoms)    0.0000E+00  4.6713E+14
Organic I (atoms)      0.0000E+00  7.2597E+15
Aerosols (kg)          0.0000E+00  4.3729E-10

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
```

```
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.4605E+20
Elemental I (atoms)    1.0096E+15  3.1224E+13
Organic I (atoms)      1.5844E+16  4.9002E+14
Aerosols (kg)          9.4459E-10  2.9214E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    1.2200E+21  0.0000E+00
Elemental I (atoms)    4.9175E+14  0.0000E+00
Organic I (atoms)      7.6990E+15  0.0000E+00
Aerosols (kg)          4.6643E-10  0.0000E+00

    928

######################################################################
                              I-131 Summary
######################################################################
```

Time (hr)	DW I-131 (Curies)	RB I-131 (Curies)	Environment I-131 (Curies)
0.000	3.8944E+03	6.7611E-04	3.7369E-14
0.260	1.8207E+06	1.4794E+02	1.7514E-03
0.333	2.3333E+06	2.4304E+02	4.6987E-03
0.500	2.5229E+05	3.1098E+02	2.1931E-02
0.750	3.9747E+05	3.6954E+02	8.0451E-02
1.000	4.0160E+05	4.3161E+02	1.8384E-01
1.400	4.0806E+05	5.3214E+02	4.6223E-01
1.500	4.0967E+05	5.5750E+02	5.5710E-01
1.800	4.1449E+05	6.3413E+02	9.1231E-01
2.000	4.1769E+05	6.8567E+02	1.2146E+00
2.100	5.0440E+04	6.9503E+02	1.3129E+00
2.300	4.2146E+04	7.0027E+02	1.5245E+00
2.400	3.9528E+04	7.0257E+02	1.6378E+00
2.700	3.5071E+04	7.0875E+02	2.0088E+00
3.000	3.3235E+04	7.1438E+02	2.4267E+00
3.300	3.2463E+04	7.1977E+02	2.8923E+00
3.600	3.2124E+04	7.2505E+02	3.4062E+00
3.900	3.1960E+04	7.3028E+02	3.9690E+00
4.000	3.1924E+04	7.3202E+02	4.1676E+00
4.300	3.1880E+04	7.3722E+02	4.7961E+00
4.600	3.1836E+04	7.4241E+02	5.4743E+00
4.900	3.1792E+04	7.4758E+02	6.2022E+00
5.200	3.1748E+04	7.5274E+02	6.9800E+00
5.500	3.1704E+04	7.5789E+02	7.8076E+00
5.800	3.1661E+04	7.6302E+02	8.6849E+00
6.100	3.1617E+04	7.6814E+02	9.6119E+00
6.400	3.1573E+04	7.7324E+02	1.0588E+01
6.700	3.1530E+04	7.7833E+02	1.1614E+01
7.000	3.1486E+04	7.8341E+02	1.2688E+01
7.300	3.1443E+04	7.8847E+02	1.3810E+01
7.600	3.1400E+04	7.9352E+02	1.4981E+01
7.900	3.1356E+04	7.9856E+02	1.6198E+01
8.000	3.1342E+04	8.0023E+02	1.6615E+01
8.300	3.1299E+04	8.0525E+02	1.7882E+01
8.600	3.1256E+04	8.1025E+02	1.9195E+01
8.900	3.1212E+04	8.1524E+02	2.0554E+01
9.200	3.1169E+04	8.2022E+02	2.1957E+01
9.500	3.1126E+04	8.2519E+02	2.3404E+01
9.800	3.1084E+04	8.3014E+02	2.4895E+01
10.100	3.1041E+04	8.3507E+02	2.6429E+01
10.400	3.0998E+04	8.4000E+02	2.8005E+01
24.000	2.9118E+04	1.0495E+03	1.3184E+02
48.000	2.6392E+04	1.1624E+03	2.4538E+02
72.000	2.3921E+04	1.2471E+03	3.5615E+02
96.000	2.1682E+04	1.3078E+03	4.5848E+02
240.000	1.2021E+04	1.3408E+03	9.0274E+02
480.000	4.4981E+03	9.2479E+02	1.2482E+03
720.000	1.6831E+03	5.2468E+02	1.3774E+03

Time (hr)	CR I-131 (Curies)	MSL "B" Volume 1 I-131 (Curies)	MSL "B" Volume 2 I-131 (Curies)
0.000	1.6834E-16	3.5698E-04	5.2857E-10
0.260	7.3993E-06	7.7000E+01	5.2637E-02
0.333	1.9503E-05	1.2599E+02	1.0999E-01
0.500	8.7014E-05	1.5775E+02	3.0136E-01
0.750	1.2068E-04	1.8165E+02	6.2570E-01
1.000	1.8566E-04	2.0639E+02	1.0043E+00
1.400	3.5725E-04	2.4454E+02	1.7420E+00
1.500	4.1381E-04	2.5380E+02	1.9542E+00
1.800	6.1833E-04	2.8100E+02	2.6633E+00
2.000	7.8518E-04	2.9864E+02	3.1992E+00
2.100	7.9005E-04	2.9859E+02	3.3628E+00
2.300	8.0818E-04	2.9444E+02	3.6940E+00
2.400	8.2109E-04	2.9229E+02	3.8611E+00
2.700	8.7326E-04	2.8577E+02	4.3684E+00
3.000	9.4271E-04	2.7927E+02	4.8830E+00
3.300	1.0263E-03	2.7290E+02	5.4039E+00
3.600	1.1215E-03	2.6668E+02	5.9296E+00
3.900	1.2262E-03	2.6063E+02	6.4590E+00
4.000	1.2629E-03	2.5866E+02	6.6361E+00
4.300	1.3776E-03	2.5284E+02	7.1688E+00
4.600	1.4982E-03	2.4719E+02	7.7029E+00
4.900	1.6235E-03	2.4170E+02	8.2374E+00
5.200	1.7527E-03	2.3638E+02	8.7714E+00
5.500	1.8849E-03	2.3121E+02	9.3043E+00
5.800	2.0194E-03	2.2618E+02	9.8353E+00
6.100	2.1557E-03	2.2131E+02	1.0364E+01
6.400	2.2932E-03	2.1657E+02	1.0889E+01
6.700	2.4316E-03	2.1197E+02	1.1410E+01
7.000	2.5704E-03	2.0751E+02	1.1928E+01
7.300	2.7093E-03	2.0317E+02	1.2440E+01
7.600	2.8481E-03	1.9896E+02	1.2948E+01
7.900	2.9865E-03	1.9487E+02	1.3450E+01
8.000	3.0325E-03	1.9354E+02	1.3616E+01
8.300	2.6741E-03	1.8960E+02	1.4106E+01
8.600	2.4000E-03	1.8578E+02	1.4591E+01
8.900	2.1925E-03	1.8207E+02	1.5069E+01
9.200	2.0376E-03	1.7847E+02	1.5540E+01
9.500	1.9244E-03	1.7497E+02	1.6005E+01
9.800	1.8440E-03	1.7158E+02	1.6463E+01
10.100	1.7895E-03	1.6828E+02	1.6913E+01
10.400	1.7553E-03	1.6507E+02	1.7357E+01
24.000	2.7864E-03	8.5010E+01	2.9822E+01
48.000	1.0262E-03	6.0713E+01	3.1021E+01
72.000	9.6622E-04	5.0296E+01	2.9306E+01
96.000	8.8239E-04	4.4216E+01	2.6826E+01
240.000	3.7947E-04	2.4159E+01	1.4887E+01
480.000	1.4162E-04	9.0396E+00	5.5125E+00
720.000	5.2993E-05	3.3825E+00	2.0619E+00

Time (hr)	MSL "C" Volume 3 I-131 (Curies)	MSL "C" Volume 4 I-131 (Curies)
0.000	3.5698E-04	6.2309E-10
0.260	7.6827E+01	6.2024E-02
0.333	1.2563E+02	1.2959E-01
0.500	1.5676E+02	3.5488E-01
0.750	1.7964E+02	7.3596E-01
1.000	2.0324E+02	1.1798E+00
1.400	2.3935E+02	2.0418E+00
1.500	2.4808E+02	2.2893E+00
1.800	2.7356E+02	3.1148E+00
2.000	2.9000E+02	3.7375E+00
2.100	2.8961E+02	3.9275E+00
2.300	2.8477E+02	4.3115E+00
2.400	2.8229E+02	4.5051E+00
2.700	2.7482E+02	5.0919E+00
3.000	2.6744E+02	5.6863E+00
3.300	2.6023E+02	6.2866E+00
3.600	2.5324E+02	6.8915E+00
3.900	2.4647E+02	7.4996E+00
4.000	2.4427E+02	7.7029E+00

4.300	2.3780E+02	8.3134E+00
4.600	2.3154E+02	8.9245E+00
4.900	2.2550E+02	9.5352E+00
5.200	2.1966E+02	1.0144E+01
5.500	2.1401E+02	1.0751E+01
5.800	2.0855E+02	1.1355E+01
6.100	2.0327E+02	1.1955E+01
6.400	1.9817E+02	1.2551E+01
6.700	1.9324E+02	1.3141E+01
7.000	1.8848E+02	1.3726E+01
7.300	1.8387E+02	1.4304E+01
7.600	1.7942E+02	1.4876E+01
7.900	1.7511E+02	1.5441E+01
8.000	1.7371E+02	1.5628E+01
8.300	1.6959E+02	1.6180E+01
8.600	1.6561E+02	1.6724E+01
8.900	1.6177E+02	1.7260E+01
9.200	1.5805E+02	1.7788E+01
9.500	1.5446E+02	1.8308E+01
9.800	1.5098E+02	1.8819E+01
10.100	1.4762E+02	1.9321E+01
10.400	1.4437E+02	1.9815E+01
24.000	6.9514E+01	3.3167E+01
48.000	5.0363E+01	3.4011E+01
72.000	4.2593E+01	3.1893E+01
96.000	3.7868E+01	2.9102E+01
240.000	2.0847E+01	1.6111E+01
480.000	7.8004E+00	5.9541E+00
720.000	2.9188E+00	2.2261E+00

##
Cumulative Dose Summary
##

	EAB		LPZ		CR	
Time (hr)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.260	1.6724E-04	9.3157E-06	4.2230E-03	2.3523E-04	2.6274E-04	8.6199E-06
0.333	4.4832E-04	2.4797E-05	1.1321E-02	6.2615E-04	8.8969E-04	2.9165E-05
0.500	2.0889E-03	1.1642E-04	5.2748E-02	2.9397E-03	6.2803E-03	2.0563E-04
0.750	7.6445E-03	4.7958E-04	1.9303E-01	1.2110E-02	2.3180E-02	7.6754E-04
1.000	1.7429E-02	1.3789E-03	4.4011E-01	3.4818E-02	4.8223E-02	1.6433E-03
1.400	4.3691E-02	5.3152E-03	1.1033E+00	1.3422E-01	1.1845E-01	4.4111E-03
1.500	5.2615E-02	7.0530E-03	1.3286E+00	1.7810E-01	1.4395E-01	5.5115E-03
1.800	8.5946E-02	1.4861E-02	2.1703E+00	3.7527E-01	2.4529E-01	1.0268E-02
2.000	1.1423E-01	2.2736E-02	2.8845E+00	5.7411E-01	3.3739E-01	1.5001E-02
2.100	1.2341E-01	2.5471E-02	3.0553E+00	6.2499E-01	3.8910E-01	1.7758E-02
2.300	1.4314E-01	3.1542E-02	3.4223E+00	7.3794E-01	4.9377E-01	2.3426E-02
2.400	1.5369E-01	3.4885E-02	3.6186E+00	8.0013E-01	5.4707E-01	2.6362E-02
2.700	1.8815E-01	4.6171E-02	4.2596E+00	1.0101E+00	7.1272E-01	3.5710E-02
3.000	2.2683E-01	5.9355E-02	4.9791E+00	1.2553E+00	8.8972E-01	4.6066E-02
3.300	2.6978E-01	7.4417E-02	5.7782E+00	1.5356E+00	1.0811E+00	5.7632E-02
3.600	3.1704E-01	9.1304E-02	6.6574E+00	1.8497E+00	1.2892E+00	7.0560E-02
3.900	3.6862E-01	1.0994E-01	7.6170E+00	2.1964E+00	1.5160E+00	8.4959E-02
4.000	3.8678E-01	1.1652E-01	7.9549E+00	2.3189E+00	1.5960E+00	9.0098E-02
4.300	4.4415E-01	1.3734E-01	9.0222E+00	2.7061E+00	1.8501E+00	1.0656E-01
4.600	5.0586E-01	1.5967E-01	1.0170E+01	3.1215E+00	2.1260E+00	1.2462E-01
4.900	5.7191E-01	1.8340E-01	1.1399E+01	3.5630E+00	2.4246E+00	1.4428E-01
5.200	6.4226E-01	2.0841E-01	1.2708E+01	4.0283E+00	2.7466E+00	1.6554E-01
5.500	7.1690E-01	2.3460E-01	1.4096E+01	4.5154E+00	3.0925E+00	1.8836E-01
5.800	7.9581E-01	2.6184E-01	1.5564E+01	5.0223E+00	3.4628E+00	2.1273E-01
6.100	8.7893E-01	2.9004E-01	1.7111E+01	5.5469E+00	3.8576E+00	2.3860E-01
6.400	9.6624E-01	3.1910E-01	1.8735E+01	6.0874E+00	4.2772E+00	2.6591E-01
6.700	1.0577E+00	3.4890E-01	2.0436E+01	6.6419E+00	4.7215E+00	2.9463E-01
7.000	1.1532E+00	3.7937E-01	2.2213E+01	7.2087E+00	5.1907E+00	3.2469E-01
7.300	1.2528E+00	4.1042E-01	2.4066E+01	7.7863E+00	5.6846E+00	3.5605E-01
7.600	1.3563E+00	4.4196E-01	2.5992E+01	8.3732E+00	6.2031E+00	3.8864E-01
7.900	1.4638E+00	4.7394E-01	2.7991E+01	8.9680E+00	6.7461E+00	4.2241E-01
8.000	1.5005E+00	4.8468E-01	2.8673E+01	9.1678E+00	6.9325E+00	4.3392E-01
8.300	1.6119E+00	5.1708E-01	2.9054E+01	9.3719E+00	7.4604E+00	4.6618E-01
8.600	1.7271E+00	5.4976E-01	2.9448E+01	9.5776E+00	7.9288E+00	4.9434E-01

```
   8.900 1.8460E+00 5.8266E-01 2.9855E+01 9.7844E+00 8.3518E+00 5.1941E-01
   9.200 1.9685E+00 6.1574E-01 3.0273E+01 9.9919E+00 8.7405E+00 5.4216E-01
   9.500 2.0945E+00 6.4895E-01 3.0704E+01 1.0200E+01 9.1039E+00 5.6317E-01
   9.800 2.2240E+00 6.8226E-01 3.1147E+01 1.0408E+01 9.4487E+00 5.8291E-01
  10.100 2.3569E+00 7.1562E-01 3.1602E+01 1.0617E+01 9.7805E+00 6.0171E-01
  10.400 2.4932E+00 7.4901E-01 3.2068E+01 1.0825E+01 1.0103E+01 6.1985E-01
  24.000 1.1088E+01 2.1722E+00 6.1452E+01 1.9428E+01 2.8007E+01 1.4717E+00
  48.000 1.9762E+01 3.0999E+00 7.7248E+01 2.1745E+01 3.6667E+01 1.8229E+00
  72.000 2.7743E+01 3.8419E+00 9.1780E+01 2.3570E+01 4.3923E+01 2.1023E+00
  96.000 3.4901E+01 4.4842E+00 1.0481E+02 2.5142E+01 5.0443E+01 2.3502E+00
 240.000 6.5245E+01 6.9952E+00 1.3333E+02 2.8280E+01 6.4758E+01 2.8815E+00
 480.000 8.8712E+01 8.5946E+00 1.5539E+02 3.0217E+01 7.5789E+01 3.2703E+00
 720.000 9.7492E+01 9.0743E+00 1.6364E+02 3.0772E+01 7.9917E+01 3.4086E+00

######################################################################
                        Worst Two-Hour Doses
######################################################################

EAB
   Time    Whole Body     Thyroid         TEDE
   (hr)      (rem)         (rem)          (rem)
    8.4   1.9477E-01   8.4287E-01   2.2104E-01
```

12.9 RADTRAD Output File “JAFCL _270_shine.out

```
 ########################################################################
    RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 11:55:29
 ########################################################################

 ########################################################################
                      File information
 ########################################################################

 Plant file           = C:\radtrad3.03\Fitz\JAFCL_270_shine.psf
 Inventory file       = c:\radtrad3.03\fitz\jafloca.nif
 Release file         = c:\radtrad3.03\defaults\bwr_dba.rft
 Dose Conversion file = c:\radtrad3.03\defaults\fgr11&12.inp




     #####    ####   #####    #  #     #  #####   #     #  #####
     #    #  #       #        #  ##    #  #    #  #     #    #
     #    #  #       #        #  # #   #  #    #  #     #    #
     #####    ####   ####     #  #  #  #  #####   #     #    #
     #            #  #        #  #   # #  #       #     #    #
     #            #  #        #  #    ##  #       #     #    #
     #         ####   #        #  #     #  #        ####     #


 Radtrad 3.03 4/15/2001
 Containment Leakage from Drywell & Wetwell (DW+WW) Using CAVEX Core Inventory -
Containment Shine Dose
 Nuclide Inventory File:
 c:\radtrad3.03\fitz\jafloca.nif
 Plant Power Level:
  2.5867E+03
 Compartments:
   6
 Compartment 1:
 DW
   3
  1.5000E+05
   1
   0
   0
   0
   0
 Compartment 2:
 RB
   3
  1.1850E+06
   0
   0
   0
   0
   0
 Compartment 3:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
   0
 Compartment 4:
 CR
   1
  1.0100E+05
   0
   0
   0
```

```
  0
  0
Compartment 5:
MSL "B" Volume 1
  3
 1.0000E+00
  0
  0
  0
  0
  0
Compartment 6:
MSL "C" Volume 3
  3
 1.0000E+00
  0
  0
  0
  0
  0
Pathways:
  7
Pathway 1:
DW to  RB
  1
  2
  4
Pathway 2:
RB to Environment
  2
  3
  2
Pathway 3:
Environment to CR Unfiltered
  3
  4
  2
Pathway 4:
Environment to  CR Filtered
  3
  4
  2
Pathway 5:
CR to  Environment - Exhaust
  4
  3
  2
Pathway 6:
DW to  MSL "B" Volume 1
  1
  5
  1
Pathway 7:
DW to  MSL "A" Volume 3
  1
  6
  1
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\radtrad3.03\defaults\fgr11&12.inp
c:\radtrad3.03\defaults\bwr_dba.rft
  0.0000E+00
  1
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
```

```
  0.0000E+00
  0
  0
  0
  0
Compartments:
  6
Compartment 1:
  1
  1
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.8800E+00   3.0000E+01
  2.1000E+00   3.0000E+00
  2.2000E+00   3.0000E+00
  2.3000E+00   3.0000E+00
  2.4000E+00   3.0000E+00
  3.0000E+00   3.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.8800E+00   3.0000E+01
  2.1000E+00   0.0000E+00
  2.2000E+00   0.0000E+00
  2.3000E+00   0.0000E+00
  2.4000E+00   0.0000E+00
  3.0000E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  0
  0
```

```
  0
Compartment 5:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 6:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.5000E+00
  2.4000E+01   7.5000E-01
  7.2000E+02   0.0000E+00
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   6.6000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  3.3330E-01   6.6000E+03   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   4.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
```

```
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+02   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   1.0000E+02   1.0000E+02   1.0000E+02
  5.0000E-01   1.3000E+03   1.0000E+02   1.0000E+02   1.0000E+02
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
```

```
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00   8.2500E-01
  2.0000E+00   1.0000E+00   4.7800E-01
  2.4000E+01   1.0000E+00   2.3900E-01
  7.2000E+02   1.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
EAB
  3
  1
  4
  0.0000E+00   5.2400E-05
  1.0000E+00   5.2400E-05
  2.0000E+00   5.2400E-05
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  0
Location 2:
LPZ
  3
  1
  6
  0.0000E+00   4.5200E-03
  2.0000E+00   3.3300E-03
  8.0000E+00   1.1900E-03
  2.4000E+01   4.9600E-04
  9.6000E+01   2.5600E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   2.3000E-04
  0
Location 3:
CR
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  7
  0.0000E+00   3.5200E-03
```

```
  2.7780E-01   3.5200E-03
  3.3300E-01   9.2600E-07
  8.0000E+00   6.7500E-07
  2.4000E+01   3.3900E-07
  9.6000E+01   1.2600E-07
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   1.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   5.0000E-01
  8.0000E+00   1.0000E+00
  2.4000E+01   2.0000E+00
  9.6000E+01   5.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\radtrad3.o370
  1
  1
  1
  0
  0
End of Scenario File
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 11:55:29
########################################################################

########################################################################
                     Plant Description
########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.5867E+03 MWth

Number of compartments    =   6

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: DW
Compartment volume =   1.5000E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Exit Pathway Number    1: DW to  RB
   Exit Pathway Number    6: DW to  MSL "B" Volume 1
   Exit Pathway Number    7: DW to  MSL "A" Volume 3

Compartment number  2
Name: RB
Compartment volume =   1.1850E+06 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  2
   Inlet Pathway Number   1: DW to  RB
   Exit Pathway Number    2: RB to Environment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   2: RB to Environment
   Inlet Pathway Number   5: CR to  Environment - Exhaust
   Exit Pathway Number    3: Environment to CR Unfiltered
   Exit Pathway Number    4: Environment to  CR Filtered

Compartment number  4
Name: CR
Compartment volume =   1.0100E+05 (Cubic feet)
Compartment type is Control Room
Pathways into and out of compartment  4
   Inlet Pathway Number   3: Environment to CR Unfiltered
   Inlet Pathway Number   4: Environment to  CR Filtered
   Exit Pathway Number    5: CR to  Environment - Exhaust

Compartment number  5
Name: MSL "B" Volume 1
Compartment volume =   1.0000E+00 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  5
   Inlet Pathway Number   6: DW to  MSL "B" Volume 1

Compartment number  6
Name: MSL "C" Volume 3
Compartment volume =   1.0000E+00 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  6
   Inlet Pathway Number   7: DW to  MSL "A" Volume 3

Total number of pathways =   7
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 11:55:29
########################################################################

########################################################################
                    Scenario Description
########################################################################

Radioactive Decay is enabled
Calculation of Daughters is enabled

Release Fractions and Timings
               GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
            0.500000 hr    1.5000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        4.279E+03
IODINE       5.0000E-02     2.5000E-01      0.0000E+00        2.249E+02
CESIUM       5.0000E-02     2.0000E-01      0.0000E+00        4.682E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        3.100E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.674E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.550E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.852E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        5.214E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.978E+00

Inventory Power =      2587. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
               (Ci/MWt)      (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   1.529E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.830E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   5.260E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.670E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.740E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.360E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.600E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   3.240E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   4.260E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.030E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.200E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   4.400E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   4.110E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.250E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.640E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   5.020E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.860E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   5.030E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.140E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.540E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.460E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   3.180E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.940E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.980E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.560E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   7.910E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.530E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   4.340E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   7.420E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.430E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   5.380E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.860E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.710E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.960E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.640E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.430E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
 I-135     2   5.330E+04  2.380E+04   8.294E-14   8.460E-09   3.320E-10
 Xe-133    1   5.630E+04  4.532E+05   1.560E-15   0.000E+00   0.000E+00
 Xe-135    1   2.310E+04  3.272E+04   1.190E-14   0.000E+00   0.000E+00
 Cs-134    3   7.220E+03  6.507E+07   7.570E-14   1.110E-08   1.250E-08
 Cs-136    3   2.160E+03  1.132E+06   1.060E-13   1.730E-09   1.980E-09
 Cs-137    3   5.810E+03  9.467E+08   2.725E-14   7.930E-09   8.630E-09
 Ba-139    6   5.150E+04  4.962E+03   2.170E-15   2.400E-12   4.640E-11
```

Ba-140	6	5.000E+04	1.101E+06	8.580E-15	2.560E-10	1.010E-09
La-140	9	5.240E+04	1.450E+05	1.170E-13	6.870E-11	1.310E-09
La-141	9	4.700E+04	1.415E+04	2.390E-15	9.400E-12	1.570E-10
La-142	9	4.600E+04	5.550E+03	1.440E-13	8.740E-12	6.840E-11
Ce-141	8	4.720E+04	2.808E+06	3.430E-15	2.550E-11	2.420E-09
Ce-143	8	4.560E+04	1.188E+05	1.290E-14	6.230E-12	9.160E-10
Ce-144	8	3.790E+04	2.456E+07	2.773E-15	2.920E-10	1.010E-07
Pr-143	9	4.430E+04	1.172E+06	2.100E-17	1.680E-18	2.190E-09
Nd-147	9	1.850E+04	9.487E+05	6.190E-15	1.820E-11	1.850E-09
Np-239	8	5.370E+05	2.035E+05	7.690E-15	7.620E-12	6.780E-10
Pu-238	8	1.530E+02	2.769E+09	4.880E-18	3.860E-10	7.790E-05
Pu-239	8	1.340E+01	7.594E+11	4.240E-18	3.750E-10	8.330E-05
Pu-240	8	2.510E+01	2.063E+11	4.750E-18	3.760E-10	8.330E-05
Pu-241	8	5.410E+03	4.544E+08	7.250E-20	9.150E-12	1.340E-06
Am-241	9	9.060E+00	1.364E+10	8.180E-16	1.600E-09	1.200E-04
Cm-242	9	2.300E+03	1.407E+07	5.690E-18	9.410E-10	4.670E-06
Cm-244	9	1.520E+02	5.715E+08	4.910E-18	1.010E-09	6.700E-05

Nuclide	Daughter	Fraction	Daughter	Fraction	Daughter	Fraction
Kr-85m	Kr-85	0.21	none	0.00	none	0.00
Kr-87	Rb-87	1.00	none	0.00	none	0.00
Kr-88	Rb-88	1.00	none	0.00	none	0.00
Sr-90	Y-90	1.00	none	0.00	none	0.00
Sr-91	Y-91m	0.58	Y-91	0.42	none	0.00
Sr-92	Y-92	1.00	none	0.00	none	0.00
Y-93	Zr-93	1.00	none	0.00	none	0.00
Zr-95	Nb-95m	0.01	Nb-95	0.99	none	0.00
Zr-97	Nb-97m	0.95	Nb-97	0.05	none	0.00
Mo-99	Tc-99m	0.88	Tc-99	0.12	none	0.00
Tc-99m	Tc-99	1.00	none	0.00	none	0.00
Ru-103	Rh-103m	1.00	none	0.00	none	0.00
Ru-105	Rh-105	1.00	none	0.00	none	0.00
Ru-106	Rh-106	1.00	none	0.00	none	0.00
Sb-127	Te-127m	0.18	Te-127	0.82	none	0.00
Sb-129	Te-129m	0.22	Te-129	0.77	none	0.00
Te-127m	Te-127	0.98	none	0.00	none	0.00
Te-129	I-129	1.00	none	0.00	none	0.00
Te-129m	Te-129	0.65	I-129	0.35	none	0.00
Te-131m	Te-131	0.22	I-131	0.78	none	0.00
Te-132	I-132	1.00	none	0.00	none	0.00
I-131	Xe-131m	0.01	none	0.00	none	0.00
I-133	Xe-133m	0.03	Xe-133	0.97	none	0.00
I-135	Xe-135m	0.15	Xe-135	0.85	none	0.00
Xe-135	Cs-135	1.00	none	0.00	none	0.00
Cs-137	Ba-137m	0.95	none	0.00	none	0.00
Ba-140	La-140	1.00	none	0.00	none	0.00
La-141	Ce-141	1.00	none	0.00	none	0.00
Ce-143	Pr-143	1.00	none	0.00	none	0.00
Ce-144	Pr-144m	0.02	Pr-144	0.98	none	0.00
Nd-147	Pm-147	1.00	none	0.00	none	0.00
Np-239	Pu-239	1.00	none	0.00	none	0.00
Pu-238	U-234	1.00	none	0.00	none	0.00
Pu-239	U-235	1.00	none	0.00	none	0.00
Pu-240	U-236	1.00	none	0.00	none	0.00
Pu-241	U-237	0.00	Am-241	1.00	none	0.00
Am-241	Np-237	1.00	none	0.00	none	0.00
Cm-242	Pu-238	1.00	none	0.00	none	0.00
Cm-244	Pu-240	1.00	none	0.00	none	0.00

Iodine fractions
- Aerosol = 9.5000E-01
- Elemental = 4.8500E-02
- Organic = 1.5000E-03

COMPARTMENT DATA

Compartment number 1: DW

Sprays: Aerosal Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01

1.8800E+00	3.0000E+01
2.1000E+00	3.0000E+00
2.2000E+00	3.0000E+00
2.3000E+00	3.0000E+00
2.4000E+00	3.0000E+00
3.0000E+00	3.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Sprays: Elemental Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01
1.8800E+00	3.0000E+01
2.1000E+00	0.0000E+00
2.2000E+00	0.0000E+00
2.3000E+00	0.0000E+00
2.4000E+00	0.0000E+00
3.0000E+00	0.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Compartment number 2: RB

Compartment number 3: Environment

Compartment number 4: CR

Compartment number 5: MSL "B" Volume 1

Compartment number 6: MSL "C" Volume 3

PATHWAY DATA

Pathway number 1: DW to RB

Convection Data

Time (hr)	Flow Rate (% / day)
0.0000E+00	1.5000E+00
2.4000E+01	7.5000E-01
7.2000E+02	0.0000E+00

Pathway number 2: RB to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	6.6000E+03	0.0000E+00	0.0000E+00	0.0000E+00
3.3330E-01	6.6000E+03	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 3: Environment to CR Unfiltered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	4.0000E+02	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 4: Environment to CR Filtered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	9.0000E+02	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 5: CR to Environment - Exhaust

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	1.0000E+02	1.0000E+02	1.0000E+02
5.0000E-01	1.3000E+03	1.0000E+02	1.0000E+02	1.0000E+02
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 6: DW to MSL "B" Volume 1

Piping: Removal Data

Time (hr)	Flow Rate (cfm)	DF Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.0000E+00	4.7800E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.4000E+01	2.3900E-01	1.0000E+00	1.0000E+00	1.0000E+00
7.2000E+02	0.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Pathway number 7: DW to MSL "A" Volume 3

Piping: Removal Data

Time (hr)	Flow Rate (cfm)	DF Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.0000E+00	4.7800E-01	1.0000E+00	1.0000E+00	1.0000E+00
2.4000E+01	2.3900E-01	1.0000E+00	1.0000E+00	1.0000E+00
7.2000E+02	0.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

LOCATION DATA

Location EAB is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	5.2400E-05
1.0000E+00	5.2400E-05
2.0000E+00	5.2400E-05
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
7.2000E+02	3.5000E-04

Location LPZ is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	4.5200E-03
2.0000E+00	3.3300E-03
8.0000E+00	1.1900E-03
2.4000E+01	4.9600E-04
9.6000E+01	2.5600E-04
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
8.0000E+00	1.8000E-04
2.4000E+01	2.3000E-04
7.2000E+02	2.3000E-04

Location CR is in compartment 4

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	3.5200E-03
2.7780E-01	3.5200E-03
3.3300E-01	9.2600E-07
8.0000E+00	6.7500E-07
2.4000E+01	3.3900E-07

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        9.6000E+01          1.2600E-07
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)          Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.5000E-04
        7.2000E+02                 3.5000E-04

      Location Occupancy Factor Data
       Time (hr)          Occupancy Factor
        0.0000E+00            1.0000E+00
        2.4000E+01            6.0000E-01
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time             Time step
       0.0000E+00       1.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       5.0000E-01
       8.0000E+00       1.0000E+00
       2.4000E+01       2.0000E+00
       9.6000E+01       5.0000E+00
       7.2000E+02       0.0000E+00
```

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######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/14/2019  at 11:55:29
######################################################################




     ####   #     #  #####  #####   #     #  #####
    #    #  #     #    #    #    #  #     #    #
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    #    #  #     #    #    #       #     #    #
     ####    ####     #    #        ####     #


######################################################################
           Dose, Detailed model and Detailed Inventory Output
######################################################################

EAB Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3720E-03  2.4812E-01  1.2306E-02
Accumulated dose (rem)  1.3720E-03  2.4812E-01  1.2306E-02

LPZ Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1835E-01  2.1403E+01  1.0615E+00
Accumulated dose (rem)  1.1835E-01  2.1403E+01  1.0615E+00

CR Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.7178E-04  1.6156E+00  7.1568E-02
Accumulated dose (rem)  3.7178E-04  1.6156E+00  7.1568E-02

DW Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5339E+04  1.1556E-01  8.1875E+23  1.0363E+18
Kr-85m                 7.0976E+05  8.6246E-05  6.1104E+20  1.6510E+19
Kr-87                  1.2507E+06  4.4153E-05  3.0563E+20  3.0427E+19
Kr-88                  1.8753E+06  1.4955E-04  1.0235E+21  4.4068E+19
Rb-86                  5.6860E+03  6.9881E-05  4.8934E+20  1.2999E+17
I-131                  2.3333E+06  1.8821E-02  8.6521E+22  5.3353E+19
I-132                  3.2389E+06  3.1378E-04  1.4315E+21  7.5375E+19
I-133                  4.8078E+06  4.2441E-03  1.9217E+22  1.1030E+20
I-134                  4.2584E+06  1.5963E-04  7.1740E+20  1.0662E+20
I-135                  4.4365E+06  1.2633E-03  5.6353E+21  1.0261E+20
Xe-133                 4.8525E+06  2.5924E-02  1.1738E+23  1.1091E+20
Xe-135                 2.0375E+06  7.9785E-04  3.5591E+21  4.6188E+19
Cs-134                 6.2233E+05  4.8100E-01  2.1617E+24  1.4225E+19
Cs-136                 1.8605E+05  2.5385E-03  1.1240E+22  4.2535E+18
Cs-137                 5.0080E+05  5.7575E+00  2.5308E+25  1.1447E+19

DW Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4163E+23  0.0000E+00
Elemental I (atoms)    5.5058E+21  0.0000E+00
Organic I (atoms)      1.7028E+20  0.0000E+00
Aerosols (kg)          6.2647E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.7352E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.8338E-04
Total I (Ci)                                   1.9075E+07

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
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Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   0.3333    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   0.3333    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5522E+00  1.1603E-05  8.2204E+19  7.1009E+13
Kr-85m                 7.1261E+01  8.6592E-09  6.1349E+16  1.1264E+15
Kr-87                  1.2557E+02  4.4330E-09  3.0685E+16  2.0531E+15
Kr-88                  1.8828E+02  1.5016E-08  1.0276E+17  2.9991E+15
Rb-86                  5.7089E-01  7.0161E-09  4.9130E+16  8.9065E+12
I-131                  2.3426E+02  1.8896E-06  8.6866E+18  3.6554E+15
I-132                  3.1998E+02  3.0999E-08  1.4142E+17  5.0804E+15
I-133                  4.8271E+02  4.2612E-07  1.9294E+18  7.5512E+15
I-134                  4.2755E+02  1.6027E-08  7.2029E+16  7.1437E+15
I-135                  4.4543E+02  1.2684E-07  5.6579E+17  7.0108E+15
Xe-133                 4.8720E+02  2.6028E-06  1.1785E+19  7.5999E+15
Xe-135                 2.0457E+02  8.0106E-08  3.5734E+17  3.1708E+15
Cs-134                 6.2483E+01  4.8293E-05  2.1703E+20  9.7468E+14
Cs-136                 1.8679E+01  2.5487E-07  1.1286E+18  2.9144E+14
Cs-137                 5.0281E+01  5.7806E-04  2.5410E+21  7.8434E+14

RB Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4541E+19  0.0000E+00
Elemental I (atoms)    5.5267E+17  0.0000E+00
Organic I (atoms)      1.7093E+16  0.0000E+00
Aerosols (kg)          6.2898E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          9.8296E-09
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2492E-08
Total I (Ci)                                    1.9099E+03

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

RB to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.5426E+18
Elemental I (atoms)    0.0000E+00  2.0748E+16
Organic I (atoms)      0.0000E+00  6.4169E+14
Aerosols (kg)          0.0000E+00  2.3569E-05

Environment Integral Nuclide Release:

Time (h) =   0.3333       Ci           kg         Atoms         Bq
Kr-85                  1.7057E-01  4.3476E-07  3.0802E+18  6.3111E+09
Kr-85m                 2.7031E+00  3.2847E-10  2.3272E+15  1.0002E+11
Kr-87                  4.9151E+00  1.7352E-10  1.2011E+15  1.8186E+11
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Kr-88	7.1932E+00	5.7366E-10	3.9257E+15	2.6615E+11
Rb-86	2.1394E-02	2.6293E-10	1.8412E+15	7.9158E+08
I-131	8.7803E+00	7.0823E-08	3.2558E+17	3.2487E+11
I-132	1.2176E+01	1.1796E-09	5.3817E+15	4.5052E+11
I-133	1.8135E+01	1.6009E-08	7.2487E+16	6.7099E+11
I-134	1.7075E+01	6.4008E-10	2.8766E+15	6.3178E+11
I-135	1.6830E+01	4.7922E-09	2.1377E+16	6.2269E+11
Xe-133	1.8256E+01	9.7531E-08	4.4161E+17	6.7547E+11
Xe-135	7.6252E+00	2.9859E-09	1.3320E+16	2.8213E+11
Cs-134	2.3413E+00	1.8096E-06	8.1324E+18	8.6627E+10
Cs-136	7.0005E-01	9.5516E-09	4.2295E+16	2.5902E+10
Cs-137	1.8841E+00	2.1660E-05	9.5213E+19	6.9710E+10

Environment Transport Group Inventory:

Time (h) = 0.3333	Total Release	Release Rate/s	
Noble gases (atoms)	3.5426E+18	2.9525E+15	
Elemental I (atoms)	2.0744E+16	1.7288E+13	
Organic I (atoms)	6.4155E+14	5.3468E+11	
Aerosols (kg)	2.3569E-05	1.9642E-08	
Dose Effective (Ci) I-131 (Thyroid)			1.2376E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.5758E+01
Total I (Ci)			7.2996E+01

RB to Environment Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5426E+18
Elemental I (atoms)	0.0000E+00	2.0748E+16
Organic I (atoms)	0.0000E+00	6.4169E+14
Aerosols (kg)	0.0000E+00	2.3569E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2430E+16
Elemental I (atoms)	0.0000E+00	7.2796E+13
Organic I (atoms)	0.0000E+00	2.2514E+12
Aerosols (kg)	0.0000E+00	8.2692E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 0.3333	Pathway Filtered	Transported
Noble gases (atoms)	1.2042E+15	0.0000E+00
Elemental I (atoms)	7.0495E+12	0.0000E+00
Organic I (atoms)	2.1803E+11	0.0000E+00
Aerosols (kg)	8.0112E-09	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 0.3333	Ci	kg	Atoms	Decay
Kr-85	5.4048E-04	1.3776E-09	9.7602E+15	6.5136E+09
Kr-85m	8.4609E-03	1.0281E-12	7.2841E+12	1.0306E+11
Kr-87	1.4909E-02	5.2634E-13	3.6433E+12	1.8665E+11
Kr-88	2.2355E-02	1.7828E-12	1.2200E+13	2.7401E+11
Rb-86	6.7782E-05	8.3303E-13	5.8333E+12	8.1696E+08
I-131	2.7814E-02	2.2435E-10	1.0314E+15	3.3528E+11
I-132	3.7692E-02	3.6516E-12	1.6659E+13	4.6153E+11
I-133	5.7312E-02	5.0593E-11	2.2908E+14	6.9229E+11

I-134	5.0764E-02	1.9029E-12	8.5520E+12	6.4672E+11
I-135	5.2886E-02	1.5059E-11	6.7177E+13	6.4199E+11
Xe-133	5.7846E-02	3.0904E-10	1.3993E+15	6.9712E+11
Xe-135	2.4289E-02	9.5111E-12	4.2427E+13	2.9118E+11
Cs-134	7.4187E-03	5.7339E-09	2.5769E+16	8.9406E+10
Cs-136	2.2178E-03	3.0261E-11	1.3400E+14	2.6732E+10
Cs-137	5.9699E-03	6.8634E-08	3.0170E+17	7.1946E+10

CR Transport Group Inventory:

Time (h) = 0.3333	Atmosphere	Sump	
Noble gases (atoms)	1.1225E+16	0.0000E+00	
Elemental I (atoms)	6.5612E+13	0.0000E+00	
Organic I (atoms)	2.0292E+12	0.0000E+00	
Aerosols (kg)	7.4680E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3692E-11
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.7398E-11
Total I (Ci)			2.2647E-01

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2430E+16
Elemental I (atoms)	0.0000E+00	7.2796E+13
Organic I (atoms)	0.0000E+00	2.2514E+12
Aerosols (kg)	0.0000E+00	8.2692E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	1.2042E+15	0.0000E+00
Elemental I (atoms)	7.0495E+12	0.0000E+00
Organic I (atoms)	2.1803E+11	0.0000E+00
Aerosols (kg)	8.0112E-09	0.0000E+00

EAB Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2171E-04	1.2915E-02	1.0909E-03
Accumulated dose (rem)	1.8937E-03	2.6104E-01	1.3397E-02

LPZ Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.5003E-02	1.1140E+00	9.4098E-02
Accumulated dose (rem)	1.6335E-01	2.2517E+01	1.1556E+00

CR Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.1983E-04	2.8329E+00	1.2548E-01
Accumulated dose (rem)	9.9162E-04	4.4485E+00	1.9705E-01

DW Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	6.8009E+04	1.7334E-01	1.2281E+24	2.3096E+18
Kr-85m	1.0375E+06	1.2607E-04	8.9321E+20	3.6171E+19
Kr-87	1.7130E+06	6.0476E-05	4.1862E+20	6.3902E+19
Kr-88	2.7008E+06	2.1539E-04	1.4740E+21	9.5608E+19
Rb-86	6.0304E+02	7.4113E-06	5.1898E+19	1.6215E+17
I-131	2.5229E+05	2.0350E-03	9.3551E+21	6.6630E+19

```
I-132                  3.6181E+05  3.5051E-05  1.5991E+20  9.3943E+19
I-133                  5.1719E+05  4.5656E-04  2.0673E+21  1.3762E+20
I-134                  4.0377E+05  1.5135E-05  6.8021E+19  1.2989E+20
I-135                  4.7159E+05  1.3429E-04  5.9903E+20  1.2772E+20
Xe-133                 7.2742E+06  3.8862E-02  1.7596E+23  2.4715E+20
Xe-135                 3.0409E+06  1.1908E-03  5.3118E+21  1.0329E+20
Cs-134                 6.6019E+04  5.1026E-02  2.2932E+23  1.7745E+19
Cs-136                 1.9729E+04  2.6919E-04  1.1920E+21  5.3059E+18
Cs-137                 5.3127E+04  6.1078E-01  2.6848E+24  1.4280E+19

DW Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    1.4122E+24  0.0000E+00
Elemental I (atoms)    5.8262E+20  7.6685E+21
Organic I (atoms)      2.5457E+20  0.0000E+00
Aerosols (kg)          6.6457E-01  8.7318E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          8.3482E-05
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.0587E-04
Total I (Ci)                                    2.0066E+06

DW to  RB Transport Group Inventory:
Time (h) =   0.5000  Leakage Transport

Noble gases (atoms)      2.2071E+20
Elemental I (atoms)      7.3466E+17
Organic I (atoms)        3.9920E+16
Aerosols (kg)            8.3447E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   0.5000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.1654E+20
Elemental I (atoms)    0.0000E+00  3.8790E+17
Organic I (atoms)      0.0000E+00  2.1078E+16
Aerosols (kg)          0.0000E+00  4.4060E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   0.5000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.1654E+20
Elemental I (atoms)    0.0000E+00  3.8790E+17
Organic I (atoms)      0.0000E+00  2.1078E+16
Aerosols (kg)          0.0000E+00  4.4060E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms      Decay
Kr-85                  1.0060E+01  2.5640E-05  1.8166E+20  2.3307E+14
Kr-85m                 1.5347E+02  1.8648E-08  1.3212E+17  3.6268E+15
Kr-87                  2.5338E+02  8.9453E-09  6.1920E+16  6.3017E+15
Kr-88                  3.9949E+02  3.1859E-08  2.1802E+17  9.5507E+15
Rb-86                  6.9865E-01  8.5863E-09  6.0126E+16  2.3810E+13
I-131                  2.8694E+02  2.3145E-06  1.0640E+19  9.7735E+15
I-132                  3.7616E+02  3.6442E-08  1.6626E+17  1.3269E+16
I-133                  5.8833E+02  5.1935E-07  2.3516E+18  2.0126E+16
I-134                  4.5930E+02  1.7217E-08  7.7376E+16  1.7593E+16
I-135                  5.3645E+02  1.5275E-07  6.8141E+17  1.8544E+16
Xe-133                 1.0762E+03  5.7497E-06  2.6034E+19  2.4942E+16
Xe-135                 4.5297E+02  1.7738E-07  7.9125E+17  1.0468E+16
Cs-134                 7.6486E+01  5.9116E-05  2.6567E+20  2.6061E+15
Cs-136                 2.2857E+01  3.1187E-07  1.3810E+18  7.7907E+14
Cs-137                 6.1550E+01  7.0762E-04  3.1105E+21  2.0972E+15

RB Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    2.0889E+20  0.0000E+00
Elemental I (atoms)    6.7414E+17  0.0000E+00
Organic I (atoms)      3.7643E+16  0.0000E+00
Aerosols (kg)          7.6994E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.2013E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.5206E-08
Total I (Ci)                                    2.2472E+03
```

DW to RB Transport Group Inventory:
Time (h) = 0.5000 Leakage Transport

Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

RB to Environment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1797E+19
Elemental I (atoms)	3.4875E+16	2.1827E+16
Organic I (atoms)	1.4450E+15	6.8638E+14
Aerosols (kg)	3.9758E-05	2.4798E-05

Environment Integral Nuclide Release:

Time (h) = 0.5000	Ci	kg	Atoms	Bq
Kr-85	5.6802E-01	1.4478E-06	1.0257E+19	2.1017E+10
Kr-85m	8.8305E+00	1.0730E-09	7.6023E+15	3.2673E+11
Kr-87	1.5306E+01	5.4036E-10	3.7404E+15	5.6632E+11
Kr-88	2.3241E+01	1.8535E-09	1.2684E+16	8.5991E+11
Rb-86	2.2510E-02	2.7664E-10	1.9372E+15	8.3286E+08
I-131	9.2384E+00	7.4518E-08	3.4256E+17	3.4182E+11
I-132	1.2788E+01	1.2389E-09	5.6522E+15	4.7317E+11
I-133	1.9076E+01	1.6840E-08	7.6249E+16	7.0582E+11
I-134	1.7854E+01	6.6929E-10	3.0079E+15	6.6061E+11
I-135	1.7693E+01	5.0380E-09	2.2474E+16	6.5462E+11
Xe-133	6.0785E+01	3.2474E-07	1.4704E+18	2.2491E+12
Xe-135	2.5516E+01	9.9916E-09	4.4571E+16	9.4409E+11
Cs-134	2.4634E+00	1.9040E-06	8.5567E+18	9.1146E+10
Cs-136	7.3656E-01	1.0050E-08	4.4501E+16	2.7253E+10
Cs-137	1.9824E+00	2.2790E-05	1.0018E+20	7.3347E+10

Environment Transport Group Inventory:

Time (h) = 0.5000	Total Release	Release Rate/s	
Noble gases (atoms)	1.1796E+19	6.5536E+15	
Elemental I (atoms)	2.1822E+16	1.2123E+13	
Organic I (atoms)	6.8623E+14	3.8124E+11	
Aerosols (kg)	2.4798E-05	1.3777E-08	
Dose Effective (Ci) I-131 (Thyroid)			1.3020E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.6575E+01
Total I (Ci)			7.6650E+01

RB to Environment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1797E+19
Elemental I (atoms)	3.4875E+16	2.1827E+16
Organic I (atoms)	1.4450E+15	6.8638E+14
Aerosols (kg)	3.9758E-05	2.4798E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2437E+16
Elemental I (atoms)	0.0000E+00	7.2797E+13
Organic I (atoms)	0.0000E+00	2.2515E+12
Aerosols (kg)	0.0000E+00	8.2693E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00

```
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    3.3232E+15  0.0000E+00
Elemental I (atoms)    1.9412E+13  0.0000E+00
Organic I (atoms)      6.0037E+11  0.0000E+00
Aerosols (kg)          2.2105E-08  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms      Decay
Kr-85                  4.3882E-04  1.1185E-09  7.9242E+15  1.7280E+10
Kr-85m                 6.6944E-03  8.1347E-13  5.7633E+12  2.6952E+11
Kr-87                  1.1053E-02  3.9021E-13  2.7011E+12  4.7097E+11
Kr-88                  1.7426E-02  1.3897E-12  9.5105E+12  7.1068E+11
Rb-86                  5.4976E-05  6.7566E-13  4.7313E+12  2.1665E+09
I-131                  2.2552E-02  1.8190E-10  8.3622E+14  8.8897E+11
I-132                  2.9081E-02  2.8173E-12  1.2853E+13  1.1942E+12
I-133                  4.6239E-02  4.0818E-11  1.8482E+14  1.8305E+12
I-134                  3.6098E-02  1.3532E-12  6.0814E+12  1.5960E+12
I-135                  4.2162E-02  1.2006E-11  5.3556E+13  1.6863E+12
Xe-133                 4.6963E-02  2.5090E-10  1.1360E+15  1.8493E+12
Xe-135                 1.9928E-02  7.8034E-12  3.4810E+13  7.7714E+11
Cs-134                 6.0186E-03  4.6518E-09  2.0906E+16  2.3713E+11
Cs-136                 1.7986E-03  2.4541E-11  1.0867E+14  7.0887E+10
Cs-137                 4.8433E-03  5.5682E-08  2.4476E+17  1.9082E+11

CR Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    9.1131E+15  0.0000E+00
Elemental I (atoms)    5.3037E+13  0.0000E+00
Organic I (atoms)      1.6403E+12  0.0000E+00
Aerosols (kg)          6.0586E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.1076E-11
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.4015E-11
Total I (Ci)                                    1.7613E-01

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2437E+16
Elemental I (atoms)    0.0000E+00  7.2797E+13
Organic I (atoms)      0.0000E+00  2.2515E+12
Aerosols (kg)          0.0000E+00  8.2693E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    3.3232E+15  0.0000E+00
Elemental I (atoms)    1.9412E+13  0.0000E+00
Organic I (atoms)      6.0037E+11  0.0000E+00
Aerosols (kg)          2.2105E-08  0.0000E+00

EAB Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
```

Delta dose (rem)	7.3479E-03	4.5348E-02	9.4897E-03
Accumulated dose (rem)	9.2416E-03	3.0639E-01	2.2887E-02

LPZ Doses:

Time (h) = 1.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.3382E-01	3.9117E+00	8.1858E-01
Accumulated dose (rem)	7.9718E-01	2.6429E+01	1.9742E+00

CR Doses:

Time (h) = 1.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2455E-03	6.3032E+00	2.7917E-01
Accumulated dose (rem)	2.2371E-03	1.0752E+01	4.7621E-01

DW Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	2.1963E+01	6.9069E-07	7.1715E+18	1.3792E+15
Co-60	2.6297E+01	2.3263E-05	2.3349E+20	1.6512E+15
Kr-85	4.9869E+05	1.2711E+00	9.0055E+24	2.1469E+19
Kr-85m	7.0415E+06	8.5564E-04	6.0621E+21	3.1473E+20
Kr-87	9.5646E+06	3.3767E-04	2.3373E+21	4.7198E+20
Kr-88	1.7529E+07	1.3979E-03	9.5665E+21	8.0098E+20
Rb-86	7.5756E+02	9.3104E-06	6.5196E+19	2.1203E+17
Sr-89	3.7226E+04	1.2813E-03	8.6701E+21	2.3378E+18
Sr-90	4.8973E+03	3.5902E-02	2.4023E+23	3.0751E+17
Sr-91	4.3069E+04	1.1881E-05	7.8626E+19	2.7517E+18
Sr-92	3.7386E+04	2.9744E-06	1.9470E+19	2.4958E+18
Y-90	5.2590E+01	9.6662E-08	6.4679E+17	3.2617E+15
Y-91	4.7268E+02	1.9274E-05	1.2755E+20	2.9677E+16
Y-92	7.5766E+02	7.8739E-08	5.1541E+17	4.2881E+16
Y-93	4.9803E+02	1.4928E-07	9.6662E+17	3.1787E+16
Zr-95	5.7684E+02	2.6851E-05	1.7021E+20	3.6225E+16
Zr-97	5.3625E+02	2.8051E-07	1.7415E+18	3.4002E+16
Nb-95	5.7824E+02	1.4788E-05	9.3740E+19	3.6309E+16
Mo-99	7.3090E+03	1.5239E-05	9.2700E+19	4.6010E+17
Tc-99m	6.5180E+03	1.2396E-06	7.5403E+18	4.0917E+17
Ru-103	6.4043E+03	1.9844E-04	1.1602E+21	4.0221E+17
Ru-105	3.9092E+03	5.8154E-07	3.3354E+18	2.5477E+17
Ru-106	2.7875E+03	8.3320E-04	4.7337E+21	1.7504E+17
Rh-105	4.2812E+03	5.0722E-06	2.9091E+19	2.6889E+17
Sb-127	7.3024E+03	2.7345E-05	1.2966E+20	4.5936E+17
Sb-129	1.9363E+04	3.4433E-06	1.6075E+19	1.2633E+18
Te-127	7.2686E+03	2.7542E-06	1.3060E+19	4.5630E+17
Te-127m	1.2473E+03	1.3224E-04	6.2704E+20	7.8323E+16
Te-129	2.0176E+04	9.6343E-07	4.4976E+18	1.2847E+18
Te-129m	4.1102E+03	1.3644E-04	6.3694E+20	2.5809E+17
Te-131m	1.5109E+04	1.8948E-05	8.7103E+19	9.5394E+17
Te-132	1.0996E+05	3.6219E-04	1.6524E+21	6.9190E+18
I-131	4.0160E+05	3.2394E-03	1.4892E+22	9.2575E+19
I-132	5.7885E+05	5.6078E-05	2.5584E+20	1.3141E+20
I-133	8.1089E+05	7.1582E-04	3.2412E+21	1.9039E+20
I-134	4.3350E+05	1.6250E-05	7.3030E+19	1.6406E+20
I-135	7.1342E+05	2.0315E-04	9.0620E+20	1.7498E+20
Xe-133	5.3281E+07	2.8465E-01	1.2889E+24	2.2952E+21
Xe-135	2.2407E+07	8.7742E-03	3.9140E+22	9.6498E+20
Cs-134	8.2998E+04	6.4149E-02	2.8829E+23	2.3208E+19
Cs-136	2.4777E+04	3.3806E-04	1.4969E+21	6.9376E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	1.8676E+19
Ba-139	3.5806E+04	2.1890E-06	9.4838E+18	2.5389E+18
Ba-140	5.7350E+04	7.8337E-04	3.3697E+21	3.6031E+18
La-140	6.3959E+02	1.1507E-06	4.9498E+18	3.9410E+16
La-141	4.5294E+02	8.0091E-08	3.4207E+17	2.9664E+16
La-142	3.3732E+02	2.3564E-08	9.9933E+16	2.3607E+16
Ce-141	1.3564E+03	4.7604E-05	2.0332E+20	8.5175E+16
Ce-143	1.2833E+03	1.9324E-06	8.1380E+18	8.0984E+16
Ce-144	1.0891E+03	3.4147E-04	1.4281E+21	6.8391E+16
Pr-143	5.0935E+02	7.5641E-06	3.1854E+19	3.1982E+16
Nd-147	2.1212E+02	2.6220E-06	1.0742E+19	1.3328E+16
Np-239	1.5245E+04	6.5714E-05	1.6558E+20	9.6008E+17
Pu-238	4.3973E+00	2.5685E-04	6.4992E+20	2.7612E+14

Pu-239	3.8516E-01	6.1967E-03	1.5614E+22	2.4185E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	4.5297E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	9.7632E+15
Am-241	1.0417E-01	3.0350E-05	7.5838E+19	6.5407E+12
Cm-242	2.6436E+01	7.9764E-06	1.9849E+19	1.6601E+15
Cm-244	1.7474E+00	2.1599E-05	5.3307E+19	1.0972E+14

DW Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.0351E+25	0.0000E+00	
Elemental I (atoms)	9.0808E+20	2.1014E+22	
Organic I (atoms)	6.7270E+20	0.0000E+00	
Aerosols (kg)	8.8772E-01	2.1825E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3210E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6621E-04
Total I (Ci)			2.9383E+06

DW to RB Transport Group Inventory:

Time (h) = 1.0000 Leakage Transport

Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 1.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 1.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	5.9291E-03	1.8646E-10	1.9360E+15	1.9398E+11
Co-60	7.0991E-03	6.2802E-09	6.3034E+16	2.3225E+11
Kr-85	9.1788E+01	2.3395E-04	1.6575E+21	3.0084E+15
Kr-85m	1.2960E+03	1.5749E-07	1.1158E+18	4.3847E+16
Kr-87	1.7604E+03	6.2150E-08	4.3020E+17	6.4737E+16
Kr-88	3.2263E+03	2.5730E-07	1.7608E+18	1.1121E+17
Rb-86	8.0594E-01	9.9049E-09	6.9359E+16	7.3995E+13
Sr-89	1.0050E+01	3.4591E-07	2.3406E+18	3.2880E+14
Sr-90	1.3221E+00	9.6921E-06	6.4853E+19	4.3252E+13
Sr-91	1.1627E+01	3.2074E-09	2.1226E+16	3.8488E+14
Sr-92	1.0093E+01	8.0297E-10	5.2561E+15	3.4420E+14
Y-90	1.7392E-02	3.1967E-11	2.1390E+14	5.2925E+11
Y-91	1.2815E-01	5.2257E-09	3.4582E+16	4.1861E+12
Y-92	6.5185E-01	6.7743E-11	4.4343E+14	1.6140E+13
Y-93	1.3445E-01	4.0299E-11	2.6095E+14	4.4475E+12
Zr-95	1.5572E-01	7.2487E-09	4.5950E+16	5.0949E+12
Zr-97	1.4477E-01	7.5728E-11	4.7015E+14	4.7675E+12
Nb-95	1.5610E-01	3.9921E-09	2.5306E+16	5.1069E+12
Mo-99	1.9732E+00	4.1140E-09	2.5026E+16	6.4661E+13
Tc-99m	1.7596E+00	3.3464E-10	2.0356E+15	5.7545E+13
Ru-103	1.7289E+00	5.3570E-08	3.1321E+17	5.6569E+13
Ru-105	1.0553E+00	1.5700E-10	9.0042E+14	3.5408E+13
Ru-106	7.5253E-01	2.2493E-07	1.2779E+18	2.4620E+13
Rh-105	1.1558E+00	1.3693E-09	7.8535E+15	3.7816E+13
Sb-127	1.9714E+00	7.3820E-09	3.5004E+16	6.4572E+13
Sb-129	5.2274E+00	9.2957E-10	4.3395E+15	1.7551E+14
Te-127	1.9623E+00	7.4353E-10	3.5257E+15	6.4177E+13
Te-127m	3.3673E-01	3.5699E-08	1.6928E+17	1.1016E+13

Te-129	5.4469E+00	2.6009E-10	1.2142E+15	1.7978E+14
Te-129m	1.1096E+00	3.6833E-08	1.7195E+17	3.6301E+13
Te-131m	4.0788E+00	5.1151E-09	2.3515E+16	1.3394E+14
Te-132	2.9684E+01	9.7777E-08	4.4608E+17	9.7251E+14
I-131	3.5419E+02	2.8569E-06	1.3133E+19	3.1134E+16
I-132	4.2620E+02	4.1290E-08	1.8837E+17	3.9983E+16
I-133	7.1540E+02	6.3153E-07	2.8595E+18	6.3584E+16
I-134	3.8245E+02	1.4336E-08	6.4430E+16	4.5658E+16
I-135	6.2940E+02	1.7922E-07	7.9948E+17	5.7447E+16
Xe-133	9.8026E+03	5.2369E-05	2.3712E+20	3.2152E+17
Xe-135	4.0790E+03	1.5973E-06	7.1251E+18	1.3437E+17
Cs-134	8.8298E+01	6.8246E-05	3.0670E+20	8.1022E+15
Cs-136	2.6359E+01	3.5965E-07	1.5925E+18	2.4206E+15
Cs-137	7.1057E+01	8.1692E-04	3.5909E+21	6.5201E+15
Ba-139	9.6662E+00	5.9095E-10	2.5603E+15	3.4342E+14
Ba-140	1.5482E+01	2.1148E-07	9.0969E+17	5.0669E+14
La-140	2.3207E-01	4.1753E-10	1.7960E+15	6.8543E+12
La-141	1.2228E-01	2.1622E-11	9.2346E+13	4.1162E+12
La-142	9.1063E-02	6.3614E-12	2.6978E+13	3.2067E+12
Ce-141	3.6614E-01	1.2850E-08	5.4882E+16	1.1979E+13
Ce-143	3.4644E-01	5.2169E-10	2.1970E+15	1.1372E+13
Ce-144	2.9402E-01	9.2185E-08	3.8552E+17	9.6192E+12
Pr-143	1.3761E-01	2.0435E-09	8.6058E+15	4.5005E+12
Nd-147	5.7263E-02	7.0784E-10	2.8998E+15	1.8742E+12
Np-239	4.1156E+00	1.7740E-08	4.4701E+16	1.3491E+14
Pu-238	1.1871E-03	6.9341E-08	1.7545E+17	3.8836E+10
Pu-239	1.0398E-04	1.6729E-06	4.2152E+18	3.4017E+09
Pu-240	1.9474E-04	8.5464E-07	2.1445E+18	6.3711E+09
Pu-241	4.1974E-02	4.0747E-07	1.0182E+18	1.3732E+12
Am-241	2.8122E-05	8.1936E-09	2.0474E+16	9.1998E+08
Cm-242	7.1367E-03	2.1533E-09	5.3585E+15	2.3349E+11
Cm-244	4.7173E-04	5.8308E-09	1.4391E+16	1.5433E+10

RB Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9051E+21	0.0000E+00	
Elemental I (atoms)	8.1986E+17	0.0000E+00	
Organic I (atoms)	1.6626E+17	0.0000E+00	
Aerosols (kg)	9.0293E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.4734E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.8467E-08
Total I (Ci)			2.5076E+03

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5349E+20
Elemental I (atoms)	1.5585E+17	2.5568E+16
Organic I (atoms)	1.6513E+16	1.1524E+15
Aerosols (kg)	1.7530E-04	2.8990E-05

Environment Integral Nuclide Release:

Time (h) = 1.0000	Ci	kg	Atoms	Bq
Co-58	1.4302E-05	4.4978E-13	4.6700E+12	5.2918E+05
Co-60	1.7123E-05	1.5148E-11	1.5204E+14	6.3356E+05
Kr-85	7.3937E+00	1.8845E-05	1.3352E+20	2.7357E+11
Kr-85m	1.0766E+02	1.3083E-08	9.2689E+16	3.9836E+12
Kr-87	1.5860E+02	5.5990E-09	3.8756E+16	5.8680E+12
Kr-88	2.7292E+02	2.1765E-08	1.4895E+17	1.0098E+13
Rb-86	2.6282E-02	3.2300E-10	2.2618E+15	9.7242E+08
Sr-89	2.4242E-02	8.3442E-10	5.6461E+15	8.9695E+08
Sr-90	3.1889E-03	2.3378E-08	1.5643E+17	1.1799E+08

Sr-91	2.8363E-02	7.8242E-12	5.1778E+13	1.0494E+09
Sr-92	2.5333E-02	2.0155E-12	1.3193E+13	9.3733E+08
Y-90	3.9479E-05	7.2562E-14	4.8553E+11	1.4607E+06
Y-91	3.0871E-04	1.2588E-11	8.3304E+13	1.1422E+07
Y-92	1.2550E-03	1.3042E-13	8.5371E+11	4.6433E+07
Y-93	3.2775E-04	9.8238E-14	6.3613E+11	1.2127E+07
Zr-95	3.7564E-04	1.7485E-11	1.1084E+14	1.3899E+07
Zr-97	3.5140E-04	1.8382E-13	1.1412E+12	1.3002E+07
Nb-95	3.7653E-04	9.6290E-12	6.1039E+13	1.3931E+07
Mo-99	4.7670E-03	9.9392E-12	6.0460E+13	1.7638E+08
Tc-99m	4.2451E-03	8.0732E-13	4.9109E+12	1.5707E+08
Ru-103	4.1707E-03	1.2923E-10	7.5556E+14	1.5431E+08
Ru-105	2.6078E-03	3.8795E-13	2.2251E+12	9.6490E+07
Ru-106	1.8152E-03	5.4255E-10	3.0824E+15	6.7161E+07
Rh-105	2.7883E-03	3.3035E-12	1.8947E+13	1.0317E+08
Sb-127	4.7605E-03	1.7826E-11	8.4529E+13	1.7614E+08
Sb-129	1.2926E-02	2.2986E-12	1.0731E+13	4.7827E+08
Te-127	4.7334E-03	1.7936E-12	8.5048E+12	1.7514E+08
Te-127m	8.1221E-04	8.6106E-11	4.0830E+14	3.0052E+07
Te-129	1.3284E-02	6.3429E-13	2.9611E+12	4.9149E+08
Te-129m	2.6764E-03	8.8842E-11	4.1474E+14	9.9026E+07
Te-131m	9.8734E-03	1.2382E-11	5.6920E+13	3.6532E+08
Te-132	7.1697E-02	2.3616E-10	1.0774E+15	2.6528E+09
I-131	1.0843E+01	8.7459E-08	4.0205E+17	4.0118E+11
I-132	1.4791E+01	1.4329E-09	6.5373E+15	5.4726E+11
I-133	2.2340E+01	1.9721E-08	8.9294E+16	8.2657E+11
I-134	1.9954E+01	7.4799E-10	3.3616E+15	7.3829E+11
I-135	2.0613E+01	5.8695E-09	2.6183E+16	7.6268E+11
Xe-133	7.9016E+02	4.2213E-06	1.9114E+19	2.9236E+13
Xe-135	3.3009E+02	1.2926E-07	5.7659E+17	1.2213E+13
Cs-134	2.8765E+00	2.2232E-06	9.9915E+18	1.0643E+11
Cs-136	8.5993E-01	1.1733E-08	5.1955E+16	3.1818E+10
Cs-137	2.3148E+00	2.6612E-05	1.1698E+20	8.5646E+10
Ba-139	2.5234E-02	1.5427E-12	6.6837E+12	9.3365E+08
Ba-140	3.7357E-02	5.1028E-10	2.1950E+15	1.3822E+09
La-140	5.1388E-04	9.2452E-13	3.9769E+12	1.9013E+07
La-141	3.0312E-04	5.3599E-14	2.2892E+11	1.1216E+07
La-142	2.3570E-04	1.6465E-14	6.9829E+10	8.7211E+06
Ce-141	8.8318E-04	3.0996E-11	1.3238E+14	3.2678E+07
Ce-143	8.3834E-04	1.2624E-12	5.3163E+12	3.1019E+07
Ce-144	7.0921E-04	2.2236E-10	9.2991E+14	2.6241E+07
Pr-143	3.3183E-04	4.9278E-12	2.0752E+13	1.2278E+07
Nd-147	1.3818E-04	1.7080E-12	6.9973E+12	5.1125E+06
Np-239	9.9458E-03	4.2871E-11	1.0802E+14	3.6799E+08
Pu-238	2.8633E-06	1.6725E-10	4.2320E+14	1.0594E+05
Pu-239	2.5080E-07	4.0349E-09	1.0167E+16	9.2795E+03
Pu-240	4.6973E-07	2.0614E-09	5.1725E+15	1.7380E+04
Pu-241	1.0124E-04	9.8282E-10	2.4559E+15	3.7460E+06
Am-241	6.7829E-08	1.9763E-11	4.9383E+13	2.5097E+03
Cm-242	1.7214E-05	5.1940E-12	1.2925E+13	6.3693E+05
Cm-244	1.1378E-06	1.4064E-11	3.4711E+13	4.2099E+04

Environment Transport Group Inventory:

Time (h) = 1.0000	Total Release	Release Rate/s	
Noble gases (atoms)	1.5349E+20	4.2636E+16	
Elemental I (atoms)	2.5563E+16	7.1007E+12	
Organic I (atoms)	1.1522E+15	3.2005E+11	
Aerosols (kg)	2.8990E-05	8.0529E-09	
Dose Effective (Ci) I-131 (Thyroid)			1.5266E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.9403E+01
Total I (Ci)			8.8540E+01

RB to Environment Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5349E+20
Elemental I (atoms)	1.5585E+17	2.5568E+16
Organic I (atoms)	1.6513E+16	1.1524E+15
Aerosols (kg)	1.7530E-04	2.8990E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2462E+16
Elemental I (atoms)	0.0000E+00	7.2798E+13
Organic I (atoms)	0.0000E+00	2.2516E+12
Aerosols (kg)	0.0000E+00	8.2694E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.5731E+13
Elemental I (atoms)	1.4275E+09	4.4149E+07
Organic I (atoms)	1.7780E+08	5.4989E+06
Aerosols (kg)	1.5994E-12	4.9466E-14

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 1.0000	Pathway Filtered	Transported
Noble gases (atoms)	6.2516E+15	0.0000E+00
Elemental I (atoms)	3.6320E+13	0.0000E+00
Organic I (atoms)	1.1233E+12	0.0000E+00
Aerosols (kg)	4.1512E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	2.3690E-12	7.4502E-20	7.7355E+05	5.3284E+01
Co-60	2.8365E-12	2.5093E-18	2.5186E+07	6.3796E+01
Kr-85	3.0168E-04	7.6894E-10	5.4478E+15	4.1510E+10
Kr-85m	4.2597E-03	5.1761E-13	3.6672E+12	6.2610E+11
Kr-87	5.7861E-03	2.0427E-13	1.4140E+12	1.0097E+12
Kr-88	1.0604E-02	8.4567E-13	5.7872E+12	1.6200E+12
Rb-86	3.7338E-05	4.5888E-13	3.2133E+12	5.1911E+09
Sr-89	4.0153E-09	1.3821E-16	9.3520E+08	9.0316E+04
Sr-90	5.2824E-10	3.8726E-15	2.5912E+10	1.1881E+04
Sr-91	4.6456E-09	1.2816E-18	8.4810E+06	1.0543E+05
Sr-92	4.0327E-09	3.2083E-19	2.1001E+06	9.3616E+04
Y-90	7.3826E-12	1.3569E-20	9.0796E+04	1.5508E+02
Y-91	5.1279E-11	2.0910E-18	1.3838E+07	1.1515E+03
Y-92	3.2148E-10	3.3409E-20	2.1869E+05	5.8076E+03
Y-93	5.3720E-11	1.6102E-20	1.0427E+05	1.2185E+03
Zr-95	6.2221E-11	2.8963E-18	1.8360E+07	1.3995E+03
Zr-97	5.7843E-11	3.0258E-20	1.8785E+05	1.3075E+03
Nb-95	6.2372E-11	1.5951E-18	1.0111E+07	1.4028E+03
Mo-99	7.8838E-10	1.6438E-18	9.9991E+06	1.7755E+04
Tc-99m	7.0306E-10	1.3371E-19	8.1333E+05	1.5806E+04
Ru-103	6.9080E-10	2.1404E-17	1.2514E+08	1.5538E+04
Ru-105	4.2166E-10	6.2728E-20	3.5977E+05	9.6679E+03
Ru-106	3.0068E-10	8.9874E-17	5.1060E+08	6.7627E+03
Rh-105	4.6180E-10	5.4712E-19	3.1379E+06	1.0387E+04
Sb-127	7.8768E-10	2.9495E-18	1.3986E+07	1.7732E+04
Sb-129	2.0886E-09	3.7142E-19	1.7339E+06	4.7914E+04
Te-127	7.8403E-10	2.9708E-19	1.4087E+06	1.7628E+04
Te-127m	1.3454E-10	1.4264E-17	6.7636E+07	3.0260E+03
Te-129	2.1763E-09	1.0392E-19	4.8513E+05	4.9254E+04
Te-129m	4.4335E-10	1.4717E-17	6.8703E+07	9.9714E+03
Te-131m	1.6297E-09	2.0438E-18	9.3954E+06	3.6758E+04
Te-132	1.1861E-08	3.9067E-17	1.7823E+08	2.6705E+05
I-131	1.5301E-02	1.2342E-10	5.6735E+14	2.1291E+12
I-132	1.7001E-02	1.6470E-12	7.5142E+12	2.6871E+12
I-133	3.0909E-02	2.7285E-11	1.2355E+14	4.3556E+12
I-134	1.6524E-02	6.1941E-13	2.7837E+12	3.2578E+12
I-135	2.7193E-02	7.7433E-12	3.4542E+13	3.9507E+12
Xe-133	3.2281E-02	1.7246E-10	7.8088E+14	4.4423E+12
Xe-135	1.4077E-02	5.5122E-12	2.4589E+13	1.8915E+12
Cs-134	4.0907E-03	3.1617E-09	1.4209E+16	5.6837E+11
Cs-136	1.2212E-03	1.6662E-11	7.3779E+13	1.6983E+11

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Cs-137                 3.2919E-03  3.7846E-08  1.6636E+17  4.5738E+11
Ba-139                 3.8622E-09  2.3612E-19  1.0230E+06  9.2493E+04
Ba-140                 6.1860E-09  8.4498E-17  3.6347E+08  1.3917E+05
La-140                 1.0079E-10  1.8132E-19  7.7997E+05  2.0633E+03
La-141                 4.8857E-11  8.6390E-21  3.6898E+04  1.1230E+03
La-142                 3.6385E-11  2.5417E-21  1.0779E+04  8.6549E+02
Ce-141                 1.4629E-10  5.1341E-18  2.1928E+07  3.2903E+03
Ce-143                 1.3842E-10  2.0844E-19  8.7781E+05  3.1213E+03
Ce-144                 1.1748E-10  3.6833E-17  1.5404E+08  2.6423E+03
Pr-143                 5.4995E-11  8.1670E-19  3.4393E+06  1.2366E+03
Nd-147                 2.2880E-11  2.8282E-19  1.1586E+06  5.1476E+02
Np-239                 1.6444E-09  7.0883E-18  1.7861E+07  3.7041E+04
Pu-238                 4.7431E-13  2.7705E-17  7.0103E+07  1.0668E+01
Pu-239                 4.1546E-14  6.6841E-16  1.6842E+09  9.3440E-01
Pu-240                 7.7811E-14  3.4148E-16  8.5684E+08  1.7501E+00
Pu-241                 1.6771E-11  1.6281E-16  4.0682E+08  3.7720E+02
Am-241                 1.1236E-14  3.2738E-18  8.1807E+06  2.5271E-01
Cm-242                 2.8515E-12  8.6037E-19  2.1410E+06  6.4136E+01
Cm-244                 1.8848E-13  2.3297E-18  5.7500E+06  4.2392E+00

CR Transport Group Inventory:
Time (h) =   1.0000    Atmosphere     Sump
Noble gases (atoms)    6.2642E+15  0.0000E+00
Elemental I (atoms)    3.5683E+13  0.0000E+00
Organic I (atoms)      1.1037E+12  0.0000E+00
Aerosols (kg)          4.1178E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.4652E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.3425E-12
Total I (Ci)                                   1.0693E-01

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2462E+16
Elemental I (atoms)    0.0000E+00  7.2798E+13
Organic I (atoms)      0.0000E+00  2.2516E+12
Aerosols (kg)          0.0000E+00  8.2694E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.5731E+13
Elemental I (atoms)    1.4275E+09  4.4149E+07
Organic I (atoms)      1.7780E+08  5.4989E+06
Aerosols (kg)          1.5994E-12  4.9466E-14

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    6.2516E+15  0.0000E+00
Elemental I (atoms)    3.6320E+13  0.0000E+00
Organic I (atoms)      1.1233E+12  0.0000E+00
Aerosols (kg)          4.1512E-08  0.0000E+00

EAB Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.0381E-02  1.0227E-01  7.5822E-02
Accumulated dose (rem)  7.9623E-02  4.0866E-01  9.8709E-02

LPZ Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.0711E+00  8.8220E+00  6.5404E+00
Accumulated dose (rem)  6.8682E+00  3.5251E+01  8.5146E+00

CR Doses:

Time (h) =   1.8800    Whole Body   Thyroid       TEDE
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Delta dose (rem)	1.0983E-03	6.5340E+00	2.8951E-01
Accumulated dose (rem)	3.3354E-03	1.7286E+01	7.6573E-01

DW Compartment Nuclide Inventory:

Time (h) = 1.8800	Ci	kg	Atoms	Decay
Co-58	2.1955E+01	6.9045E-07	7.1689E+18	3.9531E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	4.7336E+15
Kr-85	1.2560E+06	3.2014E+00	2.2682E+25	1.2927E+20
Kr-85m	1.5477E+07	1.8807E-03	1.3325E+22	1.7247E+21
Kr-87	1.4911E+07	5.2643E-04	3.6439E+21	2.0614E+21
Kr-88	3.5616E+07	2.8404E-03	1.9437E+22	4.1616E+21
Rb-86	7.5653E+02	9.2977E-06	6.5107E+19	3.0077E+17
Sr-89	3.7207E+04	1.2807E-03	8.6657E+21	6.7002E+18
Sr-90	4.8973E+03	3.5902E-02	2.4023E+23	8.8155E+17
Sr-91	4.0390E+04	1.1142E-05	7.3736E+19	7.6414E+18
Sr-92	2.9851E+04	2.3749E-06	1.5546E+19	6.4199E+18
Y-90	5.5252E+01	1.0155E-07	6.7952E+17	9.2170E+15
Y-91	4.7296E+02	1.9286E-05	1.2763E+20	8.5040E+16
Y-92	9.7894E+02	1.0174E-07	6.6594E+17	1.0121E+17
Y-93	4.6885E+02	1.4053E-07	9.0998E+17	8.8436E+16
Zr-95	5.7661E+02	2.6840E-05	1.7014E+20	1.0383E+17
Zr-97	5.1724E+02	2.7057E-07	1.6798E+18	9.5739E+16
Nb-95	5.7824E+02	1.4787E-05	9.3739E+19	1.0409E+17
Mo-99	7.2417E+03	1.5099E-05	9.1847E+19	1.3129E+18
Tc-99m	6.5103E+03	1.2381E-06	7.5314E+18	1.1685E+18
Ru-103	6.4001E+03	1.9831E-04	1.1594E+21	1.1527E+18
Ru-105	3.4074E+03	5.0690E-07	2.9072E+18	6.8291E+17
Ru-106	2.7874E+03	8.3315E-04	4.7333E+21	5.0178E+17
Rh-105	4.2705E+03	5.0595E-06	2.9018E+19	7.6976E+17
Sb-127	7.2544E+03	2.7165E-05	1.2881E+20	1.3125E+18
Sb-129	1.6813E+04	2.9899E-06	1.3958E+19	3.3800E+18
Te-127	7.2653E+03	2.7530E-06	1.3054E+19	1.3051E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.2453E+17
Te-129	1.8869E+04	9.0099E-07	4.2061E+18	3.5192E+18
Te-129m	4.1101E+03	1.3643E-04	6.3692E+20	7.3985E+17
Te-131m	1.4805E+04	1.8566E-05	8.5350E+19	2.7071E+18
Te-132	1.0910E+05	3.5937E-04	1.6395E+21	1.9758E+19
I-131	4.1577E+05	3.3537E-03	1.5417E+22	1.4058E+20
I-132	5.9040E+05	5.7197E-05	2.6095E+20	2.0005E+20
I-133	8.1745E+05	7.2162E-04	3.2674E+21	2.8604E+20
I-134	2.2441E+05	8.4123E-06	3.7806E+19	2.0137E+20
I-135	6.7531E+05	1.9229E-04	8.5779E+20	2.5653E+20
Xe-133	1.3384E+08	7.1501E-01	3.2375E+24	1.3797E+22
Xe-135	5.5691E+07	2.1808E-02	9.7281E+22	5.7856E+21
Cs-134	8.2995E+04	6.4147E-02	2.8828E+23	3.2937E+19
Cs-136	2.4729E+04	3.3740E-04	1.4940E+21	9.8390E+18
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.6505E+19
Ba-139	2.3002E+04	1.4062E-06	6.0924E+18	5.9303E+18
Ba-140	5.7235E+04	7.8181E-04	3.3630E+21	1.0319E+19
La-140	6.8881E+02	1.2392E-06	5.3306E+18	1.1048E+17
La-141	3.8783E+02	6.8577E-08	2.9289E+17	7.8841E+16
La-142	2.2710E+02	1.5864E-08	6.7279E+16	5.6261E+16
Ce-141	1.3561E+03	4.7594E-05	2.0328E+20	2.4415E+17
Ce-143	1.2598E+03	1.8970E-06	7.9890E+18	2.3003E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	1.9605E+17
Pr-143	5.0943E+02	7.5652E-06	3.1859E+19	9.1674E+16
Nd-147	2.1163E+02	2.6159E-06	1.0717E+19	3.8162E+16
Np-239	1.5082E+04	6.5009E-05	1.6380E+20	2.7375E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	7.9155E+14
Pu-239	3.8521E-01	6.1974E-03	1.5616E+22	6.9335E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.2985E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	2.7988E+16
Am-241	1.0418E-01	3.0353E-05	7.5846E+19	1.8751E+13
Cm-242	2.6432E+01	7.9751E-06	1.9846E+19	4.7585E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.1454E+14

DW Transport Group Inventory:

Time (h) = 1.8800	Atmosphere	Sump
Noble gases (atoms)	2.6053E+25	0.0000E+00
Elemental I (atoms)	8.9615E+20	4.4848E+22
Organic I (atoms)	1.3915E+21	0.0000E+00

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Aerosols (kg)          8.8766E-01  4.5260E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          1.3540E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.6847E-04
Total I (Ci)                                    2.7233E+06

DW to  RB Transport Group Inventory:
Time (h) =   1.8800  Leakage Transport

Noble gases (atoms)      1.2073E+22
Elemental I (atoms)      1.5092E+18
Organic I (atoms)        7.5412E+17
Aerosols (kg)            1.5955E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   1.8800    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  6.3744E+21
Elemental I (atoms)    0.0000E+00  7.9687E+17
Organic I (atoms)      0.0000E+00  3.9817E+17
Aerosols (kg)          0.0000E+00  8.4241E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   1.8800    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  6.3744E+21
Elemental I (atoms)    0.0000E+00  7.9687E+17
Organic I (atoms)      0.0000E+00  3.9817E+17
Aerosols (kg)          0.0000E+00  8.4241E-04

RB Compartment Nuclide Inventory:

Time (h) =   1.8800       Ci           kg          Atoms       Decay
Co-58                  1.4878E-02  4.6791E-10  4.8583E+15  1.4976E+12
Co-60                  1.7821E-02  1.5765E-08  1.5823E+17  1.7934E+12
Kr-85                  4.9534E+02  1.2625E-03  8.9450E+21  3.7173E+16
Kr-85m                 6.1038E+03  7.4169E-07  5.2548E+18  4.8760E+17
Kr-87                  5.8806E+03  2.0761E-07  1.4370E+18  5.5596E+17
Kr-88                  1.4046E+04  1.1201E-06  7.6655E+18  1.1645E+18
Rb-86                  9.6028E-01  1.1802E-08  8.2641E+16  1.7897E+14
Sr-89                  2.5215E+01  8.6791E-07  5.8726E+18  2.5382E+15
Sr-90                  3.3188E+00  2.4330E-05  1.6280E+20  3.3399E+14
Sr-91                  2.7372E+01  7.5509E-09  4.9970E+16  2.8511E+15
Sr-92                  2.0230E+01  1.6094E-09  1.0535E+16  2.3027E+15
Y-90                   5.8732E-02  1.0795E-10  7.2233E+14  4.8909E+12
Y-91                   3.2402E-01  1.3213E-08  8.7437E+16  3.2450E+13
Y-92                   3.1149E+00  3.2372E-10  2.1190E+15  2.1211E+14
Y-93                   3.1773E-01  9.5234E-11  6.1668E+14  3.3027E+13
Zr-95                  3.9076E-01  1.8189E-08  1.1530E+17  3.9332E+13
Zr-97                  3.5053E-01  1.8336E-10  1.1384E+15  3.5962E+13
Nb-95                  3.9186E-01  1.0021E-08  6.3526E+16  3.9434E+13
Mo-99                  4.9076E+00  1.0232E-08  6.2244E+16  4.9632E+14
Tc-99m                 4.4119E+00  8.3905E-10  5.1039E+15  4.4213E+14
Ru-103                 4.3373E+00  1.3439E-07  7.8574E+17  4.3663E+14
Ru-105                 2.3091E+00  3.4352E-10  1.9702E+15  2.5032E+14
Ru-106                 1.8890E+00  5.6461E-07  3.2077E+18  1.9010E+14
Rh-105                 2.8941E+00  3.4288E-09  1.9665E+16  2.9146E+14
Sb-127                 4.9162E+00  1.8409E-08  8.7293E+16  4.9648E+14
Sb-129                 1.1394E+01  2.0262E-09  9.4591E+15  1.2378E+15
Te-127                 4.9236E+00  1.8656E-09  8.8466E+15  4.9405E+14
Te-127m                8.4531E-01  8.9616E-08  4.2494E+17  8.5066E+13
Te-129                 1.2787E+01  6.1059E-10  2.8504E+15  1.3069E+15
Te-129m                2.7854E+00  9.2460E-08  4.3163E+17  2.8030E+14
Te-131m                1.0033E+01  1.2582E-08  5.7841E+16  1.0207E+15
Te-132                 7.3938E+01  2.4354E-07  1.1111E+18  7.4717E+15
I-131                  4.5775E+02  3.6923E-06  1.6974E+19  7.9628E+16
I-132                  5.0062E+02  4.8499E-08  2.2127E+17  9.5611E+16
I-133                  9.0046E+02  7.9489E-07  3.5992E+18  1.6020E+17
I-134                  2.4720E+02  9.2665E-09  4.1645E+16  8.2908E+16
I-135                  7.4388E+02  2.1182E-07  9.4489E+17  1.3973E+17
Xe-133                 5.2725E+04  2.8168E-04  1.2754E+21  3.9629E+18
Xe-135                 2.1399E+04  8.3794E-06  3.7379E+19  1.6292E+18
Cs-134                 1.0535E+02  8.1423E-05  3.6592E+20  1.9611E+16
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Cs-136	3.1388E+01	4.2827E-07	1.8964E+18	5.8530E+15
Cs-137	8.4779E+01	9.7468E-04	4.2844E+21	1.5782E+16
Ba-139	1.5588E+01	9.5298E-10	4.1288E+15	2.0119E+15
Ba-140	3.8788E+01	5.2982E-07	2.2790E+18	3.9075E+15
La-140	8.6149E-01	1.5499E-09	6.6670E+15	6.7823E+13
La-141	2.6283E-01	4.6474E-11	1.9849E+14	2.8773E+13
La-142	1.5390E-01	1.0751E-11	4.5594E+13	1.9322E+13
Ce-141	9.1880E-01	3.2246E-08	1.3772E+17	9.2480E+13
Ce-143	8.5375E-01	1.2856E-09	5.4141E+15	8.6768E+13
Ce-144	7.3802E-01	2.3139E-07	9.6769E+17	7.4275E+13
Pr-143	3.4590E-01	5.1367E-09	2.1632E+16	3.4775E+13
Nd-147	1.4342E-01	1.7728E-09	7.2626E+15	1.4450E+13
Np-239	1.0221E+01	4.4056E-08	1.1101E+17	1.0345E+15
Pu-238	2.9800E-03	1.7407E-07	4.4044E+17	2.9989E+11
Pu-239	2.6105E-04	4.1999E-06	1.0583E+19	2.6269E+10
Pu-240	4.8886E-04	2.1454E-06	5.3833E+18	4.9197E+10
Pu-241	1.0537E-01	1.0229E-06	2.5559E+18	1.0604E+13
Am-241	7.0606E-05	2.0572E-08	5.1405E+16	7.1047E+09
Cm-242	1.7913E-02	5.4046E-09	1.3449E+16	1.8028E+12
Cm-244	1.1842E-03	1.4637E-08	3.6125E+16	1.1917E+11

RB Transport Group Inventory:

Time (h) = 1.8800	Atmosphere	Sump	
Noble gases (atoms)	1.0272E+22	0.0000E+00	
Elemental I (atoms)	1.0278E+18	0.0000E+00	
Organic I (atoms)	6.1972E+17	0.0000E+00	
Aerosols (kg)	1.0958E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.8846E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.3322E-08
Total I (Ci)			2.8499E+03

DW to RB Transport Group Inventory:

Time (h) = 1.8800	Leakage Transport
Noble gases (atoms)	1.2073E+22
Elemental I (atoms)	1.5092E+18
Organic I (atoms)	7.5412E+17
Aerosols (kg)	1.5955E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7932E+21
Elemental I (atoms)	4.2126E+17	3.3777E+16
Organic I (atoms)	1.2264E+17	4.4348E+15
Aerosols (kg)	4.6173E-04	3.7849E-05

Environment Integral Nuclide Release:

Time (h) = 1.8800	Ci	kg	Atoms	Bq
Co-58	1.0802E-04	3.3972E-12	3.5273E+13	3.9969E+06
Co-60	1.2936E-04	1.1444E-10	1.1486E+15	4.7864E+06
Kr-85	8.6435E+01	2.2031E-04	1.5609E+21	3.1981E+12
Kr-85m	1.1258E+03	1.3680E-07	9.6921E+17	4.1655E+13
Kr-87	1.2620E+03	4.4554E-08	3.0840E+17	4.6694E+13
Kr-88	2.6780E+03	2.1357E-07	1.4615E+18	9.9086E+13
Rb-86	3.4106E-02	4.1916E-10	2.9352E+15	1.2619E+09
Sr-89	1.8308E-01	6.3017E-09	4.2640E+16	6.7739E+09
Sr-90	2.4092E-02	1.7662E-07	1.1818E+18	8.9139E+08
Sr-91	2.0499E-01	5.6549E-11	3.7423E+14	7.5847E+09
Sr-92	1.6425E-01	1.3067E-11	8.5535E+13	6.0771E+09
Y-90	3.8098E-04	7.0025E-13	4.6855E+12	1.4096E+07
Y-91	2.3453E-03	9.5634E-11	6.3288E+14	8.6776E+07
Y-92	1.8639E-02	1.9370E-12	1.2679E+13	6.8963E+08
Y-93	2.3751E-03	7.1188E-13	4.6097E+12	8.7877E+07
Zr-95	2.8371E-03	1.3206E-10	8.3716E+14	1.0497E+08
Zr-97	2.5893E-03	1.3545E-12	8.4092E+12	9.5805E+07
Nb-95	2.8446E-03	7.2746E-11	4.6114E+14	1.0525E+08
Mo-99	3.5784E-02	7.4610E-11	4.5385E+14	1.3240E+09
Tc-99m	3.2047E-02	6.0946E-12	3.7073E+13	1.1857E+09
Ru-103	3.1495E-02	9.7585E-10	5.7056E+15	1.1653E+09

Ru-105	1.7932E-02	2.6676E-12	1.5300E+13	6.6348E+08
Ru-106	1.3713E-02	4.0987E-09	2.3286E+16	5.0737E+08
Rh-105	2.1036E-02	2.4923E-11	1.4294E+14	7.7833E+08
Sb-127	3.5801E-02	1.3406E-10	6.3569E+14	1.3246E+09
Sb-129	8.8654E-02	1.5765E-11	7.3597E+13	3.2802E+09
Te-127	3.5750E-02	1.3546E-11	6.4234E+13	1.3227E+09
Te-127m	6.1361E-03	6.5053E-10	3.0847E+15	2.2704E+08
Te-129	9.6049E-02	4.5864E-12	2.1411E+13	3.5538E+09
Te-129m	2.0220E-02	6.7119E-10	3.1333E+15	7.4813E+08
Te-131m	7.3549E-02	9.2235E-11	4.2401E+14	2.7213E+09
Te-132	5.3874E-01	1.7745E-09	8.0959E+15	1.9933E+10
I-131	1.4440E+01	1.1648E-07	5.3546E+17	5.3430E+11
I-132	1.8841E+01	1.8253E-09	8.3274E+15	6.9711E+11
I-133	2.9497E+01	2.6039E-08	1.1790E+17	1.0914E+12
I-134	2.2611E+01	8.4758E-10	3.8091E+15	8.3659E+11
I-135	2.6687E+01	7.5992E-09	3.3899E+16	9.8743E+11
Xe-133	9.2116E+03	4.9212E-05	2.2283E+20	3.4083E+14
Xe-135	3.7685E+03	1.4757E-06	6.5828E+18	1.3943E+14
Cs-134	3.7344E+00	2.8863E-06	1.2971E+19	1.3817E+11
Cs-136	1.1158E+00	1.5224E-08	6.7411E+16	4.1283E+10
Cs-137	3.0051E+00	3.4549E-05	1.5187E+20	1.1119E+11
Ba-139	1.4202E-01	8.6828E-12	3.7618E+13	5.2549E+09
Ba-140	2.8183E-01	3.8497E-09	1.6560E+16	1.0428E+10
La-140	5.4154E-03	9.7429E-12	4.1910E+13	2.0037E+08
La-141	2.0594E-03	3.6415E-13	1.5553E+12	7.6197E+07
La-142	1.3670E-03	9.5490E-14	4.0497E+11	5.0577E+07
Ce-141	6.6707E-03	2.3411E-10	9.9990E+14	2.4682E+08
Ce-143	6.2530E-03	9.4159E-12	3.9653E+13	2.3136E+08
Ce-144	5.3576E-03	1.6798E-09	7.0249E+15	1.9823E+08
Pr-143	2.5095E-03	3.7267E-11	1.5694E+14	9.2853E+07
Nd-147	1.0422E-03	1.2883E-11	5.2779E+13	3.8563E+07
Np-239	7.4579E-02	3.2147E-10	8.1002E+14	2.7594E+09
Pu-238	2.1632E-05	1.2636E-09	3.1972E+15	8.0038E+05
Pu-239	1.8949E-06	3.0486E-08	7.6816E+16	7.0111E+04
Pu-240	3.5487E-06	1.5574E-08	3.9078E+16	1.3130E+05
Pu-241	7.6488E-04	7.4251E-09	1.8554E+16	2.8300E+07
Am-241	5.1250E-07	1.4932E-10	3.7313E+14	1.8962E+04
Cm-242	1.3004E-04	3.9236E-11	9.7638E+13	4.8114E+06
Cm-244	8.5960E-06	1.0625E-10	2.6224E+14	3.1805E+05

Environment Transport Group Inventory:

Time (h) = 1.8800	Total Release	Release Rate/s	
Noble gases (atoms)	1.7930E+21	2.6492E+17	
Elemental I (atoms)	3.3757E+16	4.9877E+12	
Organic I (atoms)	4.4289E+15	6.5439E+11	
Aerosols (kg)	3.7849E-05	5.5923E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.0258E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.5610E+01
Total I (Ci)			1.1208E+02

RB to Environment Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7932E+21
Elemental I (atoms)	4.2126E+17	3.3777E+16
Organic I (atoms)	1.2264E+17	4.4348E+15
Aerosols (kg)	4.6173E-04	3.7849E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2749E+16
Elemental I (atoms)	0.0000E+00	7.2799E+13
Organic I (atoms)	0.0000E+00	2.2521E+12
Aerosols (kg)	0.0000E+00	8.2695E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.0067E+14
Elemental I (atoms)	4.5592E+09	1.4101E+08
Organic I (atoms)	1.4301E+09	4.4230E+07
Aerosols (kg)	4.9791E-12	1.5399E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 1.8800	Pathway Filtered	Transported
Noble gases (atoms)	9.5384E+15	0.0000E+00
Elemental I (atoms)	5.3808E+13	0.0000E+00
Organic I (atoms)	1.6643E+12	0.0000E+00
Aerosols (kg)	6.1820E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.8800	Ci	kg	Atoms	Decay
Co-58	1.4488E-11	4.5564E-19	4.7309E+06	1.0588E+03
Co-60	1.7353E-11	1.5352E-17	1.5408E+08	1.2680E+03
Kr-85	1.8827E-04	4.7987E-10	3.3998E+15	6.8085E+10
Kr-85m	2.3199E-03	2.8190E-13	1.9973E+12	9.7872E+11
Kr-87	2.2351E-03	7.8907E-14	5.4620E+11	1.4220E+12
Kr-88	5.3385E-03	4.2575E-13	2.9135E+12	2.4674E+12
Rb-86	1.8899E-05	2.3226E-13	1.6264E+12	8.2459E+09
Sr-89	2.4554E-08	8.4515E-16	5.7187E+09	1.7944E+06
Sr-90	3.2318E-09	2.3692E-14	1.5853E+11	2.3614E+05
Sr-91	2.6654E-08	7.3530E-18	4.8660E+07	2.0009E+06
Sr-92	1.9699E-08	1.5673E-18	1.0259E+07	1.5852E+06
Y-90	6.4353E-11	1.1828E-19	7.9146E+05	3.9646E+03
Y-91	3.1673E-10	1.2915E-17	8.5468E+07	2.3027E+04
Y-92	3.8683E-09	4.0201E-19	2.6315E+06	2.1085E+05
Y-93	3.0940E-10	9.2737E-20	6.0051E+05	2.3189E+04
Zr-95	3.8052E-10	1.7713E-17	1.1228E+08	2.7808E+04
Zr-97	3.4134E-10	1.7856E-19	1.1085E+06	2.5321E+04
Nb-95	3.8159E-10	9.7586E-18	6.1860E+07	2.7881E+04
Mo-99	4.7790E-09	9.9642E-18	6.0612E+07	3.5054E+05
Tc-99m	4.2963E-09	8.1705E-19	4.9701E+06	3.1245E+05
Ru-103	4.2236E-09	1.3087E-16	7.6514E+08	3.0869E+05
Ru-105	2.2486E-09	3.3451E-19	1.9186E+06	1.7417E+05
Ru-106	1.8394E-09	5.4981E-16	3.1236E+09	1.3441E+05
Rh-105	2.8182E-09	3.3389E-18	1.9150E+07	2.0601E+05
Sb-127	4.7873E-09	1.7927E-17	8.5005E+07	3.5076E+05
Sb-129	1.1096E-08	1.9731E-18	9.2111E+06	8.6083E+05
Te-127	4.7946E-09	1.8167E-18	8.6147E+06	3.4921E+05
Te-127m	8.2315E-10	8.7267E-17	4.1380E+08	6.0144E+04
Te-129	1.2452E-08	5.9458E-19	2.7757E+06	9.1558E+05
Te-129m	2.7124E-09	9.0036E-17	4.2032E+08	1.9818E+05
Te-131m	9.7700E-09	1.2252E-17	5.6324E+07	7.1998E+05
Te-132	7.1999E-08	2.3716E-16	1.0820E+09	5.2780E+06
I-131	7.7306E-03	6.2356E-11	2.8665E+14	3.3799E+12
I-132	6.6097E-03	6.4034E-13	2.9214E+12	3.9276E+12
I-133	1.5213E-02	1.3430E-11	6.0809E+13	6.8532E+12
I-134	4.1765E-03	1.5656E-13	7.0360E+11	4.2699E+12
I-135	1.2568E-02	3.5787E-12	1.5964E+13	6.0881E+12
Xe-133	2.0117E-02	1.0747E-10	4.8663E+14	7.2839E+12
Xe-135	8.9085E-03	3.4884E-12	1.5561E+13	3.1385E+12
Cs-134	2.0733E-03	1.6024E-09	7.2016E+15	9.0324E+11
Cs-136	6.1774E-04	8.4286E-12	3.7322E+13	2.6971E+11
Cs-137	1.6685E-03	1.9182E-08	8.4320E+16	7.2687E+11
Ba-139	1.5179E-08	9.2800E-19	4.0205E+06	1.3473E+06
Ba-140	3.7771E-08	5.1593E-16	2.2193E+09	2.7621E+06
La-140	9.7156E-10	1.7479E-18	7.5188E+06	5.7346E+04
La-141	2.5594E-10	4.5255E-20	1.9329E+05	1.9977E+04
La-142	1.4987E-10	1.0469E-20	4.4399E+04	1.3019E+04
Ce-141	8.9464E-10	3.1398E-17	1.3410E+08	6.5379E+04
Ce-143	8.3137E-10	1.2519E-18	5.2721E+06	6.1218E+04
Ce-144	7.1868E-10	2.2533E-16	9.4232E+08	5.2514E+04
Pr-143	3.3706E-10	5.0054E-18	2.1079E+07	2.4603E+04
Nd-147	1.3966E-10	1.7263E-18	7.0722E+06	1.0214E+04
Np-239	9.9527E-09	4.2901E-17	1.0810E+08	7.3051E+05

Pu-238	2.9019E-12	1.6950E-16	4.2890E+08	2.1203E+02
Pu-239	2.5421E-13	4.0898E-15	1.0305E+10	1.8573E+01
Pu-240	4.7605E-13	2.0892E-15	5.2422E+09	3.4784E+01
Pu-241	1.0261E-10	9.9605E-16	2.4889E+09	7.4971E+03
Am-241	6.8757E-14	2.0033E-17	5.0059E+07	5.0235E+00
Cm-242	1.7443E-11	5.2630E-18	1.3097E+07	1.2746E+03
Cm-244	1.1531E-12	1.4253E-17	3.5178E+07	8.4256E+01

CR Transport Group Inventory:

Time (h) = 1.8800	Atmosphere	Sump	
Noble gases (atoms)	3.9075E+15	0.0000E+00	
Elemental I (atoms)	1.7802E+13	0.0000E+00	
Organic I (atoms)	5.5105E+11	0.0000E+00	
Aerosols (kg)	2.0870E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7309E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.5986E-12
Total I (Ci)			4.6298E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2749E+16
Elemental I (atoms)	0.0000E+00	7.2799E+13
Organic I (atoms)	0.0000E+00	2.2521E+12
Aerosols (kg)	0.0000E+00	8.2695E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.0067E+14
Elemental I (atoms)	4.5592E+09	1.4101E+08
Organic I (atoms)	1.4301E+09	4.4230E+07
Aerosols (kg)	4.9791E-12	1.5399E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 1.8800	Filtered	Transported
Noble gases (atoms)	9.5384E+15	0.0000E+00
Elemental I (atoms)	5.3808E+13	0.0000E+00
Organic I (atoms)	1.6643E+12	0.0000E+00
Aerosols (kg)	6.1820E-08	0.0000E+00

EAB Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.7205E-02	1.5862E-02	1.8088E-02
Accumulated dose (rem)	9.6828E-02	4.2452E-01	1.1680E-01

LPZ Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.4841E+00	1.3683E+00	1.5603E+00
Accumulated dose (rem)	8.3524E+00	3.6619E+01	1.0075E+01

CR Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.9084E-05	5.8915E-01	2.6125E-02
Accumulated dose (rem)	3.4245E-03	1.7875E+01	7.9185E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.1954E+01	6.9041E-07	7.1686E+18	4.3041E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	5.1539E+15
Kr-85	1.3592E+06	3.4645E+00	2.4546E+25	1.5077E+20
Kr-85m	1.6441E+07	1.9978E-03	1.4154E+22	1.9872E+21
Kr-87	1.5115E+07	5.3361E-04	3.6937E+21	2.3084E+21
Kr-88	3.7430E+07	2.9850E-03	2.0428E+22	4.7622E+21

Rb-86	7.5639E+02	9.2960E-06	6.5095E+19	3.1286E+17
Sr-89	3.7204E+04	1.2806E-03	8.6651E+21	7.2949E+18
Sr-90	4.8972E+03	3.5902E-02	2.4023E+23	9.5983E+17
Sr-91	4.0038E+04	1.1045E-05	7.3093E+19	8.2842E+18
Sr-92	2.8949E+04	2.3031E-06	1.5076E+19	6.8898E+18
Y-90	5.5979E+01	1.0289E-07	6.8847E+17	1.0034E+16
Y-91	4.7305E+02	1.9289E-05	1.2765E+20	9.2589E+16
Y-92	1.0393E+03	1.0801E-07	7.0704E+17	1.0944E+17
Y-93	4.6500E+02	1.3938E-07	9.0251E+17	9.5900E+16
Zr-95	5.7658E+02	2.6839E-05	1.7013E+20	1.1304E+17
Zr-97	5.1470E+02	2.6924E-07	1.6716E+18	1.0399E+17
Nb-95	5.7823E+02	1.4787E-05	9.3739E+19	1.1333E+17
Mo-99	7.2326E+03	1.5080E-05	9.1732E+19	1.4286E+18
Tc-99m	6.5087E+03	1.2378E-06	7.5296E+18	1.2721E+18
Ru-103	6.3996E+03	1.9829E-04	1.1593E+21	1.2550E+18
Ru-105	3.3441E+03	4.9749E-07	2.8533E+18	7.3686E+17
Ru-106	2.7873E+03	8.3314E-04	4.7333E+21	5.4633E+17
Rh-105	4.2684E+03	5.0571E-06	2.9004E+19	8.3795E+17
Sb-127	7.2478E+03	2.7140E-05	1.2869E+20	1.4284E+18
Sb-129	1.6493E+04	2.9329E-06	1.3692E+19	3.6462E+18
Te-127	7.2647E+03	2.7527E-06	1.3053E+19	1.4208E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.4447E+17
Te-129	1.8663E+04	8.9118E-07	4.1603E+18	3.8127E+18
Te-129m	4.1101E+03	1.3643E-04	6.3691E+20	8.0555E+17
Te-131m	1.4764E+04	1.8515E-05	8.5114E+19	2.9434E+18
Te-132	1.0899E+05	3.5899E-04	1.6378E+21	2.1501E+19
I-131	4.1769E+05	3.3692E-03	1.5488E+22	1.4725E+20
I-132	5.9120E+05	5.7275E-05	2.6130E+20	2.0958E+20
I-133	8.1825E+05	7.2232E-04	3.2706E+21	2.9914E+20
I-134	2.0512E+05	7.6890E-06	3.4555E+19	2.0480E+20
I-135	6.7019E+05	1.9084E-04	8.5129E+20	2.6730E+20
Xe-133	1.4478E+08	7.7349E-01	3.5023E+24	1.6087E+22
Xe-135	6.0157E+07	2.3557E-02	1.0508E+23	6.7404E+21
Cs-134	8.2994E+04	6.4146E-02	2.8828E+23	3.4263E+19
Cs-136	2.4722E+04	3.3731E-04	1.4936E+21	1.0234E+19
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.7573E+19
Ba-139	2.1655E+04	1.3239E-06	5.7356E+18	6.2871E+18
Ba-140	5.7220E+04	7.8160E-04	3.3621E+21	1.1233E+19
La-140	7.0228E+02	1.2635E-06	5.4349E+18	1.2026E+17
La-141	3.7971E+02	6.7141E-08	2.8676E+17	8.4975E+16
La-142	2.1517E+02	1.5031E-08	6.3745E+16	5.9795E+16
Ce-141	1.3561E+03	4.7593E-05	2.0327E+20	2.6583E+17
Ce-143	1.2566E+03	1.8923E-06	7.9689E+18	2.5014E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	2.1346E+17
Pr-143	5.0945E+02	7.5655E-06	3.1861E+19	9.9814E+16
Nd-147	2.1156E+02	2.6151E-06	1.0713E+19	4.1544E+16
Np-239	1.5059E+04	6.4914E-05	1.6356E+20	2.9783E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	8.6183E+14
Pu-239	3.8521E-01	6.1975E-03	1.5616E+22	7.5492E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.4138E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	3.0473E+16
Am-241	1.0418E-01	3.0353E-05	7.5847E+19	2.0416E+13
Cm-242	2.6431E+01	7.9749E-06	1.9846E+19	5.1810E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.4247E+14

DW Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8191E+25	0.0000E+00	
Elemental I (atoms)	8.9461E+20	4.8074E+22	
Organic I (atoms)	1.4880E+21	0.0000E+00	
Aerosols (kg)	8.8765E-01	4.8455E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3585E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6880E-04
Total I (Ci)			2.7024E+06

DW to RB Transport Group Inventory:

Time (h) = 2.0000	Leakage Transport
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5764E+18
Organic I (atoms)	8.6218E+17
Aerosols (kg)	1.6620E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3236E+17
Organic I (atoms)	0.0000E+00	4.5523E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3236E+17
Organic I (atoms)	0.0000E+00	4.5523E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.5907E-02	5.0025E-10	5.1941E+15	1.7496E+12
Co-60	1.9053E-02	1.6856E-08	1.6918E+17	2.0952E+12
Kr-85	5.7203E+02	1.4580E-03	1.0330E+22	4.6145E+16
Kr-85m	6.9191E+03	8.4076E-07	5.9567E+18	5.9712E+17
Kr-87	6.3610E+03	2.2457E-07	1.5545E+18	6.5901E+17
Kr-88	1.5752E+04	1.2562E-06	8.5968E+18	1.4152E+18
Rb-86	9.7796E-01	1.2019E-08	8.4164E+16	1.9457E+14
Sr-89	2.6957E+01	9.2788E-07	6.2784E+18	2.9652E+15
Sr-90	3.5484E+00	2.6013E-05	1.7406E+20	3.9020E+14
Sr-91	2.9010E+01	8.0029E-09	5.2961E+16	3.3126E+15
Sr-92	2.0975E+01	1.6688E-09	1.0923E+16	2.6401E+15
Y-90	6.4720E-02	1.1896E-10	7.9598E+14	5.8594E+12
Y-91	3.4671E-01	1.4138E-08	9.3560E+16	3.7934E+13
Y-92	3.4598E+00	3.5956E-10	2.3536E+15	2.6130E+14
Y-93	3.3692E-01	1.0099E-10	6.5393E+14	3.8386E+13
Zr-95	4.1777E-01	1.9446E-08	1.2327E+17	4.5950E+13
Zr-97	3.7294E-01	1.9508E-10	1.2112E+15	4.1885E+13
Nb-95	4.1897E-01	1.0714E-08	6.7920E+16	4.6070E+13
Mo-99	5.2405E+00	1.0926E-08	6.6465E+16	5.7938E+14
Tc-99m	4.7160E+00	8.9688E-10	5.4557E+15	5.1648E+14
Ru-103	4.6369E+00	1.4367E-07	8.4002E+17	5.1009E+14
Ru-105	2.4230E+00	3.6046E-10	2.0674E+15	2.8906E+14
Ru-106	2.0196E+00	6.0366E-07	3.4296E+18	2.2209E+14
Rh-105	3.0928E+00	3.6642E-09	2.1015E+16	3.4043E+14
Sb-127	5.2515E+00	1.9665E-08	9.3248E+16	5.7971E+14
Sb-129	1.1950E+01	2.1251E-09	9.9205E+15	1.4289E+15
Te-127	5.2637E+00	1.9945E-09	9.4577E+15	5.7717E+14
Te-127m	9.0378E-01	9.5815E-08	4.5434E+17	9.9383E+13
Te-129	1.3523E+01	6.4572E-10	3.0144E+15	1.5176E+15
Te-129m	2.9780E+00	9.8855E-08	4.6149E+17	3.2748E+14
Te-131m	1.0697E+01	1.3415E-08	6.1670E+16	1.1904E+15
Te-132	7.8968E+01	2.6011E-07	1.1867E+18	8.7232E+15
I-131	4.7020E+02	3.7927E-06	1.7435E+19	8.7118E+16
I-132	5.0947E+02	4.9357E-08	2.2518E+17	1.0381E+17
I-133	9.2161E+02	8.1357E-07	3.6838E+18	1.7490E+17
I-134	2.3103E+02	8.6603E-09	3.8921E+16	8.6766E+16
I-135	7.5485E+02	2.1494E-07	9.5883E+17	1.5183E+17
Xe-133	6.0860E+04	3.2514E-04	1.4722E+21	4.9178E+18
Xe-135	2.4617E+04	9.6396E-06	4.3001E+19	2.0167E+18
Cs-134	1.0731E+02	8.2937E-05	3.7273E+20	2.1322E+16
Cs-136	3.1964E+01	4.3613E-07	1.9312E+18	6.3627E+15
Cs-137	8.6357E+01	9.9282E-04	4.3641E+21	1.7159E+16
Ba-139	1.5690E+01	9.5923E-10	4.1558E+15	2.2681E+15
Ba-140	4.1459E+01	5.6632E-07	2.4360E+18	4.5644E+15
La-140	9.5656E-01	1.7210E-09	7.4027E+15	8.1926E+13
La-141	2.7512E-01	4.8648E-11	2.0778E+14	3.3177E+13
La-142	1.5590E-01	1.0891E-11	4.6187E+13	2.1859E+13
Ce-141	9.8231E-01	3.4475E-08	1.4724E+17	1.0804E+14
Ce-143	9.1051E-01	1.3711E-09	5.7740E+15	1.0121E+14
Ce-144	7.8907E-01	2.4740E-07	1.0346E+18	8.6774E+13
Pr-143	3.6988E-01	5.4929E-09	2.3132E+16	4.0632E+13
Nd-147	1.5329E-01	1.8948E-09	7.7625E+15	1.6879E+13

Np-239	1.0912E+01	4.7034E-08	1.1851E+17	1.2075E+15
Pu-238	3.1861E-03	1.8611E-07	4.7091E+17	3.5036E+11
Pu-239	2.7911E-04	4.4905E-06	1.1315E+19	3.0690E+10
Pu-240	5.2268E-04	2.2938E-06	5.7557E+18	5.7476E+10
Pu-241	1.1266E-01	1.0936E-06	2.7327E+18	1.2388E+13
Am-241	7.5492E-05	2.1995E-08	5.4962E+16	8.3005E+09
Cm-242	1.9151E-02	5.7784E-09	1.4379E+16	2.1062E+12
Cm-244	1.2661E-03	1.5649E-08	3.8624E+16	1.3922E+11

RB Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1861E+22	0.0000E+00	
Elemental I (atoms)	1.0512E+18	0.0000E+00	
Organic I (atoms)	6.9992E+17	0.0000E+00	
Aerosols (kg)	1.1180E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.9333E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.3890E-08
Total I (Ci)			2.8872E+03

DW to RB Transport Group Inventory:

Time (h) = 2.0000	Leakage Transport
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5764E+18
Organic I (atoms)	8.6218E+17
Aerosols (kg)	1.6620E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.2367E+21
Elemental I (atoms)	4.6173E+17	3.5028E+16
Organic I (atoms)	1.4832E+17	5.2288E+15
Aerosols (kg)	5.0479E-04	3.9180E-05

Environment Integral Nuclide Release:

Time (h) = 2.0000	Ci	kg	Atoms	Bq
Co-58	1.2654E-04	3.9797E-12	4.1321E+13	4.6822E+06
Co-60	1.5155E-04	1.3407E-10	1.3456E+15	5.6073E+06
Kr-85	1.0782E+02	2.7482E-04	1.9470E+21	3.9894E+12
Kr-85m	1.3851E+03	1.6831E-07	1.1925E+18	5.1249E+13
Kr-87	1.5019E+03	5.3023E-08	3.6703E+17	5.5571E+13
Kr-88	3.2692E+03	2.6072E-07	1.7842E+18	1.2096E+14
Rb-86	3.5272E-02	4.3349E-10	3.0355E+15	1.3051E+09
Sr-89	2.1447E-01	7.3822E-09	4.9951E+16	7.9353E+09
Sr-90	2.8223E-02	2.0690E-07	1.3845E+18	1.0443E+09
Sr-91	2.3881E-01	6.5879E-11	4.3597E+14	8.8360E+09
Sr-92	1.8877E-01	1.5018E-11	9.8307E+13	6.9845E+09
Y-90	4.5712E-04	8.4019E-13	5.6219E+12	1.6913E+07
Y-91	2.7491E-03	1.1210E-10	7.4185E+14	1.0172E+08
Y-92	2.2768E-02	2.3662E-12	1.5489E+13	8.4243E+08
Y-93	2.7678E-03	8.2960E-13	5.3720E+12	1.0241E+08
Zr-95	3.3235E-03	1.5471E-10	9.8070E+14	1.2297E+08
Zr-97	3.0239E-03	1.5818E-12	9.8204E+12	1.1188E+08
Nb-95	3.3324E-03	8.5221E-11	5.4023E+14	1.2330E+08
Mo-99	4.1887E-02	8.7335E-11	5.3125E+14	1.5498E+09
Tc-99m	3.7538E-02	7.1389E-12	4.3426E+13	1.3889E+09
Ru-103	3.6894E-02	1.1431E-09	6.6837E+15	1.3651E+09
Ru-105	2.0760E-02	3.0884E-12	1.7713E+13	7.6814E+08
Ru-106	1.6064E-02	4.8016E-09	2.7279E+16	5.9437E+08
Rh-105	2.4637E-02	2.9189E-11	1.6741E+14	9.1158E+08
Sb-127	4.1916E-02	1.5696E-10	7.4428E+14	1.5509E+09
Sb-129	1.0260E-01	1.8246E-11	8.5178E+13	3.7964E+09
Te-127	4.1879E-02	1.5869E-11	7.5246E+13	1.5495E+09
Te-127m	7.1885E-03	7.6209E-10	3.6137E+15	2.6597E+08
Te-129	1.1182E-01	5.3393E-12	2.4926E+13	4.1373E+09
Te-129m	2.3687E-02	7.8629E-10	3.6707E+15	8.7643E+08
Te-131m	8.6009E-02	1.0786E-10	4.9584E+14	3.1823E+09
Te-132	6.3070E-01	2.0775E-09	9.4778E+15	2.3336E+10
I-131	1.4999E+01	1.2098E-07	5.5616E+17	5.5495E+11

I-132	1.9442E+01	1.8835E-09	8.5930E+15	7.1935E+11
I-133	3.0592E+01	2.7005E-08	1.2228E+17	1.1319E+12
I-134	2.2889E+01	8.5800E-10	3.8559E+15	8.4687E+11
I-135	2.7585E+01	7.8548E-09	3.5039E+16	1.0206E+12
Xe-133	1.1487E+04	6.1368E-05	2.7787E+20	4.2502E+14
Xe-135	4.6875E+03	1.8355E-06	8.1881E+18	1.7344E+14
Cs-134	3.8623E+00	2.9852E-06	1.3416E+19	1.4290E+11
Cs-136	1.1539E+00	1.5744E-08	6.9713E+16	4.2693E+10
Cs-137	3.1081E+00	3.5733E-05	1.5707E+20	1.1500E+11
Ba-139	1.6045E-01	9.8090E-12	4.2497E+13	5.9365E+09
Ba-140	3.3011E-01	4.5092E-09	1.9396E+16	1.2214E+10
La-140	6.5437E-03	1.1773E-11	5.0641E+13	2.4212E+08
La-141	2.3806E-03	4.2095E-13	1.7979E+12	8.8084E+07
La-142	1.5498E-03	1.0827E-13	4.5915E+11	5.7344E+07
Ce-141	7.8145E-03	2.7426E-10	1.1714E+15	2.8914E+08
Ce-143	7.3135E-03	1.1013E-11	4.6379E+13	2.7060E+08
Ce-144	6.2764E-03	1.9678E-09	8.2296E+15	2.3223E+08
Pr-143	2.9402E-03	4.3663E-11	1.8388E+14	1.0879E+08
Nd-147	1.2207E-03	1.5090E-11	6.1817E+13	4.5167E+07
Np-239	8.7287E-02	3.7625E-10	9.4805E+14	3.2296E+09
Pu-238	2.5342E-05	1.4803E-09	3.7455E+15	9.3764E+05
Pu-239	2.2199E-06	3.5714E-08	8.9990E+16	8.2136E+04
Pu-240	4.1573E-06	1.8244E-08	4.5780E+16	1.5382E+05
Pu-241	8.9605E-04	8.6984E-09	2.1736E+16	3.3154E+07
Am-241	6.0040E-07	1.7493E-10	4.3712E+14	2.2215E+04
Cm-242	1.5234E-04	4.5964E-11	1.1438E+14	5.6365E+06
Cm-244	1.0070E-05	1.2447E-10	3.0721E+14	3.7260E+05

Environment Transport Group Inventory:

Time (h) = 2.0000	Total Release	Release Rate/s	
Noble gases (atoms)	2.2364E+21	3.1062E+17	
Elemental I (atoms)	3.5006E+16	4.8620E+12	
Organic I (atoms)	5.2217E+15	7.2524E+11	
Aerosols (kg)	3.9180E-05	5.4417E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.1028E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.6562E+01
Total I (Ci)			1.1551E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.2367E+21
Elemental I (atoms)	4.6173E+17	3.5028E+16
Organic I (atoms)	1.4832E+17	5.2288E+15
Aerosols (kg)	5.0479E-04	3.9180E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2826E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2523E+12
Aerosols (kg)	0.0000E+00	8.2695E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	8.7510E+14
Elemental I (atoms)	5.0367E+09	1.5577E+08
Organic I (atoms)	1.7330E+09	5.3599E+07
Aerosols (kg)	5.4872E-12	1.6971E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	9.8953E+15	0.0000E+00

Elemental I (atoms)	5.5383E+13	0.0000E+00
Organic I (atoms)	1.7131E+12	0.0000E+00
Aerosols (kg)	6.3667E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.6508E-11	5.1916E-19	5.3904E+06	1.3182E+03
Co-60	1.9773E-11	1.7493E-17	1.7557E+08	1.5787E+03
Kr-85	1.8322E-04	4.6701E-10	3.3087E+15	7.1025E+10
Kr-85m	2.2162E-03	2.6930E-13	1.9080E+12	1.0146E+12
Kr-87	2.0375E-03	7.1930E-14	4.9790E+11	1.4558E+12
Kr-88	5.0455E-03	4.0237E-13	2.7536E+12	2.5496E+12
Rb-86	1.7223E-05	2.1167E-13	1.4822E+12	8.5249E+09
Sr-89	2.7976E-08	9.6295E-16	6.5158E+09	2.2340E+06
Sr-90	3.6825E-09	2.6996E-14	1.8064E+11	2.9400E+05
Sr-91	3.0107E-08	8.3054E-18	5.4963E+07	2.4760E+06
Sr-92	2.1768E-08	1.7318E-18	1.1336E+07	1.9325E+06
Y-90	7.6109E-11	1.3989E-19	9.3604E+05	5.1004E+03
Y-91	3.6131E-10	1.4733E-17	9.7498E+07	2.8695E+04
Y-92	4.6059E-09	4.7866E-19	3.1332E+06	2.7743E+05
Y-93	3.4966E-10	1.0480E-19	6.7865E+05	2.8705E+04
Zr-95	4.3356E-10	2.0182E-17	1.2793E+08	3.4620E+04
Zr-97	3.8703E-10	2.0246E-19	1.2569E+06	3.1417E+04
Nb-95	4.3480E-10	1.1119E-17	7.0487E+07	3.4712E+04
Mo-99	5.4386E-09	1.1339E-17	6.8978E+07	4.3604E+05
Tc-99m	4.8943E-09	9.3078E-19	5.6619E+06	3.8897E+05
Ru-103	4.8122E-09	1.4910E-16	8.7177E+08	3.8430E+05
Ru-105	2.5146E-09	3.7409E-19	2.1455E+06	2.1404E+05
Ru-106	2.0959E-09	6.2648E-16	3.5592E+09	1.6734E+05
Rh-105	3.2097E-09	3.8027E-18	2.1810E+07	2.5642E+05
Sb-127	5.4500E-09	2.0408E-17	9.6772E+07	4.3643E+05
Sb-129	1.2402E-08	2.2054E-18	1.0296E+07	1.0575E+06
Te-127	5.4627E-09	2.0699E-18	9.8152E+06	4.3477E+05
Te-127m	9.3794E-10	9.9437E-17	4.7151E+08	7.4881E+04
Te-129	1.4034E-08	6.7012E-19	3.1284E+06	1.1324E+06
Te-129m	3.0906E-09	1.0259E-16	4.7893E+08	2.4674E+05
Te-131m	1.1102E-08	1.3922E-17	6.4001E+07	8.9464E+05
Te-132	8.1953E-08	2.6994E-16	1.2315E+09	6.5663E+06
I-131	7.0434E-03	5.6813E-11	2.6117E+14	3.4940E+12
I-132	5.8108E-03	5.6295E-13	2.5683E+12	4.0234E+12
I-133	1.3812E-02	1.2192E-11	5.5207E+13	7.0774E+12
I-134	3.4623E-03	1.2979E-13	5.8328E+11	4.3287E+12
I-135	1.1313E-02	3.2212E-12	1.4369E+13	6.2725E+12
Xe-133	1.9569E-02	1.0454E-10	4.7337E+14	7.5978E+12
Xe-135	8.6331E-03	3.3806E-12	1.5080E+13	3.2765E+12
Cs-134	1.8898E-03	1.4606E-09	6.5642E+15	9.3386E+11
Cs-136	5.6292E-04	7.6807E-12	3.4010E+13	2.7883E+11
Cs-137	1.5208E-03	1.7485E-08	7.6858E+16	7.5151E+11
Ba-139	1.6283E-08	9.9549E-19	4.3129E+06	1.6109E+06
Ba-140	4.3027E-08	5.8772E-16	2.5281E+09	3.4382E+06
La-140	1.1583E-09	2.0839E-18	8.9638E+06	7.4433E+04
La-141	2.8552E-10	5.0487E-20	2.1563E+05	2.4510E+04
La-142	1.6180E-10	1.1303E-20	4.7933E+04	1.5630E+04
Ce-141	1.0193E-09	3.5775E-17	1.5279E+08	8.1395E+04
Ce-143	9.4492E-10	1.4229E-18	5.9922E+06	7.6083E+04
Ce-144	8.1889E-10	2.5675E-16	1.0737E+09	6.5380E+04
Pr-143	3.8414E-10	5.7047E-18	2.4024E+07	3.0636E+04
Nd-147	1.5908E-10	1.9664E-18	8.0559E+06	1.2714E+04
Np-239	1.1324E-08	4.8812E-17	1.2299E+08	9.0855E+05
Pu-238	3.3065E-12	1.9314E-16	4.8871E+08	2.6398E+02
Pu-239	2.8966E-13	4.6602E-15	1.1742E+10	2.3124E+01
Pu-240	5.4244E-13	2.3805E-15	5.9732E+09	4.3306E+01
Pu-241	1.1691E-10	1.1350E-15	2.8360E+09	9.3341E+03
Am-241	7.8348E-14	2.2828E-17	5.7042E+07	6.2544E+00
Cm-242	1.9875E-11	5.9968E-18	1.4923E+07	1.5869E+03
Cm-244	1.3139E-12	1.6241E-17	4.0084E+07	1.0490E+02

CR Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump
Noble gases (atoms)	3.8023E+15	0.0000E+00
Elemental I (atoms)	1.6194E+13	0.0000E+00

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Organic I (atoms)      5.0141E+11  0.0000E+00
Aerosols (kg)          1.9022E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         3.3944E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   4.1765E-12
Total I (Ci)                                   4.1441E-02

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2826E+16
Elemental I (atoms)    0.0000E+00  7.2800E+13
Organic I (atoms)      0.0000E+00  2.2523E+12
Aerosols (kg)          0.0000E+00  8.2695E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.7510E+14
Elemental I (atoms)    5.0367E+09  1.5577E+08
Organic I (atoms)      1.7330E+09  5.3599E+07
Aerosols (kg)          5.4872E-12  1.6971E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    9.8953E+15  0.0000E+00
Elemental I (atoms)    5.5383E+13  0.0000E+00
Organic I (atoms)      1.7131E+12  0.0000E+00
Aerosols (kg)          6.3667E-08  0.0000E+00

EAB Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5852E-02  1.3347E-02  1.6598E-02
Accumulated dose (rem)  1.1268E-01  4.3787E-01  1.3340E-01

LPZ Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0074E+00  8.4817E-01  1.0548E+00
Accumulated dose (rem)  9.3597E+00  3.7467E+01  1.1130E+01

CR Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.7429E-05  4.5026E-01  1.9971E-02
Accumulated dose (rem)  3.4920E-03  1.8325E+01  8.1182E-01

DW Compartment Nuclide Inventory:

Time (h) =   2.1000       Ci           kg         Atoms      Decay
Co-58                  1.0928E+00  3.4368E-08  3.5684E+17  4.3186E+15
Co-60                  1.3091E+00  1.1581E-06  1.1623E+19  5.1714E+15
Kr-85                  1.3591E+06  3.4642E+00  2.4543E+25  1.6887E+20
Kr-85m                 1.6187E+07  1.9669E-03  1.3936E+22  2.2045E+21
Kr-87                  1.4312E+07  5.0526E-04  3.4974E+21  2.5043E+21
Kr-88                  3.6524E+07  2.9128E-03  1.9933E+22  5.2547E+21
Rb-86                  3.7648E+01  4.6269E-07  3.2400E+18  3.1336E+17
Sr-89                  1.8520E+03  6.3746E-05  4.3133E+20  7.3195E+18
Sr-90                  2.4379E+02  1.7872E-03  1.1959E+22  9.6308E+17
Sr-91                  1.9787E+03  5.4584E-07  3.6122E+18  8.3106E+18
Sr-92                  1.4047E+03  1.1176E-07  7.3154E+17  6.9087E+18
Y-90                   3.0477E+00  5.6018E-09  3.7483E+16  1.0071E+16
Y-91                   2.3589E+01  9.6188E-07  6.3654E+18  9.2903E+16
Y-92                   7.8596E+01  8.1681E-09  5.3467E+16  1.1012E+17
Y-93                   2.2990E+01  6.8908E-09  4.4621E+16  9.6207E+16
Zr-95                  2.8701E+01  1.3360E-06  8.4691E+18  1.1342E+17
Zr-97                  2.5518E+01  1.3348E-08  8.2871E+16  1.0433E+17
Nb-95                  2.8785E+01  7.3613E-07  4.6664E+18  1.1371E+17
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Mo-99	3.5967E+02	7.4991E-07	4.5617E+18	1.4334E+18
Tc-99m	3.2395E+02	6.1608E-08	3.7476E+17	1.2764E+18
Ru-103	3.1855E+02	9.8703E-06	5.7709E+19	1.2592E+18
Ru-105	1.6390E+02	2.4382E-08	1.3984E+17	7.3906E+17
Ru-106	1.3876E+02	4.1474E-05	2.3563E+20	5.4818E+17
Rh-105	2.1239E+02	2.5164E-07	1.4432E+18	8.4078E+17
Sb-127	3.6054E+02	1.3501E-06	6.4017E+18	1.4332E+18
Sb-129	8.0796E+02	1.4368E-07	6.7074E+17	3.6570E+18
Te-127	3.6162E+02	1.3702E-07	6.4974E+17	1.4256E+18
Te-127m	6.2094E+01	6.5830E-06	3.1215E+19	2.4529E+17
Te-129	9.2061E+02	4.3959E-08	2.0522E+17	3.8247E+18
Te-129m	2.0460E+02	6.7917E-06	3.1706E+19	8.0827E+17
Te-131m	7.3326E+02	9.1956E-07	4.2273E+18	2.9532E+18
Te-132	5.4207E+03	1.7855E-05	8.1459E+19	2.1573E+19
I-131	5.0440E+04	4.0686E-04	1.8703E+21	1.4793E+20
I-132	6.9462E+04	6.7294E-06	3.0701E+19	2.1052E+20
I-133	9.8517E+04	8.6967E-05	3.9378E+20	3.0045E+20
I-134	2.2895E+04	8.5824E-07	3.8570E+18	2.0512E+20
I-135	8.0115E+04	2.2813E-05	1.0176E+20	2.6838E+20
Xe-133	1.4469E+08	7.7298E-01	3.5000E+24	1.8015E+22
Xe-135	5.9695E+07	2.3376E-02	1.0428E+23	7.5386E+21
Cs-134	4.1315E+03	3.1933E-03	1.4351E+22	3.4318E+19
Cs-136	1.2304E+03	1.6788E-05	7.4338E+19	1.0251E+19
Cs-137	3.3249E+03	3.8226E-02	1.6803E+23	2.7617E+19
Ba-139	1.0251E+03	6.2672E-08	2.7152E+17	6.3011E+18
Ba-140	2.8478E+03	3.8900E-05	1.6733E+20	1.1271E+19
La-140	3.9802E+01	7.1609E-08	3.0803E+17	1.2072E+17
La-141	1.8572E+01	3.2839E-09	1.4026E+16	8.5225E+16
La-142	1.0240E+01	7.1536E-10	3.0338E+15	5.9934E+16
Ce-141	6.7503E+01	2.3691E-06	1.0118E+19	2.6673E+17
Ce-143	6.2425E+01	9.4002E-08	3.9587E+17	2.5097E+17
Ce-144	5.4212E+01	1.6997E-05	7.1082E+19	2.1418E+17
Pr-143	2.5369E+01	3.7674E-07	1.5866E+18	1.0015E+17
Nd-147	1.0529E+01	1.3015E-07	5.3318E+17	4.1685E+16
Np-239	7.4875E+02	3.2275E-06	8.1324E+18	2.9883E+18
Pu-238	2.1890E-01	1.2787E-05	3.2354E+19	8.6475E+14
Pu-239	1.9177E-02	3.0852E-04	7.7739E+20	7.5747E+13
Pu-240	3.5911E-02	1.5759E-04	3.9544E+20	1.4186E+14
Pu-241	7.7400E+00	7.5136E-05	1.8775E+20	3.0576E+16
Am-241	5.1862E-03	1.5111E-06	3.7759E+18	2.0485E+13
Cm-242	1.3158E+00	3.9699E-07	9.8792E+17	5.1986E+15
Cm-244	8.6986E-02	1.0752E-06	2.6537E+18	3.4363E+14

DW Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	2.8185E+25	0.0000E+00	
Elemental I (atoms)	4.4456E+19	4.8566E+22	
Organic I (atoms)	1.4852E+21	0.0000E+00	
Aerosols (kg)	4.4188E-02	4.8943E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.6385E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.0325E-05
Total I (Ci)			3.2143E+05

DW to RB Transport Group Inventory:

Time (h) = 2.1000 Leakage Transport

Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5517E+17
Aerosols (kg)	1.6722E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.1000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3549E+17
Organic I (atoms)	0.0000E+00	4.8368E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.1000	Pipe Walls	Transported

Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3549E+17
Organic I (atoms)	0.0000E+00	4.8368E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.5808E-02	4.9713E-10	5.1617E+15	1.9601E+12
Co-60	1.8935E-02	1.6751E-08	1.6813E+17	2.3474E+12
Kr-85	6.3677E+02	1.6230E-03	1.1499E+22	5.4627E+16
Kr-85m	7.5840E+03	9.2156E-07	6.5291E+18	6.9892E+17
Kr-87	6.7053E+03	2.3672E-07	1.6386E+18	7.5081E+17
Kr-88	1.7112E+04	1.3647E-06	9.3390E+18	1.6459E+18
Rb-86	9.6029E-01	1.1802E-08	8.2643E+16	2.0736E+14
Sr-89	2.6788E+01	9.2208E-07	6.2392E+18	3.3220E+15
Sr-90	3.5264E+00	2.5852E-05	1.7298E+20	4.3717E+14
Sr-91	2.8621E+01	7.8955E-09	5.2250E+16	3.6953E+15
Sr-92	2.0319E+01	1.6165E-09	1.0582E+16	2.9142E+15
Y-90	6.7426E-02	1.2393E-10	8.2925E+14	6.7071E+12
Y-91	3.4504E-01	1.4070E-08	9.3108E+16	4.2522E+13
Y-92	3.7039E+00	3.8493E-10	2.5196E+15	3.0571E+14
Y-93	3.3255E-01	9.9675E-11	6.4543E+14	4.2831E+13
Zr-95	4.1516E-01	1.9325E-08	1.2250E+17	5.1480E+13
Zr-97	3.6911E-01	1.9308E-10	1.1987E+15	4.6811E+13
Nb-95	4.1637E-01	1.0648E-08	6.7499E+16	5.1616E+13
Mo-99	5.2026E+00	1.0847E-08	6.5985E+16	6.4872E+14
Tc-99m	4.6859E+00	8.9115E-10	5.4209E+15	5.7855E+14
Ru-103	4.6079E+00	1.4277E-07	8.3476E+17	5.7147E+14
Ru-105	2.3707E+00	3.5268E-10	2.0228E+15	3.2089E+14
Ru-106	2.0071E+00	5.9992E-07	3.4083E+18	2.4883E+14
Rh-105	3.0723E+00	3.6399E-09	2.0876E+16	3.8133E+14
Sb-127	5.2151E+00	1.9528E-08	9.2601E+16	6.4920E+14
Sb-129	1.1687E+01	2.0783E-09	9.7022E+15	1.5858E+15
Te-127	5.2307E+00	1.9820E-09	9.3984E+15	6.4659E+14
Te-127m	8.9819E-01	9.5222E-08	4.5153E+17	1.1135E+14
Te-129	1.3317E+01	6.3587E-10	2.9684E+15	1.6913E+15
Te-129m	2.9596E+00	9.8241E-08	4.5862E+17	3.6690E+14
Te-131m	1.0607E+01	1.3301E-08	6.1147E+16	1.3318E+15
Te-132	7.8409E+01	2.5827E-07	1.1783E+18	9.7681E+15
I-131	4.6397E+02	3.7425E-06	1.7204E+19	9.3299E+16
I-132	4.9335E+02	4.7796E-08	2.1805E+17	1.1045E+17
I-133	9.0669E+02	8.0039E-07	3.6241E+18	1.8700E+17
I-134	2.1071E+02	7.8986E-09	3.5497E+16	8.9687E+16
I-135	7.3733E+02	2.0995E-07	9.3657E+17	1.6170E+17
Xe-133	6.7722E+04	3.6180E-04	1.6382E+21	5.8201E+18
Xe-135	2.7301E+04	1.0691E-05	4.7690E+19	2.3817E+18
Cs-134	1.0538E+02	8.1451E-05	3.6605E+20	2.2726E+16
Cs-136	3.1384E+01	4.2822E-07	1.8962E+18	6.7808E+15
Cs-137	8.4810E+01	9.7503E-04	4.2859E+21	1.8289E+16
Ba-139	1.4828E+01	9.0654E-10	3.9276E+15	2.4706E+15
Ba-140	4.1193E+01	5.6268E-07	2.4204E+18	5.1131E+15
La-140	1.0080E+00	1.8135E-09	7.8007E+15	9.4418E+13
La-141	2.6864E-01	4.7501E-11	2.0288E+14	3.6787E+13
La-142	1.4813E-01	1.0348E-11	4.3883E+13	2.3877E+13
Ce-141	9.7617E-01	3.4260E-08	1.4632E+17	1.2104E+14
Ce-143	9.0297E-01	1.3597E-09	5.7262E+15	1.1325E+14
Ce-144	7.8417E-01	2.4586E-07	1.0282E+18	9.7219E+13
Pr-143	3.6769E-01	5.4603E-09	2.2995E+16	4.5528E+13
Nd-147	1.5230E-01	1.8826E-09	7.7124E+15	1.8908E+13
Np-239	1.0831E+01	4.6686E-08	1.1763E+17	1.3518E+15
Pu-238	3.1664E-03	1.8496E-07	4.6800E+17	3.9254E+11
Pu-239	2.7739E-04	4.4627E-06	1.1245E+19	3.4385E+10
Pu-240	5.1944E-04	2.2796E-06	5.7200E+18	6.4395E+10
Pu-241	1.1196E-01	1.0868E-06	2.7158E+18	1.3880E+13
Am-241	7.5026E-05	2.1860E-08	5.4623E+16	9.2998E+09
Cm-242	1.9032E-02	5.7425E-09	1.4290E+16	2.3597E+12
Cm-244	1.2582E-03	1.5553E-08	3.8385E+16	1.5598E+11

RB Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump
Noble gases (atoms)	1.3202E+22	0.0000E+00

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Elemental I (atoms)    1.0322E+18  0.0000E+00
Organic I (atoms)      7.6710E+17  0.0000E+00
Aerosols (kg)          1.0984E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.9055E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    2.3515E-08
Total I (Ci)                                    2.8121E+03

DW to  RB Transport Group Inventory:
Time (h) =   2.1000  Leakage Transport

Noble gases (atoms)      1.5869E+22
Elemental I (atoms)      1.5867E+18
Organic I (atoms)        9.5517E+17
Aerosols (kg)            1.6722E-03

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.1000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.6556E+21
Elemental I (atoms)    4.9573E+17  3.6080E+16
Organic I (atoms)      1.7212E+17  5.9650E+15
Aerosols (kg)          5.4091E-04  4.0298E-05

Environment Integral Nuclide Release:

Time (h) =   2.1000       Ci           kg          Atoms         Bq
Co-58                  1.4254E-04  4.4826E-12  4.6543E+13  5.2739E+06
Co-60                  1.7070E-04  1.5101E-10  1.5157E+15  6.3160E+06
Kr-85                  1.2802E+02  3.2631E-04  2.3119E+21  4.7369E+12
Kr-85m                 1.6257E+03  1.9755E-07  1.3996E+18  6.0152E+13
Kr-87                  1.7147E+03  6.0534E-08  4.1902E+17  6.3443E+13
Kr-88                  3.8121E+03  3.0402E-07  2.0805E+18  1.4105E+14
Rb-86                  3.6246E-02  4.4547E-10  3.1194E+15  1.3411E+09
Sr-89                  2.4157E-01  8.3150E-09  5.6263E+16  8.9381E+09
Sr-90                  3.1791E-02  2.3306E-07  1.5595E+18  1.1763E+09
Sr-91                  2.6777E-01  7.3866E-11  4.8883E+14  9.9073E+09
Sr-92                  2.0933E-01  1.6654E-11  1.0901E+14  7.7451E+09
Y-90                   5.2551E-04  9.6590E-13  6.4631E+12  1.9444E+07
Y-91                   3.0982E-03  1.2634E-10  8.3606E+14  1.1464E+08
Y-92                   2.6535E-02  2.7577E-12  1.8051E+13  9.8181E+08
Y-93                   3.1042E-03  9.3044E-13  6.0250E+12  1.1486E+08
Zr-95                  3.7435E-03  1.7426E-10  1.1046E+15  1.3851E+08
Zr-97                  3.3973E-03  1.7771E-12  1.1033E+13  1.2570E+08
Nb-95                  3.7537E-03  9.5994E-11  6.0851E+14  1.3889E+08
Mo-99                  4.7150E-02  9.8309E-11  5.9801E+14  1.7446E+09
Tc-99m                 4.2279E-02  8.0405E-12  4.8910E+13  1.5643E+09
Ru-103                 4.1555E-02  1.2876E-09  7.5282E+15  1.5376E+09
Ru-105                 2.3159E-02  3.4452E-12  1.9760E+13  8.5688E+08
Ru-106                 1.8095E-02  5.4085E-09  3.0727E+16  6.6950E+08
Rh-105                 2.7745E-02  3.2872E-11  1.8853E+14  1.0266E+09
Sb-127                 4.7192E-02  1.7672E-10  8.3796E+14  1.7461E+09
Sb-129                 1.1443E-01  2.0349E-11  9.4994E+13  4.2338E+09
Te-127                 4.7171E-02  1.7874E-11  8.4754E+13  1.7453E+09
Te-127m                8.0972E-03  8.5843E-10  4.0705E+15  2.9960E+08
Te-129                 1.2529E-01  5.9826E-12  2.7929E+13  4.6357E+09
Te-129m                2.6681E-02  8.8568E-10  4.1346E+15  9.8721E+08
Te-131m                9.6740E-02  1.2132E-10  5.5771E+14  3.5794E+09
Te-132                 7.1003E-01  2.3387E-09  1.0670E+16  2.6271E+10
I-131                  1.5468E+01  1.2477E-07  5.7358E+17  5.7233E+11
I-132                  1.9941E+01  1.9318E-09  8.8134E+15  7.3780E+11
I-133                  3.1510E+01  2.7816E-08  1.2595E+17  1.1659E+12
I-134                  2.3102E+01  8.6599E-10  3.8919E+15  8.5477E+11
I-135                  2.8331E+01  8.0674E-09  3.5987E+16  1.0483E+12
Xe-133                 1.3635E+04  7.2846E-05  3.2984E+20  5.0451E+14
Xe-135                 5.5520E+03  2.1741E-06  9.6983E+18  2.0543E+14
Cs-134                 3.9693E+00  3.0678E-06  1.3787E+19  1.4686E+11
Cs-136                 1.1857E+00  1.6178E-08  7.1638E+16  4.3871E+10
Cs-137                 3.1942E+00  3.6722E-05  1.6142E+20  1.1818E+11
Ba-139                 1.7545E-01  1.0726E-11  4.6471E+13  6.4915E+09
Ba-140                 3.7178E-01  5.0784E-09  2.1845E+16  1.3756E+10
La-140                 7.5668E-03  1.3614E-11  5.8559E+13  2.7997E+08
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La-141	2.6524E-03	4.6901E-13	2.0031E+12	9.8139E+07
La-142	1.6997E-03	1.1873E-13	5.0355E+11	6.2888E+07
Ce-141	8.8020E-03	3.0891E-10	1.3194E+15	3.2568E+08
Ce-143	8.2270E-03	1.2389E-11	5.2172E+13	3.0440E+08
Ce-144	7.0697E-03	2.2166E-09	9.2698E+15	2.6158E+08
Pr-143	3.3122E-03	4.9187E-11	2.0714E+14	1.2255E+08
Nd-147	1.3748E-03	1.6994E-11	6.9620E+13	5.0868E+07
Np-239	9.8244E-02	4.2348E-10	1.0671E+15	3.6350E+09
Pu-238	2.8545E-05	1.6674E-09	4.2190E+15	1.0562E+06
Pu-239	2.5005E-06	4.0229E-08	1.0137E+17	9.2519E+04
Pu-240	4.6828E-06	2.0551E-08	5.1566E+16	1.7326E+05
Pu-241	1.0093E-03	9.7980E-09	2.4483E+16	3.7345E+07
Am-241	6.7630E-07	1.9705E-10	4.9238E+14	2.5023E+04
Cm-242	1.7159E-04	5.1773E-11	1.2884E+14	6.3489E+06
Cm-244	1.1343E-05	1.4021E-10	3.4604E+14	4.1970E+05

Environment Transport Group Inventory:

Time (h) = 2.1000	Total Release	Release Rate/s	
Noble gases (atoms)	2.6553E+21	3.5123E+17	
Elemental I (atoms)	3.6054E+16	4.7690E+12	
Organic I (atoms)	5.9567E+15	7.8793E+11	
Aerosols (kg)	4.0295E-05	5.3300E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.1675E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.7361E+01
Total I (Ci)			1.1835E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.6556E+21
Elemental I (atoms)	4.9573E+17	3.6080E+16
Organic I (atoms)	1.7212E+17	5.9650E+15
Aerosols (kg)	5.4091E-04	4.0298E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2899E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2524E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0399E+15
Elemental I (atoms)	5.4369E+09	1.6815E+08
Organic I (atoms)	2.0139E+09	6.2286E+07
Aerosols (kg)	5.9125E-12	1.8286E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.1000	Pathway Filtered	Transported
Noble gases (atoms)	1.0187E+16	0.0000E+00
Elemental I (atoms)	5.6587E+13	0.0000E+00
Organic I (atoms)	1.7504E+12	0.0000E+00
Aerosols (kg)	6.5081E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.8152E-11	5.7087E-19	5.9273E+06	1.5600E+03
Co-60	2.1744E-11	1.9236E-17	1.9307E+08	1.8683E+03
Kr-85	1.8066E-04	4.6047E-10	3.2624E+15	7.3431E+10
Kr-85m	2.1517E-03	2.6146E-13	1.8524E+12	1.0435E+12
Kr-87	1.9024E-03	6.7161E-14	4.6489E+11	1.4818E+12

Kr-88	4.8549E-03	3.8718E-13	2.6496E+12	2.6150E+12
Rb-86	1.5941E-05	1.9591E-13	1.3719E+12	8.7372E+09
Sr-89	3.0762E-08	1.0588E-15	7.1646E+09	2.6438E+06
Sr-90	4.0494E-09	2.9687E-14	1.9864E+11	3.4794E+05
Sr-91	3.2866E-08	9.0666E-18	6.0000E+07	2.9154E+06
Sr-92	2.3333E-08	1.8563E-18	1.2151E+07	2.2473E+06
Y-90	8.6349E-11	1.5871E-19	1.0620E+06	6.1927E+03
Y-91	3.9770E-10	1.6217E-17	1.0732E+08	3.3983E+04
Y-92	5.2468E-09	5.4528E-19	3.5693E+06	3.4178E+05
Y-93	3.8187E-10	1.1446E-19	7.4117E+05	3.3809E+04
Zr-95	4.7674E-10	2.2192E-17	1.4067E+08	4.0970E+04
Zr-97	4.2386E-10	2.2172E-19	1.3765E+06	3.7075E+04
Nb-95	4.7813E-10	1.2227E-17	7.7511E+07	4.1081E+04
Mo-99	5.9743E-09	1.2456E-17	7.5772E+07	5.1566E+05
Tc-99m	5.3809E-09	1.0233E-18	6.2249E+06	4.6025E+05
Ru-103	5.2913E-09	1.6395E-16	9.5857E+08	4.5478E+05
Ru-105	2.7224E-09	4.0499E-19	2.3228E+06	2.5059E+05
Ru-106	2.3048E-09	6.8890E-16	3.9138E+09	1.9804E+05
Rh-105	3.5280E-09	4.1798E-18	2.3973E+07	3.0338E+05
Sb-127	5.9886E-09	2.2425E-17	1.0634E+08	5.1623E+05
Sb-129	1.3421E-08	2.3866E-18	1.1141E+07	1.2378E+06
Te-127	6.0066E-09	2.2760E-18	1.0792E+07	5.1449E+05
Te-127m	1.0314E-09	1.0935E-16	5.1850E+08	8.8619E+04
Te-129	1.5292E-08	7.3018E-19	3.4087E+06	1.3319E+06
Te-129m	3.3985E-09	1.1281E-16	5.2665E+08	2.9201E+05
Te-131m	1.2180E-08	1.5274E-17	7.0216E+07	1.0571E+06
Te-132	9.0039E-08	2.9658E-16	1.3531E+09	7.7661E+06
I-131	6.5177E-03	5.2573E-11	2.4168E+14	3.5808E+12
I-132	5.2194E-03	5.0565E-13	2.3069E+12	4.0940E+12
I-133	1.2743E-02	1.1249E-11	5.0934E+13	7.2474E+12
I-134	2.9614E-03	1.1101E-13	4.9889E+11	4.3698E+12
I-135	1.0363E-02	2.9508E-12	1.3163E+13	6.4113E+12
Xe-133	1.9287E-02	1.0304E-10	4.6655E+14	7.8547E+12
Xe-135	8.4713E-03	3.3172E-12	1.4798E+13	3.3889E+12
Cs-134	1.7494E-03	1.3521E-09	6.0764E+15	9.5716E+11
Cs-136	5.2098E-04	7.1084E-12	3.1476E+13	2.8577E+11
Cs-137	1.4078E-03	1.6185E-08	7.1146E+16	7.7026E+11
Ba-139	1.7028E-08	1.0410E-18	4.5101E+06	1.8435E+06
Ba-140	4.7303E-08	6.4614E-16	2.7794E+09	4.0684E+06
La-140	1.3226E-09	2.3795E-18	1.0236E+07	9.0980E+04
La-141	3.0848E-10	5.4547E-20	2.3297E+05	2.8656E+04
La-142	1.7010E-10	1.1882E-20	5.0392E+04	1.7947E+04
Ce-141	1.1209E-09	3.9338E-17	1.6801E+08	9.6326E+04
Ce-143	1.0369E-09	1.5614E-18	6.5755E+06	8.9909E+04
Ce-144	9.0048E-10	2.8233E-16	1.1807E+09	7.7375E+04
Pr-143	4.2250E-10	6.2743E-18	2.6423E+07	3.6261E+04
Nd-147	1.7489E-10	2.1618E-18	8.8563E+06	1.5044E+04
Np-239	1.2437E-08	5.3610E-17	1.3508E+08	1.0743E+06
Pu-238	3.6360E-12	2.1239E-16	5.3741E+08	3.1241E+02
Pu-239	3.1853E-13	5.1247E-15	1.2913E+10	2.7367E+01
Pu-240	5.9649E-13	2.6177E-15	6.5684E+09	5.1252E+01
Pu-241	1.2856E-10	1.2480E-15	3.1186E+09	1.1047E+04
Am-241	8.6157E-14	2.5103E-17	6.2727E+07	7.4020E+00
Cm-242	2.1855E-11	6.5942E-18	1.6410E+07	1.8780E+03
Cm-244	1.4449E-12	1.7859E-17	4.4079E+07	1.2415E+02

CR Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	3.7487E+15	0.0000E+00	
Elemental I (atoms)	1.4966E+13	0.0000E+00	
Organic I (atoms)	4.6352E+11	0.0000E+00	
Aerosols (kg)	1.7609E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.1374E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.8547E-12
Total I (Ci)			3.7804E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2899E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13

Organic I (atoms)	0.0000E+00	2.2524E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0399E+15
Elemental I (atoms)	5.4369E+09	1.6815E+08
Organic I (atoms)	2.0139E+09	6.2286E+07
Aerosols (kg)	5.9125E-12	1.8286E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	1.0187E+16	0.0000E+00
Elemental I (atoms)	5.6587E+13	0.0000E+00
Organic I (atoms)	1.7504E+12	0.0000E+00
Aerosols (kg)	6.5081E-08	0.0000E+00

EAB Doses:

Time (h) = 2.2000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.7101E-02	1.3017E-02	1.7829E-02
Accumulated dose (rem)	1.2978E-01	4.5088E-01	1.5122E-01

LPZ Doses:

Time (h) = 2.2000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.0868E+00	8.2725E-01	1.1330E+00
Accumulated dose (rem)	1.0447E+01	3.8294E+01	1.2263E+01

CR Doses:

Time (h) = 2.2000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.1881E-05	4.1617E-01	1.8463E-02
Accumulated dose (rem)	3.5538E-03	1.8741E+01	8.3029E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.2000	Ci	kg	Atoms	Decay
Co-58	8.0948E-01	2.5457E-08	2.6432E+17	4.3294E+15
Co-60	9.6967E-01	8.5782E-07	8.6099E+18	5.1843E+15
Kr-85	1.3590E+06	3.4638E+00	2.4541E+25	1.8697E+20
Kr-85m	1.5937E+07	1.9366E-03	1.3720E+22	2.4184E+21
Kr-87	1.3551E+07	4.7841E-04	3.3115E+21	2.6898E+21
Kr-88	3.5640E+07	2.8422E-03	1.9450E+22	5.7352E+21
Rb-86	2.7883E+01	3.4268E-07	2.3996E+18	3.1374E+17
Sr-89	1.3718E+03	4.7217E-05	3.1949E+20	7.3378E+18
Sr-90	1.8059E+02	1.3239E-03	8.8584E+21	9.6548E+17
Sr-91	1.4550E+03	4.0139E-07	2.6563E+18	8.3301E+18
Sr-92	1.0143E+03	8.0692E-08	5.2820E+17	6.9224E+18
Y-90	2.4507E+00	4.5045E-09	3.0141E+16	1.0101E+16
Y-91	1.7503E+01	7.1370E-07	4.7231E+18	9.3136E+16
Y-92	7.7206E+01	8.0237E-09	5.2521E+16	1.1089E+17
Y-93	1.6913E+01	5.0694E-09	3.2826E+16	9.6433E+16
Zr-95	2.1259E+01	9.8959E-07	6.2731E+18	1.1371E+17
Zr-97	1.8825E+01	9.8472E-09	6.1135E+16	1.0458E+17
Nb-95	2.1322E+01	5.4529E-07	3.4566E+18	1.1399E+17
Mo-99	2.6614E+02	5.5491E-07	3.3755E+18	1.4369E+18
Tc-99m	2.3991E+02	4.5626E-08	2.7754E+17	1.2795E+18
Ru-103	2.3595E+02	7.3108E-06	4.2745E+19	1.2623E+18
Ru-105	1.1952E+02	1.7781E-08	1.0198E+17	7.4067E+17
Ru-106	1.0278E+02	3.0722E-05	1.7454E+20	5.4955E+17
Rh-105	1.5726E+02	1.8631E-07	1.0686E+18	8.4288E+17
Sb-127	2.6686E+02	9.9929E-07	4.7385E+18	1.4368E+18
Sb-129	5.8897E+02	1.0474E-07	4.8894E+17	3.6650E+18
Te-127	2.6784E+02	1.0149E-07	4.8125E+17	1.4292E+18
Te-127m	4.5996E+01	4.8763E-06	2.3123E+19	2.4591E+17
Te-129	6.7559E+02	3.2259E-08	1.5060E+17	3.8335E+18
Te-129m	1.5156E+02	5.0309E-06	2.3486E+19	8.1029E+17

Te-131m	5.4191E+02	6.7959E-07	3.1241E+18	2.9604E+18
Te-132	4.0118E+03	1.3214E-05	6.0287E+19	2.1626E+19
I-131	4.5677E+04	3.6843E-04	1.6937E+21	1.4853E+20
I-132	6.1177E+04	5.9268E-06	2.7039E+19	2.1135E+20
I-133	8.8949E+04	7.8521E-05	3.5553E+20	3.0164E+20
I-134	1.9164E+04	7.1836E-07	3.2284E+18	2.0539E+20
I-135	7.1818E+04	2.0450E-05	9.1226E+19	2.6934E+20
Xe-133	1.4459E+08	7.7248E-01	3.4977E+24	1.9941E+22
Xe-135	5.9236E+07	2.3196E-02	1.0347E+23	8.3306E+21
Cs-134	3.0604E+03	2.3654E-03	1.0630E+22	3.4359E+19
Cs-136	9.1122E+02	1.2433E-05	5.5054E+19	1.0263E+19
Cs-137	2.4629E+03	2.8315E-02	1.2447E+23	2.7650E+19
Ba-139	7.2211E+02	4.4147E-08	1.9126E+17	6.3109E+18
Ba-140	2.1090E+03	2.8808E-05	1.2392E+20	1.1299E+19
La-140	3.3063E+01	5.9484E-08	2.5587E+17	1.2112E+17
La-141	1.3516E+01	2.3900E-09	1.0208E+16	8.5406E+16
La-142	7.2520E+00	5.0660E-10	2.1485E+15	6.0033E+16
Ce-141	4.9999E+01	1.7548E-06	7.4946E+18	2.6739E+17
Ce-143	4.6144E+01	6.9485E-08	2.9262E+17	2.5158E+17
Ce-144	4.0157E+01	1.2590E-05	5.2653E+19	2.1471E+17
Pr-143	1.8798E+01	2.7915E-07	1.1756E+18	1.0040E+17
Nd-147	7.7971E+00	9.6382E-08	3.9485E+17	4.1789E+16
Np-239	5.5395E+02	2.3878E-06	6.0167E+18	2.9957E+18
Pu-238	1.6215E-01	9.4716E-06	2.3966E+19	8.6691E+14
Pu-239	1.4205E-02	2.2854E-04	5.7585E+20	7.5936E+13
Pu-240	2.6601E-02	1.1674E-04	2.9292E+20	1.4222E+14
Pu-241	5.7334E+00	5.5657E-05	1.3908E+20	3.0653E+16
Am-241	3.8418E-03	1.1193E-06	2.7970E+18	2.0536E+13
Cm-242	9.7462E-01	2.9407E-07	7.3178E+17	5.2115E+15
Cm-244	6.4434E-02	7.9644E-07	1.9657E+18	3.4449E+14

DW Transport Group Inventory:

Time (h) = 2.2000	Atmosphere	Sump	
Noble gases (atoms)	2.8178E+25	0.0000E+00	
Elemental I (atoms)	4.4374E+19	4.8566E+22	
Organic I (atoms)	1.4825E+21	0.0000E+00	
Aerosols (kg)	3.2731E-02	4.8955E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.4819E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.8354E-05
Total I (Ci)			2.8678E+05

DW to RB Transport Group Inventory:

Time (h) = 2.2000 Leakage Transport

Noble gases (atoms)	1.7630E+22
Elemental I (atoms)	1.5895E+18
Organic I (atoms)	1.0480E+18
Aerosols (kg)	1.6746E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.2000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	8.5264E+21
Elemental I (atoms)	0.0000E+00	8.3634E+17
Organic I (atoms)	0.0000E+00	5.1207E+17
Aerosols (kg)	0.0000E+00	8.8140E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.2000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	8.5264E+21
Elemental I (atoms)	0.0000E+00	8.3634E+17
Organic I (atoms)	0.0000E+00	5.1207E+17
Aerosols (kg)	0.0000E+00	8.8140E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.2000	Ci	kg	Atoms	Decay
Co-58	1.5346E-02	4.8260E-10	5.0108E+15	2.1645E+12
Co-60	1.8382E-02	1.6262E-08	1.6322E+17	2.5923E+12
Kr-85	6.9938E+02	1.7826E-03	1.2630E+22	6.3943E+16
Kr-85m	8.2018E+03	9.9663E-07	7.0610E+18	8.0902E+17

Kr-87	6.9740E+03	2.4621E-07	1.7042E+18	8.4628E+17
Kr-88	1.8342E+04	1.4627E-06	1.0010E+19	1.8932E+18
Rb-86	9.3059E-01	1.1437E-08	8.0086E+16	2.1976E+14
Sr-89	2.6005E+01	8.9511E-07	6.0567E+18	3.6684E+15
Sr-90	3.4234E+00	2.5097E-05	1.6793E+20	4.8277E+14
Sr-91	2.7583E+01	7.6092E-09	5.0356E+16	4.0640E+15
Sr-92	1.9228E+01	1.5297E-09	1.0013E+16	3.1736E+15
Y-90	6.9008E-02	1.2684E-10	8.4871E+14	7.5774E+12
Y-91	3.3551E-01	1.3681E-08	9.0536E+16	4.6983E+13
Y-92	3.8981E+00	4.0511E-10	2.6518E+15	3.5301E+14
Y-93	3.2063E-01	9.6103E-11	6.2230E+14	4.7116E+13
Zr-95	4.0302E-01	1.8760E-08	1.1892E+17	5.6849E+13
Zr-97	3.5687E-01	1.8668E-10	1.1590E+15	5.1574E+13
Nb-95	4.0422E-01	1.0337E-08	6.5528E+16	5.7000E+13
Mo-99	5.0454E+00	1.0520E-08	6.3991E+16	7.1596E+14
Tc-99m	4.5482E+00	8.6496E-10	5.2615E+15	6.3879E+14
Ru-103	4.4730E+00	1.3859E-07	8.1033E+17	6.3105E+14
Ru-105	2.2659E+00	3.3708E-10	1.9333E+15	3.5130E+14
Ru-106	1.9485E+00	5.8240E-07	3.3088E+18	2.7478E+14
Rh-105	2.9812E+00	3.5320E-09	2.0257E+16	4.2102E+14
Sb-127	5.0590E+00	1.8944E-08	8.9829E+16	7.1661E+14
Sb-129	1.1165E+01	1.9855E-09	9.2690E+15	1.7358E+15
Te-127	5.0776E+00	1.9240E-09	9.1233E+15	7.1398E+14
Te-127m	8.7196E-01	9.2442E-08	4.3834E+17	1.2296E+14
Te-129	1.2807E+01	6.1155E-10	2.8549E+15	1.8585E+15
Te-129m	2.8731E+00	9.5372E-08	4.4523E+17	4.0516E+14
Te-131m	1.0273E+01	1.2883E-08	5.9225E+16	1.4688E+15
Te-132	7.6053E+01	2.5051E-07	1.1429E+18	1.0782E+16
I-131	4.5151E+02	3.6420E-06	1.6742E+19	9.9314E+16
I-132	4.6920E+02	4.5456E-08	2.0738E+17	1.1676E+17
I-133	8.7971E+02	7.7657E-07	3.5163E+18	1.9874E+17
I-134	1.8953E+02	7.1046E-09	3.1929E+16	9.2314E+16
I-135	7.1029E+02	2.0225E-07	9.0223E+17	1.7121E+17
Xe-133	7.4349E+04	3.9720E-04	1.7985E+21	6.8107E+18
Xe-135	2.9849E+04	1.1689E-05	5.2141E+19	2.7807E+18
Cs-134	1.0214E+02	7.8943E-05	3.5478E+20	2.4087E+16
Cs-136	3.0412E+01	4.1494E-07	1.8374E+18	7.1859E+15
Cs-137	8.2199E+01	9.4501E-04	4.1540E+21	1.9384E+16
Ba-139	1.3689E+01	8.3691E-10	3.6259E+15	2.6576E+15
Ba-140	3.9982E+01	5.4613E-07	2.3492E+18	5.6458E+15
La-140	1.0441E+00	1.8785E-09	8.0803E+15	1.0742E+14
La-141	2.5623E-01	4.5308E-11	1.9351E+14	4.0231E+13
La-142	1.3748E-01	9.6038E-12	4.0729E+13	2.5750E+13
Ce-141	9.4761E-01	3.3257E-08	1.4204E+17	1.3367E+14
Ce-143	8.7477E-01	1.3173E-09	5.5473E+15	1.2491E+14
Ce-144	7.6127E-01	2.3868E-07	9.9817E+17	1.0736E+14
Pr-143	3.5706E-01	5.3024E-09	2.2330E+16	5.0282E+13
Nd-147	1.4781E-01	1.8271E-09	7.4853E+15	2.0877E+13
Np-239	1.0502E+01	4.5267E-08	1.1406E+17	1.4918E+15
Pu-238	3.0739E-03	1.7956E-07	4.5433E+17	4.3348E+11
Pu-239	2.6929E-04	4.3325E-06	1.0917E+19	3.7972E+10
Pu-240	5.0428E-04	2.2130E-06	5.5530E+18	7.1112E+10
Pu-241	1.0869E-01	1.0551E-06	2.6365E+18	1.5327E+13
Am-241	7.2837E-05	2.1222E-08	5.3030E+16	1.0270E+10
Cm-242	1.8476E-02	5.5747E-09	1.3873E+16	2.6058E+12
Cm-244	1.2215E-03	1.5098E-08	3.7264E+16	1.7226E+11

RB Transport Group Inventory:

Time (h) = 2.2000	Atmosphere	Sump	
Noble gases (atoms)	1.4499E+22	0.0000E+00	
Elemental I (atoms)	9.9942E+17	0.0000E+00	
Organic I (atoms)	8.3182E+17	0.0000E+00	
Aerosols (kg)	1.0646E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.8521E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2825E-08
Total I (Ci)			2.7002E+03

DW to RB Transport Group Inventory:

Time (h) = 2.2000	Leakage Transport
Noble gases (atoms)	1.7630E+22
Elemental I (atoms)	1.5895E+18

Organic I (atoms) 1.0480E+18
Aerosols (kg) 1.6746E-03

RB to Environment Transport Group Inventory:

Time (h) = 2.2000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.1186E+21
Elemental I (atoms)	5.2868E+17	3.7099E+16
Organic I (atoms)	1.9806E+17	6.7674E+15
Aerosols (kg)	5.7597E-04	4.1382E-05

Environment Integral Nuclide Release:

Time (h) = 2.2000	Ci	kg	Atoms	Bq
Co-58	1.5815E-04	4.9737E-12	5.1642E+13	5.8517E+06
Co-60	1.8941E-04	1.6756E-10	1.6818E+15	7.0082E+06
Kr-85	1.5036E+02	3.8323E-04	2.7152E+21	5.5632E+12
Kr-85m	1.8876E+03	2.2937E-07	1.6251E+18	6.9842E+13
Kr-87	1.9373E+03	6.8395E-08	4.7343E+17	7.1682E+13
Kr-88	4.3978E+03	3.5072E-07	2.4001E+18	1.6272E+14
Rb-86	3.7194E-02	4.5711E-10	3.2009E+15	1.3762E+09
Sr-89	2.6803E-01	9.2259E-09	6.2426E+16	9.9172E+09
Sr-90	3.5275E-02	2.5860E-07	1.7303E+18	1.3052E+09
Sr-91	2.9583E-01	8.1610E-11	5.4007E+14	1.0946E+10
Sr-92	2.2889E-01	1.8210E-11	1.1920E+14	8.4691E+09
Y-90	5.9578E-04	1.0951E-12	7.3273E+12	2.2044E+07
Y-91	3.4397E-03	1.4026E-10	9.2819E+14	1.2727E+08
Y-92	3.0507E-02	3.1704E-12	2.0753E+13	1.1287E+09
Y-93	3.4305E-03	1.0282E-12	6.6582E+12	1.2693E+08
Zr-95	4.1537E-03	1.9335E-10	1.2256E+15	1.5369E+08
Zr-97	3.7604E-03	1.9671E-12	1.2212E+13	1.3914E+08
Nb-95	4.1650E-03	1.0651E-10	6.7520E+14	1.5410E+08
Mo-99	5.2285E-02	1.0901E-10	6.6313E+14	1.9345E+09
Tc-99m	4.6907E-02	8.9207E-12	5.4264E+13	1.7356E+09
Ru-103	4.6107E-02	1.4286E-09	8.3528E+15	1.7060E+09
Ru-105	2.5465E-02	3.7882E-12	2.1727E+13	9.4219E+08
Ru-106	2.0077E-02	6.0012E-09	3.4094E+16	7.4287E+08
Rh-105	3.0779E-02	3.6466E-11	2.0915E+14	1.1388E+09
Sb-127	5.2340E-02	1.9599E-10	9.2937E+14	1.9366E+09
Sb-129	1.2579E-01	2.2369E-11	1.0443E+14	4.6542E+09
Te-127	5.2338E-02	1.9832E-11	9.4038E+13	1.9365E+09
Te-127m	8.9845E-03	9.5250E-10	4.5166E+15	3.3243E+08
Te-129	1.3832E-01	6.6050E-12	3.0834E+13	5.1179E+09
Te-129m	2.9605E-02	9.8273E-10	4.5877E+15	1.0954E+09
Te-131m	1.0719E-01	1.3443E-10	6.1797E+14	3.9662E+09
Te-132	7.8742E-01	2.5937E-09	1.1833E+16	2.9134E+10
I-131	1.5927E+01	1.2847E-07	5.9059E+17	5.8931E+11
I-132	2.0417E+01	1.9780E-09	9.0239E+15	7.5542E+11
I-133	3.2404E+01	2.8605E-08	1.2952E+17	1.1989E+12
I-134	2.3294E+01	8.7321E-10	3.9243E+15	8.6190E+11
I-135	2.9053E+01	8.2729E-09	3.6904E+16	1.0750E+12
Xe-133	1.6009E+04	8.5528E-05	3.8726E+20	5.9234E+14
Xe-135	6.5037E+03	2.5467E-06	1.1361E+19	2.4064E+14
Cs-134	4.0733E+00	3.1482E-06	1.4149E+19	1.5071E+11
Cs-136	1.2167E+00	1.6601E-08	7.3509E+16	4.5017E+10
Cs-137	3.2779E+00	3.7685E-05	1.6565E+20	1.2128E+11
Ba-139	1.8938E-01	1.1578E-11	5.0160E+13	7.0070E+09
Ba-140	4.1247E-01	5.6342E-09	2.4235E+16	1.5261E+10
La-140	8.6301E-03	1.5527E-11	6.6788E+13	3.1931E+08
La-141	2.9132E-03	5.1512E-13	2.2001E+12	1.0779E+08
La-142	1.8396E-03	1.2851E-13	5.4499E+11	6.8065E+07
Ce-141	9.7663E-03	3.4276E-10	1.4639E+15	3.6135E+08
Ce-143	9.1172E-03	1.3729E-11	5.7817E+13	3.3734E+08
Ce-144	7.8444E-03	2.4595E-09	1.0286E+16	2.9024E+08
Pr-143	3.6756E-03	5.4583E-11	2.2987E+14	1.3600E+08
Nd-147	1.5252E-03	1.8853E-11	7.7237E+13	5.6433E+07
Np-239	1.0893E-01	4.6954E-10	1.1831E+15	4.0304E+09
Pu-238	3.1673E-05	1.8501E-09	4.6813E+15	1.1719E+06
Pu-239	2.7745E-06	4.4638E-08	1.1248E+17	1.0266E+05
Pu-240	5.1960E-06	2.2803E-08	5.7217E+16	1.9225E+05
Pu-241	1.1199E-03	1.0872E-08	2.7166E+16	4.1437E+07

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Am-241                 7.5042E-07  2.1864E-10  5.4635E+14  2.7765E+04
Cm-242                 1.9039E-04  5.7446E-11  1.4295E+14  7.0446E+06
Cm-244                 1.2586E-05  1.5557E-10  3.8397E+14  4.6569E+05

Environment Transport Group Inventory:

                         Total      Release
Time (h) =   2.2000     Release     Rate/s
Noble gases (atoms)    3.1183E+21  3.9372E+17
Elemental I (atoms)    3.7071E+16  4.6807E+12
Organic I (atoms)      6.7578E+15  8.5325E+11
Aerosols (kg)          4.1379E-05  5.2247E-09
Dose Effective (Ci) I-131 (Thyroid)            2.2307E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      2.8139E+01
Total I  (Ci)                                  1.2110E+02

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.2000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.1186E+21
Elemental I (atoms)    5.2868E+17  3.7099E+16
Organic I (atoms)      1.9806E+17  6.7674E+15
Aerosols (kg)          5.7597E-04  4.1382E-05

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   2.2000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2980E+16
Elemental I (atoms)    0.0000E+00  7.2800E+13
Organic I (atoms)      0.0000E+00  2.2525E+12
Aerosols (kg)          0.0000E+00  8.2696E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   2.2000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2220E+15
Elemental I (atoms)    5.8258E+09  1.8018E+08
Organic I (atoms)      2.3200E+09  7.1754E+07
Aerosols (kg)          6.3261E-12  1.9565E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   2.2000     Filtered   Transported
Noble gases (atoms)    1.0475E+16  0.0000E+00
Elemental I (atoms)    5.7699E+13  0.0000E+00
Organic I (atoms)      1.7848E+12  0.0000E+00
Aerosols (kg)          6.6390E-08  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   2.2000       Ci           kg         Atoms      Decay
Co-58                  1.9606E-11  6.1660E-19  6.4021E+06  1.8211E+03
Co-60                  2.3487E-11  2.0777E-17  2.0854E+08  2.1811E+03
Kr-85                  1.7945E-04  4.5739E-10  3.2406E+15  7.5821E+10
Kr-85m                 2.1044E-03  2.5572E-13  1.8117E+12  1.0717E+12
Kr-87                  1.7894E-03  6.3173E-14  4.3728E+11  1.5063E+12
Kr-88                  4.7061E-03  3.7531E-13  2.5684E+12  2.6785E+12
Rb-86                  1.4754E-05  1.8132E-13  1.2697E+12  8.9337E+09
Sr-89                  3.3225E-08  1.1436E-15  7.7384E+09  3.0863E+06
Sr-90                  4.3740E-09  3.2066E-14  2.1456E+11  4.0620E+05
Sr-91                  3.5242E-08  9.7220E-18  6.4338E+07  3.3865E+06
Sr-92                  2.4566E-08  1.9545E-18  1.2794E+07  2.5787E+06
Y-90                   9.6521E-11  1.7741E-19  1.1871E+06  7.4159E+03
Y-91                   4.3006E-10  1.7536E-17  1.1605E+08  3.9702E+04
Y-92                   5.8933E-09  6.1246E-19  4.0090E+06  4.1450E+05
Y-93                   4.0966E-10  1.2279E-19  7.9509E+05  3.9285E+04
Zr-95                  5.1493E-10  2.3969E-17  1.5194E+08  4.7829E+04
Zr-97                  4.5595E-10  2.3851E-19  1.4808E+06  4.3160E+04
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Nb-95	5.1645E-10	1.3207E-17	8.3723E+07	4.7960E+04
Mo-99	6.4463E-09	1.3441E-17	8.1759E+07	6.0157E+05
Tc-99m	5.8110E-09	1.1051E-18	6.7224E+06	5.3722E+05
Ru-103	5.7150E-09	1.7708E-16	1.0353E+09	5.3091E+05
Ru-105	2.8950E-09	4.3068E-19	2.4701E+06	2.8945E+05
Ru-106	2.4895E-09	7.4411E-16	4.2275E+09	2.3120E+05
Rh-105	3.8090E-09	4.5127E-18	2.5882E+07	3.5409E+05
Sb-127	6.4637E-09	2.4204E-17	1.1477E+08	6.0236E+05
Sb-129	1.4265E-08	2.5368E-18	1.1843E+07	1.4293E+06
Te-127	6.4875E-09	2.4582E-18	1.1656E+07	6.0059E+05
Te-127m	1.1141E-09	1.1811E-16	5.6006E+08	1.0346E+05
Te-129	1.6363E-08	7.8136E-19	3.6476E+06	1.5455E+06
Te-129m	3.6709E-09	1.2185E-16	5.6885E+08	3.4090E+05
Te-131m	1.3126E-08	1.6460E-17	7.5669E+07	1.2321E+06
Te-132	9.7170E-08	3.2007E-16	1.4602E+09	9.0610E+06
I-131	6.0312E-03	4.8649E-11	2.2364E+14	3.6612E+12
I-132	4.6881E-03	4.5418E-13	2.0721E+12	4.1574E+12
I-133	1.1757E-02	1.0378E-11	4.6993E+13	7.4043E+12
I-134	2.5329E-03	9.4949E-14	4.2671E+11	4.4049E+12
I-135	9.4926E-03	2.7030E-12	1.2058E+13	6.5384E+12
Xe-133	1.9149E-02	1.0230E-10	4.6320E+14	8.1097E+12
Xe-135	8.3646E-03	3.2755E-12	1.4611E+13	3.4999E+12
Cs-134	1.6194E-03	1.2516E-09	5.6249E+15	9.7873E+11
Cs-136	4.8216E-04	6.5787E-12	2.9131E+13	2.9219E+11
Cs-137	1.3032E-03	1.4983E-08	6.5859E+16	7.8762E+11
Ba-139	1.7490E-08	1.0693E-18	4.6326E+06	2.0825E+06
Ba-140	5.1083E-08	6.9777E-16	3.0015E+09	4.7489E+06
La-140	1.4885E-09	2.6779E-18	1.1519E+07	1.0965E+05
La-141	3.2738E-10	5.7889E-20	2.4724E+05	3.3055E+04
La-142	1.7565E-10	1.2270E-20	5.2038E+04	2.0340E+04
Ce-141	1.2106E-09	4.2488E-17	1.8147E+08	1.1245E+05
Ce-143	1.1177E-09	1.6830E-18	7.0876E+06	1.0481E+05
Ce-144	9.7264E-10	3.0495E-16	1.2753E+09	9.0330E+04
Pr-143	4.5646E-10	6.7786E-18	2.8547E+07	4.2339E+04
Nd-147	1.8886E-10	2.3345E-18	9.5636E+06	1.7560E+04
Np-239	1.3417E-08	5.7836E-17	1.4573E+08	1.2531E+06
Pu-238	3.9275E-12	2.2941E-16	5.8048E+08	3.6473E+02
Pu-239	3.4407E-13	5.5355E-15	1.3948E+10	3.1950E+01
Pu-240	6.4430E-13	2.8275E-15	7.0949E+09	5.9834E+01
Pu-241	1.3887E-10	1.3481E-15	3.3686E+09	1.2896E+04
Am-241	9.3064E-14	2.7115E-17	6.7756E+07	8.6416E+00
Cm-242	2.3606E-11	7.1226E-18	1.7725E+07	2.1924E+03
Cm-244	1.5607E-12	1.9291E-17	4.7611E+07	1.4493E+02

CR Transport Group Inventory:

Time (h) = 2.2000	Atmosphere	Sump	
Noble gases (atoms)	3.7232E+15	0.0000E+00	
Elemental I (atoms)	1.3832E+13	0.0000E+00	
Organic I (atoms)	4.2852E+11	0.0000E+00	
Aerosols (kg)	1.6300E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8998E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5579E-12
Total I (Ci)			3.4502E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.2000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2980E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2525E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.2000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2220E+15
Elemental I (atoms)	5.8258E+09	1.8018E+08
Organic I (atoms)	2.3200E+09	7.1754E+07
Aerosols (kg)	6.3261E-12	1.9565E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.2000	Pathway Filtered	Transported
Noble gases (atoms)	1.0475E+16	0.0000E+00
Elemental I (atoms)	5.7699E+13	0.0000E+00
Organic I (atoms)	1.7848E+12	0.0000E+00
Aerosols (kg)	6.6390E-08	0.0000E+00

EAB Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.8232E-02	1.2649E-02	1.8938E-02
Accumulated dose (rem)	1.4801E-01	4.6353E-01	1.7016E-01

LPZ Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.1586E+00	8.0384E-01	1.2035E+00
Accumulated dose (rem)	1.1605E+01	3.9098E+01	1.3466E+01

CR Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.6959E-05	3.8466E-01	1.7069E-02
Accumulated dose (rem)	3.6108E-03	1.9126E+01	8.4735E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	5.9959E-01	1.8856E-08	1.9578E+17	4.3374E+15
Co-60	7.1828E-01	6.3543E-07	6.3777E+18	5.1938E+15
Kr-85	1.3588E+06	3.4635E+00	2.4538E+25	2.0507E+20
Kr-85m	1.5691E+07	1.9066E-03	1.3508E+22	2.6290E+21
Kr-87	1.2831E+07	4.5298E-04	3.1355E+21	2.8655E+21
Kr-88	3.4777E+07	2.7734E-03	1.8980E+22	6.2042E+21
Rb-86	2.0651E+01	2.5380E-07	1.7772E+18	3.1401E+17
Sr-89	1.0161E+03	3.4974E-05	2.3665E+20	7.3513E+18
Sr-90	1.3377E+02	9.8065E-04	6.5618E+21	9.6726E+17
Sr-91	1.0700E+03	2.9516E-07	1.9533E+18	8.3444E+18
Sr-92	7.3233E+02	5.8263E-08	3.8138E+17	6.9323E+18
Y-90	1.9583E+00	3.5993E-09	2.4084E+16	1.0125E+16
Y-91	1.2987E+01	5.2955E-07	3.5044E+18	9.3308E+16
Y-92	7.0606E+01	7.3377E-09	4.8031E+16	1.1165E+17
Y-93	1.2443E+01	3.7294E-09	2.4150E+16	9.6599E+16
Zr-95	1.5747E+01	7.3300E-07	4.6466E+18	1.1392E+17
Zr-97	1.3887E+01	7.2644E-09	4.5100E+16	1.0476E+17
Nb-95	1.5794E+01	4.0392E-07	2.5605E+18	1.1421E+17
Mo-99	1.9694E+02	4.1062E-07	2.4978E+18	1.4395E+18
Tc-99m	1.7768E+02	3.3790E-08	2.0554E+17	1.2819E+18
Ru-103	1.7477E+02	5.4151E-06	3.1660E+19	1.2647E+18
Ru-105	8.7165E+01	1.2967E-08	7.4371E+16	7.4184E+17
Ru-106	7.6134E+01	2.2757E-05	1.2929E+20	5.5056E+17
Rh-105	1.1643E+02	1.3794E-07	7.9116E+17	8.4443E+17
Sb-127	1.9753E+02	7.3967E-07	3.5074E+18	1.4394E+18
Sb-129	4.2933E+02	7.6347E-08	3.5641E+17	3.6707E+18
Te-127	1.9839E+02	7.5172E-08	3.5645E+17	1.4318E+18
Te-127m	3.4071E+01	3.6121E-06	1.7128E+19	2.4636E+17
Te-129	4.9568E+02	2.3669E-08	1.1049E+17	3.8400E+18
Te-129m	1.1226E+02	3.7265E-06	1.7397E+19	8.1179E+17
Te-131m	4.0049E+02	5.0224E-07	2.3088E+18	2.9657E+18
Te-132	2.9691E+03	9.7797E-06	4.4617E+19	2.1666E+19
I-131	4.2146E+04	3.3995E-04	1.5628E+21	1.4910E+20
I-132	5.4881E+04	5.3168E-06	2.4257E+19	2.1209E+20
I-133	8.1829E+04	7.2235E-05	3.2708E+20	3.0273E+20
I-134	1.6344E+04	6.1266E-07	2.7534E+18	2.0561E+20
I-135	6.5599E+04	1.8679E-05	8.3325E+19	2.7022E+20
Xe-133	1.4450E+08	7.7198E-01	3.4955E+24	2.1867E+22
Xe-135	5.8781E+07	2.3018E-02	1.0268E+23	9.1166E+21
Cs-134	2.2670E+03	1.7521E-03	7.8743E+21	3.4389E+19
Cs-136	6.7483E+02	9.2076E-06	4.0772E+19	1.0272E+19
Cs-137	1.8244E+03	2.0974E-02	9.2198E+22	2.7674E+19

Ba-139	5.0866E+02	3.1098E-08	1.3473E+17	6.3179E+18
Ba-140	1.5619E+03	2.1335E-05	9.1772E+19	1.1320E+19
La-140	2.7138E+01	4.8824E-08	2.1002E+17	1.2144E+17
La-141	9.8371E+00	1.7394E-09	7.4291E+15	8.5538E+16
La-142	5.1357E+00	3.5876E-10	1.5215E+15	6.0103E+16
Ce-141	3.7034E+01	1.2997E-06	5.5512E+18	2.6788E+17
Ce-143	3.4109E+01	5.1363E-08	2.1630E+17	2.5204E+17
Ce-144	2.9746E+01	9.3261E-06	3.9002E+19	2.1511E+17
Pr-143	1.3929E+01	2.0685E-07	8.7108E+17	1.0059E+17
Nd-147	5.7742E+00	7.1375E-08	2.9240E+17	4.1866E+16
Np-239	4.0984E+02	1.7666E-06	4.4513E+18	3.0012E+18
Pu-238	1.2011E-01	7.0160E-06	1.7753E+19	8.6851E+14
Pu-239	1.0523E-02	1.6929E-04	4.2657E+20	7.6077E+13
Pu-240	1.9704E-02	8.6473E-05	2.1698E+20	1.4248E+14
Pu-241	4.2469E+00	4.1227E-05	1.0302E+20	3.0709E+16
Am-241	2.8458E-03	8.2917E-07	2.0719E+18	2.0574E+13
Cm-242	7.2193E-01	2.1782E-07	5.4205E+17	5.2212E+15
Cm-244	4.7729E-02	5.8996E-07	1.4561E+18	3.4513E+14

DW Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	2.8172E+25	0.0000E+00	
Elemental I (atoms)	4.4293E+19	4.8566E+22	
Organic I (atoms)	1.4797E+21	0.0000E+00	
Aerosols (kg)	2.4245E-02	4.8963E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3657E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6888E-05
Total I (Ci)			2.6080E+05

DW to RB Transport Group Inventory:

Time (h) = 2.3000 Leakage Transport

Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5922E+18
Organic I (atoms)	1.1406E+18
Aerosols (kg)	1.6764E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.3000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3719E+17
Organic I (atoms)	0.0000E+00	5.4042E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.3000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3719E+17
Organic I (atoms)	0.0000E+00	5.4042E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	1.4884E-02	4.6807E-10	4.8599E+15	2.3628E+12
Co-60	1.7830E-02	1.5773E-08	1.5831E+17	2.8298E+12
Kr-85	7.5993E+02	1.9369E-03	1.3723E+22	7.4065E+16
Kr-85m	8.7749E+03	1.0663E-06	7.5544E+18	9.2681E+17
Kr-87	7.1757E+03	2.5333E-07	1.7535E+18	9.4451E+17
Kr-88	1.9449E+04	1.5510E-06	1.0614E+19	2.1555E+18
Rb-86	9.0134E-01	1.1077E-08	7.7569E+16	2.3176E+14
Sr-89	2.5222E+01	8.6814E-07	5.8743E+18	4.0044E+15
Sr-90	3.3205E+00	2.4343E-05	1.6288E+20	5.2700E+14
Sr-91	2.6560E+01	7.3268E-09	4.8487E+16	4.4191E+15
Sr-92	1.8179E+01	1.4463E-09	9.4669E+15	3.4189E+15
Y-90	7.0394E-02	1.2939E-10	8.6576E+14	8.4676E+12
Y-91	3.2595E-01	1.3291E-08	8.7956E+16	5.1317E+13
Y-92	4.0615E+00	4.2209E-10	2.7629E+15	4.0279E+14
Y-93	3.0886E-01	9.2576E-11	5.9947E+14	5.1244E+13
Zr-95	3.9089E-01	1.8195E-08	1.1534E+17	6.2055E+13

Zr-97	3.4472E-01	1.8032E-10	1.1195E+15	5.6175E+13
Nb-95	3.9206E-01	1.0026E-08	6.3558E+16	6.2222E+13
Mo-99	4.8885E+00	1.0193E-08	6.2002E+16	7.8111E+14
Tc-99m	4.4105E+00	8.3877E-10	5.1022E+15	6.9721E+14
Ru-103	4.3382E+00	1.3442E-07	7.8590E+17	6.8884E+14
Ru-105	2.1637E+00	3.2188E-10	1.8461E+15	3.8035E+14
Ru-106	1.8899E+00	5.6488E-07	3.2093E+18	2.9996E+14
Rh-105	2.8902E+00	3.4242E-09	1.9639E+16	4.5950E+14
Sb-127	4.9033E+00	1.8361E-08	8.7063E+16	7.8195E+14
Sb-129	1.0657E+01	1.8952E-09	8.8472E+15	1.8789E+15
Te-127	4.9245E+00	1.8660E-09	8.8482E+15	7.7934E+14
Te-127m	8.4575E-01	8.9662E-08	4.2516E+17	1.3423E+14
Te-129	1.2304E+01	5.8753E-10	2.7428E+15	2.0191E+15
Te-129m	2.7867E+00	9.2503E-08	4.3183E+17	4.4228E+14
Te-131m	9.9412E+00	1.2467E-08	5.7311E+16	1.6014E+15
Te-132	7.3701E+01	2.4276E-07	1.1075E+18	1.1764E+16
I-131	4.3921E+02	3.5428E-06	1.6286E+19	1.0517E+17
I-132	4.4603E+02	4.3211E-08	1.9714E+17	1.2276E+17
I-133	8.5319E+02	7.5317E-07	3.4103E+18	2.1012E+17
I-134	1.7041E+02	6.3879E-09	2.8708E+16	9.4676E+16
I-135	6.8397E+02	1.9476E-07	8.6880E+17	1.8037E+17
Xe-133	8.0749E+04	4.3139E-04	1.9533E+21	7.8866E+18
Xe-135	3.2267E+04	1.2635E-05	5.6363E+19	3.2121E+18
Cs-134	9.8944E+01	7.6474E-05	3.4368E+20	2.5404E+16
Cs-136	2.9454E+01	4.0188E-07	1.7795E+18	7.5783E+15
Cs-137	7.9628E+01	9.1545E-04	4.0241E+21	2.0444E+16
Ba-139	1.2626E+01	7.7193E-10	3.3444E+15	2.8301E+15
Ba-140	3.8771E+01	5.2959E-07	2.2780E+18	6.1622E+15
La-140	1.0765E+00	1.9368E-09	8.3314E+15	1.2088E+14
La-141	2.4419E-01	4.3178E-11	1.8441E+14	4.3512E+13
La-142	1.2748E-01	8.9055E-12	3.7768E+13	2.7487E+13
Ce-141	9.1906E-01	3.2255E-08	1.3776E+17	1.4591E+14
Ce-143	8.4668E-01	1.2750E-09	5.3693E+15	1.3620E+14
Ce-144	7.3837E-01	2.3150E-07	9.6815E+17	1.1719E+14
Pr-143	3.4643E-01	5.1446E-09	2.1665E+16	5.4894E+13
Nd-147	1.4333E-01	1.7717E-09	7.2583E+15	2.2787E+13
Np-239	1.0173E+01	4.3852E-08	1.1049E+17	1.6274E+15
Pu-238	2.9815E-03	1.7416E-07	4.4067E+17	4.7319E+11
Pu-239	2.6120E-04	4.2023E-06	1.0589E+19	4.1451E+10
Pu-240	4.8912E-04	2.1465E-06	5.3860E+18	7.7627E+10
Pu-241	1.0542E-01	1.0234E-06	2.5572E+18	1.6732E+13
Am-241	7.0649E-05	2.0584E-08	5.1437E+16	1.1211E+10
Cm-242	1.7920E-02	5.4070E-09	1.3455E+16	2.8445E+12
Cm-244	1.1848E-03	1.4644E-08	3.6144E+16	1.8804E+11

RB Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	1.5753E+22	0.0000E+00	
Elemental I (atoms)	9.6773E+17	0.0000E+00	
Organic I (atoms)	8.9415E+17	0.0000E+00	
Aerosols (kg)	1.0314E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7996E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2147E-08
Total I (Ci)			2.5928E+03

DW to RB Transport Group Inventory:

Time (h) = 2.3000 Leakage Transport

Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5922E+18
Organic I (atoms)	1.1406E+18
Aerosols (kg)	1.6764E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.6243E+21
Elemental I (atoms)	5.6059E+17	3.8086E+16
Organic I (atoms)	2.2607E+17	7.6334E+15
Aerosols (kg)	6.0994E-04	4.2433E-05

Environment Integral Nuclide Release:

Time (h) = 2.3000	Ci	kg	Atoms	Bq
Co-58	1.7331E-04	5.4502E-12	5.6589E+13	6.4123E+06
Co-60	2.0756E-04	1.8362E-10	1.8430E+15	7.6798E+06
Kr-85	1.7474E+02	4.4540E-04	3.1556E+21	6.4656E+12
Kr-85m	2.1692E+03	2.6359E-07	1.8675E+18	8.0262E+13
Kr-87	2.1676E+03	7.6526E-08	5.2971E+17	8.0203E+13
Kr-88	5.0220E+03	4.0050E-07	2.7408E+18	1.8581E+14
Rb-86	3.8112E-02	4.6840E-10	3.2800E+15	1.4102E+09
Sr-89	2.9371E-01	1.0110E-08	6.8407E+16	1.0867E+10
Sr-90	3.8655E-02	2.8338E-07	1.8962E+18	1.4302E+09
Sr-91	3.2287E-01	8.9069E-11	5.8943E+14	1.1946E+10
Sr-92	2.4740E-01	1.9683E-11	1.2884E+14	9.1538E+09
Y-90	6.6747E-04	1.2268E-12	8.2091E+12	2.4697E+07
Y-91	3.7715E-03	1.5379E-10	1.0177E+15	1.3955E+08
Y-92	3.4645E-02	3.6004E-12	2.3568E+13	1.2819E+09
Y-93	3.7450E-03	1.1225E-12	7.2685E+12	1.3856E+08
Zr-95	4.5516E-03	2.1187E-10	1.3431E+15	1.6841E+08
Zr-97	4.1114E-03	2.1507E-12	1.3352E+13	1.5212E+08
Nb-95	4.5641E-03	1.1672E-10	7.3990E+14	1.6887E+08
Mo-99	5.7261E-02	1.1939E-10	7.2625E+14	2.1187E+09
Tc-99m	5.1397E-02	9.7746E-12	5.9458E+13	1.9017E+09
Ru-103	5.0524E-02	1.5655E-09	9.1529E+15	1.8694E+09
Ru-105	2.7667E-02	4.1159E-12	2.3606E+13	1.0237E+09
Ru-106	2.2001E-02	6.5763E-09	3.7362E+16	8.1405E+08
Rh-105	3.3722E-02	3.9952E-11	2.2914E+14	1.2477E+09
Sb-127	5.7332E-02	2.1469E-10	1.0180E+15	2.1213E+09
Sb-129	1.3664E-01	2.4298E-11	1.1343E+14	5.0557E+09
Te-127	5.7351E-02	2.1731E-11	1.0305E+14	2.1220E+09
Te-127m	9.8455E-03	1.0438E-09	4.9494E+15	3.6428E+08
Te-129	1.5085E-01	7.2031E-12	3.3626E+13	5.5814E+09
Te-129m	3.2442E-02	1.0769E-09	5.0273E+15	1.2004E+09
Te-131m	1.1731E-01	1.4712E-10	6.7632E+14	4.3406E+09
Te-132	8.6245E-01	2.8408E-09	1.2960E+16	3.1911E+10
I-131	1.6374E+01	1.3207E-07	6.0714E+17	6.0583E+11
I-132	2.0870E+01	2.0218E-09	9.2241E+15	7.7218E+11
I-133	3.3271E+01	2.9370E-08	1.3299E+17	1.2310E+12
I-134	2.3468E+01	8.7971E-10	3.9535E+15	8.6830E+11
I-135	2.9748E+01	8.4708E-09	3.7787E+16	1.1007E+12
Xe-133	1.8601E+04	9.9373E-05	4.4995E+20	6.8823E+14
Xe-135	7.5380E+03	2.9517E-06	1.3167E+19	2.7890E+14
Cs-134	4.1741E+00	3.2261E-06	1.4499E+19	1.5444E+11
Cs-136	1.2467E+00	1.7010E-08	7.5322E+16	4.6127E+10
Cs-137	3.3590E+00	3.8617E-05	1.6975E+20	1.2428E+11
Ba-139	2.0223E-01	1.2364E-11	5.3565E+13	7.4826E+09
Ba-140	4.5194E-01	6.1733E-09	2.6555E+16	1.6722E+10
La-140	9.7267E-03	1.7499E-11	7.5274E+13	3.5989E+08
La-141	3.1618E-03	5.5907E-13	2.3878E+12	1.1699E+08
La-142	1.9694E-03	1.3757E-13	5.8344E+11	7.2867E+07
Ce-141	1.0702E-02	3.7560E-10	1.6042E+15	3.9597E+08
Ce-143	9.9791E-03	1.5027E-11	6.3283E+13	3.6923E+08
Ce-144	8.5961E-03	2.6951E-09	1.1271E+16	3.1806E+08
Pr-143	4.0283E-03	5.9821E-11	2.5192E+14	1.4905E+08
Nd-147	1.6711E-03	2.0657E-11	8.4626E+13	6.1832E+07
Np-239	1.1929E-01	5.1419E-10	1.2956E+15	4.4136E+09
Pu-238	3.4709E-05	2.0274E-09	5.1300E+15	1.2842E+06
Pu-239	3.0405E-06	4.8916E-08	1.2326E+17	1.1250E+05
Pu-240	5.6939E-06	2.4988E-08	6.2700E+16	2.1068E+05
Pu-241	1.2272E-03	1.1914E-08	2.9770E+16	4.5408E+07
Am-241	8.2234E-07	2.3960E-10	5.9871E+14	3.0427E+04
Cm-242	2.0864E-04	6.2951E-11	1.5665E+14	7.7196E+06
Cm-244	1.3792E-05	1.7048E-10	4.2076E+14	5.1032E+05

Environment Transport Group Inventory:

Time (h) = 2.3000	Total Release	Release Rate/s
Noble gases (atoms)	3.6238E+21	4.3766E+17
Elemental I (atoms)	3.8056E+16	4.5962E+12
Organic I (atoms)	7.6224E+15	9.2058E+11
Aerosols (kg)	4.2430E-05	5.1244E-09

Dose Effective (Ci) I-131 (Thyroid) 2.2921E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid) 2.8895E+01
Total I (Ci) 1.2373E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.6243E+21
Elemental I (atoms)	5.6059E+17	3.8086E+16
Organic I (atoms)	2.2607E+17	7.6334E+15
Aerosols (kg)	6.0994E-04	4.2433E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3069E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2527E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4209E+15
Elemental I (atoms)	6.2022E+09	1.9182E+08
Organic I (atoms)	2.6505E+09	8.1973E+07
Aerosols (kg)	6.7270E-12	2.0805E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	1.0762E+16	0.0000E+00
Elemental I (atoms)	5.8727E+13	0.0000E+00
Organic I (atoms)	1.8167E+12	0.0000E+00
Aerosols (kg)	6.7601E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	2.0869E-11	6.5630E-19	6.8144E+06	2.0991E+03
Co-60	2.5000E-11	2.2116E-17	2.2198E+08	2.5141E+03
Kr-85	1.7946E-04	4.5740E-10	3.2406E+15	7.8212E+10
Kr-85m	2.0722E-03	2.5180E-13	1.7840E+12	1.0996E+12
Kr-87	1.6945E-03	5.9823E-14	4.1409E+11	1.5295E+12
Kr-88	4.5928E-03	3.6627E-13	2.5065E+12	2.7404E+12
Rb-86	1.3655E-05	1.6782E-13	1.1752E+12	9.1157E+09
Sr-89	3.5365E-08	1.2173E-15	8.2366E+09	3.5574E+06
Sr-90	4.6559E-09	3.4132E-14	2.2839E+11	4.6822E+05
Sr-91	3.7241E-08	1.0273E-17	6.7986E+07	3.8844E+06
Sr-92	2.5489E-08	2.0279E-18	1.3274E+07	2.9226E+06
Y-90	1.0651E-10	1.9577E-19	1.3099E+06	8.7682E+03
Y-91	4.5833E-10	1.8689E-17	1.2368E+08	4.5797E+04
Y-92	6.5321E-09	6.7885E-19	4.4436E+06	4.9556E+05
Y-93	4.3307E-10	1.2981E-19	8.4055E+05	4.5073E+04
Zr-95	5.4808E-10	2.5513E-17	1.6173E+08	5.5130E+04
Zr-97	4.8335E-10	2.5284E-19	1.5697E+06	4.9612E+04
Nb-95	5.4973E-10	1.4059E-17	8.9119E+07	5.5282E+04
Mo-99	6.8545E-09	1.4292E-17	8.6936E+07	6.9292E+05
Tc-99m	6.1842E-09	1.1761E-18	7.1541E+06	6.1914E+05
Ru-103	6.0828E-09	1.8847E-16	1.1020E+09	6.1194E+05
Ru-105	3.0338E-09	4.5133E-19	2.5885E+06	3.3018E+05
Ru-106	2.6499E-09	7.9206E-16	4.4999E+09	2.6649E+05
Rh-105	4.0525E-09	4.8012E-18	2.7537E+07	4.0804E+05
Sb-127	6.8751E-09	2.5745E-17	1.2208E+08	6.9397E+05
Sb-129	1.4943E-08	2.6573E-18	1.2405E+07	1.6299E+06
Te-127	6.9050E-09	2.6164E-18	1.2407E+07	6.9223E+05
Te-127m	1.1859E-09	1.2572E-16	5.9615E+08	1.1925E+05
Te-129	1.7253E-08	8.2381E-19	3.8458E+06	1.7707E+06

Te-129m	3.9074E-09	1.2970E-16	6.0550E+08	3.9295E+05
Te-131m	1.3939E-08	1.7481E-17	8.0360E+07	1.4180E+06
Te-132	1.0334E-07	3.4039E-16	1.5529E+09	1.0438E+07
I-131	5.5810E-03	4.5018E-11	2.0695E+14	3.7355E+12
I-132	4.2109E-03	4.0795E-13	1.8612E+12	4.2143E+12
I-133	1.0847E-02	9.5752E-12	4.3356E+13	7.5490E+12
I-134	2.1665E-03	8.1212E-14	3.6498E+11	4.4349E+12
I-135	8.6955E-03	2.4760E-12	1.1045E+13	6.6548E+12
Xe-133	1.9139E-02	1.0225E-10	4.6297E+14	8.3647E+12
Xe-135	8.3066E-03	3.2527E-12	1.4510E+13	3.6102E+12
Cs-134	1.4990E-03	1.1586E-09	5.2069E+15	9.9869E+11
Cs-136	4.4623E-04	6.0885E-12	2.6960E+13	2.9814E+11
Cs-137	1.2064E-03	1.3869E-08	6.0965E+16	8.0369E+11
Ba-139	1.7704E-08	1.0824E-18	4.6893E+06	2.3243E+06
Ba-140	5.4363E-08	7.4257E-16	3.1942E+09	5.4731E+06
La-140	1.6537E-09	2.9753E-18	1.2798E+07	1.3045E+05
La-141	3.4239E-10	6.0542E-20	2.5858E+05	3.7656E+04
La-142	1.7875E-10	1.2487E-20	5.2956E+04	2.2775E+04
Ce-141	1.2886E-09	4.5224E-17	1.9315E+08	1.2962E+05
Ce-143	1.1872E-09	1.7877E-18	7.5286E+06	1.2064E+05
Ce-144	1.0353E-09	3.2460E-16	1.3575E+09	1.0412E+05
Pr-143	4.8599E-10	7.2171E-18	3.0393E+07	4.8810E+04
Nd-147	2.0097E-10	2.4843E-18	1.0177E+07	2.0237E+04
Np-239	1.4265E-08	6.1488E-17	1.5493E+08	1.4433E+06
Pu-238	4.1806E-12	2.4420E-16	6.1789E+08	4.2041E+02
Pu-239	3.6624E-13	5.8923E-15	1.4847E+10	3.6828E+01
Pu-240	6.8582E-13	3.0097E-15	7.5521E+09	6.8969E+01
Pu-241	1.4782E-10	1.4349E-15	3.5857E+09	1.4865E+04
Am-241	9.9064E-14	2.8863E-17	7.2124E+07	9.9611E+00
Cm-242	2.5127E-11	7.5815E-18	1.8866E+07	2.5271E+03
Cm-244	1.6612E-12	2.0534E-17	5.0680E+07	1.6706E+02

CR Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	3.7228E+15	0.0000E+00	
Elemental I (atoms)	1.2783E+13	0.0000E+00	
Organic I (atoms)	3.9619E+11	0.0000E+00	
Aerosols (kg)	1.5089E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.6803E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.2841E-12
Total I (Ci)			3.1501E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3069E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2527E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4209E+15
Elemental I (atoms)	6.2022E+09	1.9182E+08
Organic I (atoms)	2.6505E+09	8.1973E+07
Aerosols (kg)	6.7270E-12	2.0805E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	1.0762E+16	0.0000E+00
Elemental I (atoms)	5.8727E+13	0.0000E+00
Organic I (atoms)	1.8167E+12	0.0000E+00
Aerosols (kg)	6.7601E-08	0.0000E+00

EAB Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE

Delta dose (rem)	1.9252E-02	1.2287E-02	1.9937E-02
Accumulated dose (rem)	1.6727E-01	4.7582E-01	1.9010E-01

LPZ Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2235E+00	7.8084E-01	1.2670E+00
Accumulated dose (rem)	1.2829E+01	3.9879E+01	1.4733E+01

CR Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2589E-05	3.5555E-01	1.5781E-02
Accumulated dose (rem)	3.6634E-03	1.9481E+01	8.6314E-01

DW Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	4.4412E-01	1.3967E-08	1.4502E+17	4.3433E+15
Co-60	5.3206E-01	4.7069E-07	4.7242E+18	5.2009E+15
Kr-85	1.3587E+06	3.4631E+00	2.4536E+25	2.2317E+20
Kr-85m	1.5448E+07	1.8772E-03	1.3299E+22	2.8364E+21
Kr-87	1.2149E+07	4.2891E-04	2.9689E+21	3.0318E+21
Kr-88	3.3935E+07	2.7063E-03	1.8520E+22	6.6617E+21
Rb-86	1.5295E+01	1.8797E-07	1.3163E+18	3.1422E+17
Sr-89	7.5260E+02	2.5905E-05	1.7528E+20	7.3614E+18
Sr-90	9.9088E+01	7.2641E-04	4.8606E+21	9.6858E+17
Sr-91	7.8681E+02	2.1705E-07	1.4364E+18	8.3549E+18
Sr-92	5.2877E+02	4.2068E-08	2.7537E+17	6.9394E+18
Y-90	1.5563E+00	2.8606E-09	1.9141E+16	1.0145E+16
Y-91	9.6357E+00	3.9291E-07	2.6002E+18	9.3437E+16
Y-92	6.1774E+01	6.4198E-09	4.2023E+16	1.1234E+17
Y-93	9.1537E+00	2.7437E-09	1.7766E+16	9.6722E+16
Zr-95	1.1664E+01	5.4294E-07	3.4418E+18	1.1407E+17
Zr-97	1.0245E+01	5.3590E-09	3.3271E+16	1.0490E+17
Nb-95	1.1700E+01	2.9920E-07	1.8966E+18	1.1436E+17
Mo-99	1.4573E+02	3.0384E-07	1.8483E+18	1.4415E+18
Tc-99m	1.3158E+02	2.5024E-08	1.5222E+17	1.2836E+18
Ru-103	1.2945E+02	4.0109E-06	2.3451E+19	1.2664E+18
Ru-105	6.3567E+01	9.4565E-09	5.4237E+16	7.4269E+17
Ru-106	5.6395E+01	1.6857E-05	9.5767E+19	5.5131E+17
Rh-105	8.6203E+01	1.0213E-07	5.8575E+17	8.4557E+17
Sb-127	1.4621E+02	5.4749E-07	2.5961E+18	1.4413E+18
Sb-129	3.1296E+02	5.5653E-08	2.5981E+17	3.6749E+18
Te-127	1.4694E+02	5.5678E-08	2.6402E+17	1.4338E+18
Te-127m	2.5238E+01	2.6756E-06	1.2687E+19	2.4670E+17
Te-129	3.6362E+02	1.7363E-08	8.1056E+16	3.8447E+18
Te-129m	8.3157E+01	2.7604E-06	1.2886E+19	8.1289E+17
Te-131m	2.9597E+02	3.7117E-07	1.7063E+18	2.9697E+18
Te-132	2.1974E+03	7.2379E-06	3.3021E+19	2.1695E+19
I-131	3.9527E+04	3.1883E-04	1.4657E+21	1.4962E+20
I-132	5.0028E+04	4.8466E-06	2.2111E+19	2.1276E+20
I-133	7.6517E+04	6.7546E-05	3.0584E+20	3.0375E+20
I-134	1.4168E+04	5.3110E-07	2.3868E+18	2.0581E+20
I-135	6.0903E+04	1.7342E-05	7.7361E+19	2.7103E+20
Xe-133	1.4441E+08	7.7148E-01	3.4932E+24	2.3791E+22
Xe-135	5.8329E+07	2.2841E-02	1.0189E+23	9.8965E+21
Cs-134	1.6792E+03	1.2979E-03	5.8328E+21	3.4412E+19
Cs-136	4.9977E+02	6.8190E-06	3.0195E+19	1.0278E+19
Cs-137	1.3514E+03	1.5537E-02	6.8295E+22	2.7692E+19
Ba-139	3.5831E+02	2.1906E-08	9.4905E+16	6.3228E+18
Ba-140	1.1567E+03	1.5800E-05	6.7964E+19	1.1336E+19
La-140	2.2059E+01	3.9686E-08	1.7071E+17	1.2171E+17
La-141	7.1594E+00	1.2659E-09	5.4069E+15	8.5635E+16
La-142	3.6370E+00	2.5407E-10	1.0775E+15	6.0153E+16
Ce-141	2.7431E+01	9.6271E-07	4.1118E+18	2.6825E+17
Ce-143	2.5213E+01	3.7967E-08	1.5989E+17	2.5238E+17
Ce-144	2.2034E+01	6.9082E-06	2.8890E+19	2.1540E+17
Pr-143	1.0321E+01	1.5327E-07	6.4545E+17	1.0072E+17
Nd-147	4.2761E+00	5.2857E-08	2.1654E+17	4.1923E+16
Np-239	3.0321E+02	1.3070E-06	3.2933E+18	3.0052E+18
Pu-238	8.8972E-02	5.1971E-06	1.3150E+19	8.6969E+14

Pu-239	7.7946E-03	1.2540E-04	3.1598E+20	7.6180E+13
Pu-240	1.4596E-02	6.4054E-05	1.6073E+20	1.4267E+14
Pu-241	3.1459E+00	3.0539E-05	7.6311E+19	3.0751E+16
Am-241	2.1081E-03	6.1422E-07	1.5348E+18	2.0602E+13
Cm-242	5.3476E-01	1.6135E-07	4.0151E+17	5.2283E+15
Cm-244	3.5355E-02	4.3701E-07	1.0786E+18	3.4560E+14

DW Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.8166E+25	0.0000E+00	
Elemental I (atoms)	4.4213E+19	4.8566E+22	
Organic I (atoms)	1.4771E+21	0.0000E+00	
Aerosols (kg)	1.7959E-02	4.8970E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.2793E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5795E-05
Total I (Ci)			2.4114E+05

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport
Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5950E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6777E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.4000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.6037E+21
Elemental I (atoms)	0.0000E+00	8.3804E+17
Organic I (atoms)	0.0000E+00	5.6871E+17
Aerosols (kg)	0.0000E+00	8.8234E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 2.4000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	9.6037E+21
Elemental I (atoms)	0.0000E+00	8.3804E+17
Organic I (atoms)	0.0000E+00	5.6871E+17
Aerosols (kg)	0.0000E+00	8.8234E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	1.4426E-02	4.5367E-10	4.7104E+15	2.5549E+12
Co-60	1.7282E-02	1.5288E-08	1.5345E+17	3.0600E+12
Kr-85	8.1847E+02	2.0862E-03	1.4780E+22	8.4967E+16
Kr-85m	9.3059E+03	1.1308E-06	8.0115E+18	1.0517E+18
Kr-87	7.3185E+03	2.5837E-07	1.7884E+18	1.0447E+18
Kr-88	2.0442E+04	1.6302E-06	1.1156E+19	2.4311E+18
Rb-86	8.7268E-01	1.0725E-08	7.5103E+16	2.4339E+14
Sr-89	2.4445E+01	8.4142E-07	5.6934E+18	4.3300E+15
Sr-90	3.2185E+00	2.3595E-05	1.5788E+20	5.6987E+14
Sr-91	2.5556E+01	7.0500E-09	4.6655E+16	4.7608E+15
Sr-92	1.7175E+01	1.3664E-09	8.9443E+15	3.6506E+15
Y-90	7.1596E-02	1.3160E-10	8.8054E+14	9.3754E+12
Y-91	3.1644E-01	1.2903E-08	8.5391E+16	5.5525E+13
Y-92	4.1961E+00	4.3608E-10	2.8545E+15	4.5465E+14
Y-93	2.9732E-01	8.9117E-11	5.7707E+14	5.5218E+13
Zr-95	3.7886E-01	1.7635E-08	1.1179E+17	6.7102E+13
Zr-97	3.3276E-01	1.7407E-10	1.0807E+15	6.0617E+13
Nb-95	3.8001E-01	9.7183E-09	6.1605E+16	6.7284E+13
Mo-99	4.7334E+00	9.8691E-09	6.0033E+16	8.4419E+14
Tc-99m	4.2740E+00	8.1282E-10	4.9443E+15	7.5383E+14
Ru-103	4.2046E+00	1.3028E-07	7.6170E+17	7.4484E+14
Ru-105	2.0647E+00	3.0716E-10	1.7617E+15	4.0807E+14
Ru-106	1.8318E+00	5.4752E-07	3.1106E+18	3.2435E+14
Rh-105	2.8000E+00	3.3173E-09	1.9026E+16	4.9677E+14
Sb-127	4.7490E+00	1.7783E-08	8.4325E+16	8.4523E+14
Sb-129	1.0165E+01	1.8077E-09	8.4388E+15	2.0153E+15
Te-127	4.7728E+00	1.8085E-09	8.5756E+15	8.4268E+14
Te-127m	8.1976E-01	8.6907E-08	4.1210E+17	1.4514E+14

Te-129	1.1811E+01	5.6397E-10	2.6328E+15	2.1733E+15
Te-129m	2.7010E+00	8.9659E-08	4.1856E+17	4.7826E+14
Te-131m	9.6135E+00	1.2056E-08	5.5422E+16	1.7296E+15
Te-132	7.1373E+01	2.3509E-07	1.0725E+18	1.2715E+16
I-131	4.2713E+02	3.4453E-06	1.5838E+19	1.1086E+17
I-132	4.2389E+02	4.1066E-08	1.8735E+17	1.2847E+17
I-133	8.2726E+02	7.3027E-07	3.3066E+18	2.2116E+17
I-134	1.5318E+02	5.7420E-09	2.5805E+16	9.6799E+16
I-135	6.5845E+02	1.8749E-07	8.3638E+17	1.8919E+17
Xe-133	8.6929E+04	4.6441E-04	2.1028E+21	9.0448E+18
Xe-135	3.4559E+04	1.3533E-05	6.0367E+19	3.6741E+18
Cs-134	9.5812E+01	7.4053E-05	3.3280E+20	2.6681E+16
Cs-136	2.8515E+01	3.8907E-07	1.7228E+18	7.9582E+15
Cs-137	7.7108E+01	8.8648E-04	3.8967E+21	2.1471E+16
Ba-139	1.1638E+01	7.1151E-10	3.0826E+15	2.9891E+15
Ba-140	3.7571E+01	5.1320E-07	2.2075E+18	6.6627E+15
La-140	1.1055E+00	1.9889E-09	8.5553E+15	1.3476E+14
La-141	2.3254E-01	4.1119E-11	1.7562E+14	4.6637E+13
La-142	1.1813E-01	8.2523E-12	3.4998E+13	2.9096E+13
Ce-141	8.9076E-01	3.1262E-08	1.3352E+17	1.5777E+14
Ce-143	8.1894E-01	1.2332E-09	5.1933E+15	1.4712E+14
Ce-144	7.1568E-01	2.2439E-07	9.3839E+17	1.2673E+14
Pr-143	3.3589E-01	4.9880E-09	2.1006E+16	5.9366E+13
Nd-147	1.3889E-01	1.7168E-09	7.0334E+15	2.4637E+13
Np-239	9.8486E+00	4.2452E-08	1.0697E+17	1.7586E+15
Pu-238	2.8899E-03	1.6881E-07	4.2713E+17	5.1169E+11
Pu-239	2.5318E-04	4.0732E-06	1.0263E+19	4.4824E+10
Pu-240	4.7409E-04	2.0805E-06	5.2205E+18	8.3942E+10
Pu-241	1.0218E-01	9.9194E-07	2.4787E+18	1.8093E+13
Am-241	6.8480E-05	1.9952E-08	4.9857E+16	1.2123E+10
Cm-242	1.7369E-02	5.2408E-09	1.3042E+16	3.0758E+12
Cm-244	1.1484E-03	1.4194E-08	3.5033E+16	2.0333E+11

RB Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	1.6964E+22	0.0000E+00	
Elemental I (atoms)	9.3715E+17	0.0000E+00	
Organic I (atoms)	9.5418E+17	0.0000E+00	
Aerosols (kg)	9.9874E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7481E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.1485E-08
Total I (Ci)			2.4899E+03

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport
Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5950E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6777E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.1711E+21
Elemental I (atoms)	5.9148E+17	3.9041E+16
Organic I (atoms)	2.5605E+17	8.5609E+15
Aerosols (kg)	6.4284E-04	4.3450E-05

Environment Integral Nuclide Release:

Time (h) = 2.4000	Ci	kg	Atoms	Bq
Co-58	1.8800E-04	5.9122E-12	6.1386E+13	6.9559E+06
Co-60	2.2516E-04	1.9919E-10	1.9993E+15	8.3310E+06
Kr-85	2.0112E+02	5.1263E-04	3.6319E+21	7.4416E+12
Kr-85m	2.4692E+03	3.0004E-07	2.1257E+18	9.1359E+13
Kr-87	2.4035E+03	8.4853E-08	5.8735E+17	8.8930E+13
Kr-88	5.6808E+03	4.5304E-07	3.1003E+18	2.1019E+14
Rb-86	3.9002E-02	4.7933E-10	3.3565E+15	1.4431E+09
Sr-89	3.1860E-01	1.0967E-08	7.4205E+16	1.1788E+10
Sr-90	4.1933E-02	3.0741E-07	2.0569E+18	1.5515E+09

Sr-91	3.4890E-01	9.6249E-11	6.3695E+14	1.2909E+10
Sr-92	2.6489E-01	2.1074E-11	1.3795E+14	9.8010E+09
Y-90	7.4041E-04	1.3609E-12	9.1061E+12	2.7395E+07
Y-91	4.0938E-03	1.6693E-10	1.1047E+15	1.5147E+08
Y-92	3.8920E-02	4.0448E-12	2.6476E+13	1.4401E+09
Y-93	4.0477E-03	1.2132E-12	7.8562E+12	1.4977E+08
Zr-95	4.9374E-03	2.2983E-10	1.4569E+15	1.8269E+08
Zr-97	4.4503E-03	2.3279E-12	1.4453E+13	1.6466E+08
Nb-95	4.9511E-03	1.2662E-10	8.0264E+14	1.8319E+08
Mo-99	6.2082E-02	1.2944E-10	7.8738E+14	2.2970E+09
Tc-99m	5.5750E-02	1.0602E-11	6.4494E+13	2.0627E+09
Ru-103	5.4806E-02	1.6981E-09	9.9286E+15	2.0278E+09
Ru-105	2.9770E-02	4.4287E-12	2.5400E+13	1.1015E+09
Ru-106	2.3867E-02	7.1339E-09	4.0529E+16	8.8308E+08
Rh-105	3.6573E-02	4.3330E-11	2.4851E+14	1.3532E+09
Sb-127	6.2169E-02	2.3280E-10	1.1039E+15	2.3002E+09
Sb-129	1.4699E-01	2.6139E-11	1.2203E+14	5.4387E+09
Te-127	6.2212E-02	2.3573E-11	1.1178E+14	2.3018E+09
Te-127m	1.0680E-02	1.1323E-09	5.3691E+15	3.9517E+08
Te-129	1.6288E-01	7.7774E-12	3.6308E+13	6.0265E+09
Te-129m	3.5193E-02	1.1682E-09	5.4536E+15	1.3021E+09
Te-131m	1.2710E-01	1.5940E-10	7.3276E+14	4.7029E+09
Te-132	9.3513E-01	3.0802E-09	1.4053E+16	3.4600E+10
I-131	1.6808E+01	1.3557E-07	6.2324E+17	6.2189E+11
I-132	2.1300E+01	2.0636E-09	9.4144E+15	7.8811E+11
I-133	3.4112E+01	3.0113E-08	1.3635E+17	1.2621E+12
I-134	2.3623E+01	8.8554E-10	3.9797E+15	8.7406E+11
I-135	3.0418E+01	8.6614E-09	3.8637E+16	1.1255E+12
Xe-133	2.1402E+04	1.1434E-04	5.1772E+20	7.9188E+14
Xe-135	8.6506E+03	3.3874E-06	1.5111E+19	3.2007E+14
Cs-134	4.2717E+00	3.3016E-06	1.4838E+19	1.5805E+11
Cs-136	1.2757E+00	1.7407E-08	7.7077E+16	4.7202E+10
Cs-137	3.4376E+00	3.9521E-05	1.7372E+20	1.2719E+11
Ba-139	2.1408E-01	1.3088E-11	5.6705E+13	7.9211E+09
Ba-140	4.9020E-01	6.6960E-09	2.8803E+16	1.8137E+10
La-140	1.0853E-02	1.9526E-11	8.3990E+13	4.0156E+08
La-141	3.3986E-03	6.0095E-13	2.5667E+12	1.2575E+08
La-142	2.0897E-03	1.4598E-13	6.1908E+11	7.7318E+07
Ce-141	1.1609E-02	4.0743E-10	1.7402E+15	4.2954E+08
Ce-143	1.0813E-02	1.6283E-11	6.8572E+13	4.0009E+08
Ce-144	9.3249E-03	2.9236E-09	1.2227E+16	3.4502E+08
Pr-143	4.3703E-03	6.4901E-11	2.7331E+14	1.6170E+08
Nd-147	1.8126E-03	2.2406E-11	9.1789E+13	6.7066E+07
Np-239	1.2932E-01	5.5742E-10	1.4045E+15	4.7847E+09
Pu-238	3.7652E-05	2.1993E-09	5.5649E+15	1.3931E+06
Pu-239	3.2983E-06	5.3064E-08	1.3371E+17	1.2204E+05
Pu-240	6.1767E-06	2.7107E-08	6.8017E+16	2.2854E+05
Pu-241	1.3313E-03	1.2924E-08	3.2294E+16	4.9258E+07
Am-241	8.9208E-07	2.5992E-10	6.4949E+14	3.3007E+04
Cm-242	2.2633E-04	6.8288E-11	1.6993E+14	8.3741E+06
Cm-244	1.4962E-05	1.8494E-10	4.5644E+14	5.5359E+05

Environment Transport Group Inventory:

Time (h) = 2.4000	Total Release	Release Rate/s	
Noble gases (atoms)	4.1706E+21	4.8271E+17	
Elemental I (atoms)	3.9010E+16	4.5151E+12	
Organic I (atoms)	8.5484E+15	9.8940E+11	
Aerosols (kg)	4.3448E-05	5.0286E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.3517E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			2.9627E+01
Total I (Ci)			1.2626E+02

RB to Environment Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.1711E+21
Elemental I (atoms)	5.9148E+17	3.9041E+16
Organic I (atoms)	2.5605E+17	8.5609E+15
Aerosols (kg)	6.4284E-04	4.3450E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3164E+16
Elemental I (atoms)	0.0000E+00	7.2800E+13
Organic I (atoms)	0.0000E+00	2.2528E+12
Aerosols (kg)	0.0000E+00	8.2696E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6359E+15
Elemental I (atoms)	6.5668E+09	2.0310E+08
Organic I (atoms)	3.0043E+09	9.2916E+07
Aerosols (kg)	7.1152E-12	2.2006E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	1.1051E+16	0.0000E+00
Elemental I (atoms)	5.9677E+13	0.0000E+00
Organic I (atoms)	1.8461E+12	0.0000E+00
Aerosols (kg)	6.8723E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	2.1955E-11	6.9046E-19	7.1690E+06	2.3916E+03
Co-60	2.6302E-11	2.3268E-17	2.3354E+08	2.8645E+03
Kr-85	1.8055E-04	4.6019E-10	3.2604E+15	8.0617E+10
Kr-85m	2.0528E-03	2.4944E-13	1.7673E+12	1.1271E+12
Kr-87	1.6144E-03	5.6994E-14	3.9451E+11	1.5516E+12
Kr-88	4.5093E-03	3.5962E-13	2.4610E+12	2.8012E+12
Rb-86	1.2639E-05	1.5533E-13	1.0877E+12	9.2840E+09
Sr-89	3.7204E-08	1.2806E-15	8.6651E+09	4.0530E+06
Sr-90	4.8984E-09	3.5910E-14	2.4028E+11	5.3346E+05
Sr-91	3.8895E-08	1.0730E-17	7.1007E+07	4.4044E+06
Sr-92	2.6140E-08	2.0796E-18	1.3613E+07	3.2753E+06
Y-90	1.1625E-10	2.1367E-19	1.4297E+06	1.0247E+04
Y-91	4.8282E-10	1.9688E-17	1.3029E+08	5.2217E+04
Y-92	7.1532E-09	7.4340E-19	4.8661E+06	5.8481E+05
Y-93	4.5251E-10	1.3563E-19	8.7827E+05	5.1121E+04
Zr-95	5.7660E-10	2.6840E-17	1.7014E+08	6.2811E+04
Zr-97	5.0644E-10	2.6492E-19	1.6447E+06	5.6371E+04
Nb-95	5.7836E-10	1.4791E-17	9.3760E+07	6.2985E+04
Mo-99	7.2039E-09	1.5020E-17	9.1368E+07	7.8893E+05
Tc-99m	6.5048E-09	1.2371E-18	7.5250E+06	7.0531E+05
Ru-103	6.3991E-09	1.9828E-16	1.1593E+09	6.9718E+05
Ru-105	3.1424E-09	4.6748E-19	2.6812E+06	3.7237E+05
Ru-106	2.7879E-09	8.3330E-16	4.7342E+09	3.0363E+05
Rh-105	4.2614E-09	5.0487E-18	2.8956E+07	4.6478E+05
Sb-127	7.2278E-09	2.7065E-17	1.2834E+08	7.9028E+05
Sb-129	1.5471E-08	2.7512E-18	1.2843E+07	1.8377E+06
Te-127	7.2639E-09	2.7524E-18	1.3052E+07	7.8863E+05
Te-127m	1.2476E-09	1.3227E-16	6.2720E+08	1.3587E+05
Te-129	1.7975E-08	8.5833E-19	4.0070E+06	2.0054E+06
Te-129m	4.1108E-09	1.3646E-16	6.3703E+08	4.4770E+05
Te-131m	1.4631E-08	1.8349E-17	8.4350E+07	1.6131E+06
Te-132	1.0863E-07	3.5780E-16	1.6324E+09	1.1886E+07
I-131	5.1645E-03	4.1657E-11	1.9150E+14	3.8043E+12
I-132	3.7823E-03	3.6643E-13	1.6717E+12	4.2655E+12
I-133	1.0008E-02	8.8342E-12	4.0001E+13	7.6825E+12
I-134	1.8530E-03	6.9462E-14	3.1217E+11	4.4606E+12
I-135	7.9654E-03	2.2682E-12	1.0118E+13	6.7615E+12
Xe-133	1.9245E-02	1.0281E-10	4.6553E+14	8.6210E+12
Xe-135	8.2914E-03	3.2468E-12	1.4483E+13	3.7204E+12
Cs-134	1.3876E-03	1.0725E-09	4.8199E+15	1.0172E+12
Cs-136	4.1298E-04	5.6348E-12	2.4951E+13	3.0364E+11

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Cs-137                 1.1167E-03  1.2839E-08  5.6435E+16  8.1856E+11
Ba-139                 1.7713E-08  1.0829E-18  4.6916E+06  2.5663E+06
Ba-140                 5.7181E-08  7.8106E-16  3.3598E+09  6.2348E+06
La-140                 1.8170E-09  3.2690E-18  1.4062E+07  1.5336E+05
La-141                 3.5392E-10  6.2581E-20  2.6729E+05  4.2412E+04
La-142                 1.7979E-10  1.2560E-20  5.3265E+04  2.5225E+04
Ce-141                 1.3556E-09  4.7576E-17  2.0320E+08  1.4767E+05
Ce-143                 1.2464E-09  1.8769E-18  7.9040E+06  1.3726E+05
Ce-144                 1.0892E-09  3.4150E-16  1.4282E+09  1.1863E+05
Pr-143                 5.1143E-10  7.5949E-18  3.1984E+07  5.5619E+04
Nd-147                 2.1138E-10  2.6130E-18  1.0704E+07  2.3053E+04
Np-239                 1.4989E-08  6.4610E-17  1.6280E+08  1.6430E+06
Pu-238                 4.3983E-12  2.5691E-16  6.5007E+08  4.7900E+02
Pu-239                 3.8532E-13  6.1992E-15  1.5620E+10  4.1961E+01
Pu-240                 7.2153E-13  3.1665E-15  7.9454E+09  7.8580E+01
Pu-241                 1.5552E-10  1.5097E-15  3.7724E+09  1.6937E+04
Am-241                 1.0423E-13  3.0367E-17  7.5882E+07  1.1349E+01
Cm-242                 2.6435E-11  7.9762E-18  1.9849E+07  2.8792E+03
Cm-244                 1.7478E-12  2.1603E-17  5.3319E+07  1.9034E+02

CR Transport Group Inventory:
Time (h) =   2.4000    Atmosphere     Sump
Noble gases (atoms)    3.7450E+15  0.0000E+00
Elemental I (atoms)    1.1815E+13  0.0000E+00
Organic I (atoms)      3.6633E+11  0.0000E+00
Aerosols (kg)          1.3967E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.4774E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.0315E-12
Total I (Ci)                                   2.8773E-02

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.3164E+16
Elemental I (atoms)    0.0000E+00  7.2800E+13
Organic I (atoms)      0.0000E+00  2.2528E+12
Aerosols (kg)          0.0000E+00  8.2696E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.6359E+15
Elemental I (atoms)    6.5668E+09  2.0310E+08
Organic I (atoms)      3.0043E+09  9.2916E+07
Aerosols (kg)          7.1152E-12  2.2006E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    1.1051E+16  0.0000E+00
Elemental I (atoms)    5.9677E+13  0.0000E+00
Organic I (atoms)      1.8461E+12  0.0000E+00
Aerosols (kg)          6.8723E-08  0.0000E+00

EAB Doses:

Time (h) =   3.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3169E-01  6.6603E-02  1.3539E-01
Accumulated dose (rem)  2.9896E-01  5.4242E-01  3.2549E-01

LPZ Doses:

Time (h) =   3.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.3690E+00  4.2326E+00  8.6039E+00
Accumulated dose (rem)  2.1198E+01  4.4112E+01  2.3337E+01

CR Doses:

Time (h) =   3.0000    Whole Body   Thyroid       TEDE
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Delta dose (rem)	2.4752E-04	1.6344E+00	7.2610E-02
Accumulated dose (rem)	3.9109E-03	2.1116E+01	9.3575E-01

DW Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	7.3351E-02	2.3068E-09	2.3951E+16	4.3574E+15
Co-60	8.7895E-02	7.7756E-08	7.8043E+17	5.2178E+15
Kr-85	1.3579E+06	3.4611E+00	2.4521E+25	3.3172E+20
Kr-85m	1.4070E+07	1.7097E-03	1.2113E+22	4.0150E+21
Kr-87	8.7549E+06	3.0908E-04	2.1394E+21	3.8597E+21
Kr-88	2.9294E+07	2.3362E-03	1.5988E+22	9.1837E+21
Rb-86	2.5243E+00	3.1024E-08	2.1724E+17	3.1470E+17
Sr-89	1.2429E+02	4.2780E-06	2.8947E+19	7.3853E+18
Sr-90	1.6369E+01	1.2000E-04	8.0297E+20	9.7173E+17
Sr-91	1.2441E+02	3.4321E-08	2.2713E+17	8.3795E+18
Sr-92	7.4925E+01	5.9609E-09	3.9019E+16	6.9553E+18
Y-90	3.6152E-01	6.6448E-10	4.4462E+15	1.0200E+16
Y-91	1.6072E+00	6.5534E-08	4.3369E+17	9.3743E+16
Y-92	1.8125E+01	1.8836E-09	1.2330E+16	1.1473E+17
Y-93	1.4512E+00	4.3497E-10	2.8166E+15	9.7008E+16
Zr-95	1.9264E+00	8.9669E-08	5.6842E+17	1.1444E+17
Zr-97	1.6513E+00	8.6379E-10	5.3627E+15	1.0522E+17
Nb-95	1.9327E+00	4.9427E-08	3.1332E+17	1.1473E+17
Mo-99	2.3923E+01	4.9879E-08	3.0341E+17	1.4461E+18
Tc-99m	2.1704E+01	4.1277E-09	2.5108E+16	1.2878E+18
Ru-103	2.1375E+01	6.6230E-07	3.8723E+18	1.2705E+18
Ru-105	9.5622E+00	1.4225E-09	8.1587E+15	7.4464E+17
Ru-106	9.3160E+00	2.7846E-06	1.5820E+19	5.5310E+17
Rh-105	1.4191E+01	1.6813E-08	9.6431E+16	8.4831E+17
Sb-127	2.4045E+01	9.0039E-08	4.2695E+17	1.4460E+18
Sb-129	4.6956E+01	8.3501E-09	3.8981E+16	3.6845E+18
Te-127	2.4260E+01	9.1924E-09	4.3589E+16	1.4384E+18
Te-127m	4.1693E+00	4.4201E-07	2.0960E+18	2.4750E+17
Te-129	5.6490E+01	2.6974E-09	1.2592E+16	3.8558E+18
Te-129m	1.3736E+01	4.5596E-07	2.1286E+18	8.1554E+17
Te-131m	4.8221E+01	6.0473E-08	2.7800E+17	2.9790E+18
Te-132	3.6108E+02	1.1893E-06	5.4261E+18	2.1765E+19
I-131	3.3234E+04	2.6807E-04	1.2324E+21	1.5242E+20
I-132	3.5314E+04	3.4212E-06	1.5608E+19	2.1602E+20
I-133	6.3197E+04	5.5788E-05	2.5261E+20	3.0912E+20
I-134	7.4286E+03	2.7847E-07	1.2515E+18	2.0661E+20
I-135	4.8188E+04	1.3722E-05	6.1210E+19	2.7522E+20
Xe-133	1.4384E+08	7.6847E-01	3.4796E+24	3.5308E+22
Xe-135	5.5688E+07	2.1807E-02	9.7276E+22	1.4452E+22
Cs-134	2.7740E+02	2.1440E-04	9.6355E+20	3.4465E+19
Cs-136	8.2452E+01	1.1250E-06	4.9815E+18	1.0294E+19
Cs-137	2.2325E+02	2.5666E-03	1.1282E+22	2.7735E+19
Ba-139	4.3775E+01	2.6762E-09	1.1595E+16	6.3330E+18
Ba-140	1.9083E+02	2.6066E-06	1.1212E+19	1.1372E+19
La-140	5.5701E+00	1.0021E-08	4.3107E+16	1.2251E+17
La-141	1.0640E+00	1.8813E-10	8.0352E+14	8.5854E+16
La-142	4.5876E-01	3.2048E-11	1.3591E+14	6.0258E+16
Ce-141	4.5298E+00	1.5898E-07	6.7899E+17	2.6912E+17
Ce-143	4.1130E+00	6.1935E-09	2.6083E+16	2.5317E+17
Ce-144	3.6397E+00	1.1412E-06	4.7724E+18	2.1610E+17
Pr-143	1.7081E+00	2.5366E-08	1.0682E+17	1.0105E+17
Nd-147	7.0529E-01	8.7181E-09	3.5716E+16	4.2058E+16
Np-239	4.9723E+01	2.1433E-07	5.4005E+17	3.0148E+18
Pu-238	1.4698E-02	8.5856E-07	2.1724E+18	8.7252E+14
Pu-239	1.2878E-03	2.0718E-05	5.2203E+19	7.6428E+13
Pu-240	2.4112E-03	1.0582E-05	2.6552E+19	1.4314E+14
Pu-241	5.1970E-01	5.0450E-06	1.2606E+19	3.0851E+16
Am-241	3.4831E-04	1.0148E-07	2.5359E+17	2.0669E+13
Cm-242	8.8332E-02	2.6652E-08	6.6323E+16	5.2453E+15
Cm-244	5.8406E-03	7.2193E-08	1.7818E+17	3.4672E+14

DW Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump
Noble gases (atoms)	2.8128E+25	0.0000E+00
Elemental I (atoms)	4.3753E+19	4.8566E+22
Organic I (atoms)	1.4617E+21	0.0000E+00

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Aerosols (kg)          2.9667E-03  4.8985E+01
Dose Effective (Ci/cc) I-131 (Thyroid)          1.0681E-05
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.3075E-05
Total I (Ci)                                    1.8736E+05

DW to  RB Transport Group Inventory:
Time (h) =   3.0000  Leakage Transport

Noble gases (atoms)      3.1708E+22
Elemental I (atoms)      1.6115E+18
Organic I (atoms)        1.7846E+18
Aerosols (kg)            1.6808E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

Time (h) =   3.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.2833E+22
Elemental I (atoms)    0.0000E+00  8.4309E+17
Organic I (atoms)      0.0000E+00  7.3740E+17
Aerosols (kg)          0.0000E+00  8.8330E-04

DW to  MSL "A" Volume 3 Transport Group Inventory:

Time (h) =   3.0000    Pipe Walls  Transported
Noble gases (atoms)    0.0000E+00  1.2833E+22
Elemental I (atoms)    0.0000E+00  8.4309E+17
Organic I (atoms)      0.0000E+00  7.3740E+17
Aerosols (kg)          0.0000E+00  8.8330E-04

RB Compartment Nuclide Inventory:

Time (h) =   3.0000       Ci           kg          Atoms       Decay
Co-58                  1.1870E-02  3.7329E-10  3.8759E+15  3.5862E+12
Co-60                  1.4223E-02  1.2583E-08  1.2629E+17  4.2956E+12
Kr-85                  1.1313E+03  2.8835E-03  2.0430E+22  1.6537E+17
Kr-85m                 1.1722E+04  1.4244E-06  1.0092E+19  1.9228E+18
Kr-87                  7.2940E+03  2.5751E-07  1.7825E+18  1.6530E+18
Kr-88                  2.4406E+04  1.9464E-06  1.3320E+19  4.2924E+18
Rb-86                  7.1580E-01  8.7972E-09  6.1602E+16  3.0565E+14
Sr-89                  2.0112E+01  6.9227E-07  4.6842E+18  6.0775E+15
Sr-90                  2.6489E+00  1.9419E-05  1.2994E+20  7.9999E+14
Sr-91                  2.0133E+01  5.5538E-09  3.6754E+16  6.5498E+15
Sr-92                  1.2124E+01  9.6460E-10  6.3141E+15  4.7918E+15
Y-90                   7.5612E-02  1.3898E-10  9.2993E+14  1.5071E+13
Y-91                   2.6291E-01  1.0720E-08  7.0945E+16  7.8236E+13
Y-92                   4.5262E+00  4.7039E-10  3.0791E+15  7.9098E+14
Y-93                   2.3483E-01  7.0387E-11  4.5579E+14  7.6058E+13
Zr-95                  3.1173E-01  1.4510E-08  9.1983E+16  9.4186E+13
Zr-97                  2.6721E-01  1.3978E-10  8.6781E+14  8.4128E+13
Nb-95                  3.1276E-01  7.9984E-09  5.0702E+16  9.4453E+13
Mo-99                  3.8712E+00  8.0715E-09  4.9099E+16  1.1816E+15
Tc-99m                 3.5122E+00  6.6795E-10  4.0631E+15  1.0575E+15
Ru-103                 3.4590E+00  1.0717E-07  6.2662E+17  1.0454E+15
Ru-105                 1.5474E+00  2.3020E-10  1.3203E+15  5.4920E+14
Ru-106                 1.5075E+00  4.5061E-07  2.5600E+18  4.5532E+14
Rh-105                 2.2965E+00  2.7208E-09  1.5605E+16  6.9651E+14
Sb-127                 3.8910E+00  1.4570E-08  6.9090E+16  1.1840E+15
Sb-129                 7.5985E+00  1.3512E-09  6.3080E+15  2.7093E+15
Te-127                 3.9258E+00  1.4875E-09  7.0536E+15  1.1826E+15
Te-127m                6.7469E-01  7.1528E-08  3.3917E+17  2.0376E+14
Te-129                 9.1413E+00  4.3650E-10  2.0377E+15  2.9735E+15
Te-129m                2.2228E+00  7.3784E-08  3.4445E+17  6.7136E+14
Te-131m                7.8033E+00  9.7858E-09  4.4986E+16  2.4123E+15
Te-132                 5.8430E+01  1.9246E-07  8.7806E+17  1.7805E+16
I-131                  3.6080E+02  2.9103E-06  1.3379E+19  1.4183E+17
I-132                  3.1206E+02  3.0232E-08  1.3793E+17  1.5718E+17
I-133                  6.8640E+02  6.0593E-07  2.7436E+18  2.8064E+17
I-134                  8.0684E+01  3.0245E-09  1.3593E+16  1.0571E+17
I-135                  5.2338E+02  1.4903E-07  6.6482E+17  2.3556E+17
Xe-133                 1.1979E+05  6.3999E-04  2.8978E+21  1.7571E+19
Xe-135                 4.5964E+04  1.7999E-05  8.0289E+19  7.0047E+18
Cs-134                 7.8660E+01  6.0796E-05  2.7323E+20  3.3519E+16
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Cs-136	2.3380E+01	3.1900E-07	1.4126E+18	9.9922E+15
Cs-137	6.3305E+01	7.2780E-04	3.1992E+21	2.6975E+16
Ba-139	7.0837E+00	4.3307E-10	1.8763E+15	3.7109E+15
Ba-140	3.0880E+01	4.2180E-07	1.8144E+18	9.3472E+15
La-140	1.2164E+00	2.1885E-09	9.4139E+15	2.2438E+14
La-141	1.7217E-01	3.0444E-11	1.3003E+14	6.2441E+13
La-142	7.4238E-02	5.1860E-12	2.1994E+13	3.6531E+13
Ce-141	7.3283E-01	2.5719E-08	1.0985E+17	2.2145E+14
Ce-143	6.6557E-01	1.0022E-09	4.2207E+15	2.0532E+14
Ce-144	5.8899E-01	1.8466E-07	7.7227E+17	1.7790E+14
Pr-143	2.7694E-01	4.1127E-09	1.7320E+16	8.3397E+13
Nd-147	1.1413E-01	1.4108E-09	5.7796E+15	3.4560E+13
Np-239	8.0463E+00	3.4683E-08	8.7393E+16	2.4603E+15
Pu-238	2.3785E-03	1.3893E-07	3.5154E+17	7.1831E+11
Pu-239	2.0839E-04	3.3526E-06	8.4477E+18	6.2926E+10
Pu-240	3.9019E-04	1.7123E-06	4.2967E+18	1.1784E+11
Pu-241	8.4098E-02	8.1639E-07	2.0400E+18	2.5398E+13
Am-241	5.6370E-05	1.6424E-08	4.1041E+16	1.7020E+10
Cm-242	1.4294E-02	4.3128E-09	1.0732E+16	4.3177E+12
Cm-244	9.4514E-04	1.1682E-08	2.8833E+16	2.8544E+11

RB Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	2.3433E+22	0.0000E+00	
Elemental I (atoms)	7.7471E+17	0.0000E+00	
Organic I (atoms)	1.2706E+18	0.0000E+00	
Aerosols (kg)	8.2000E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.4667E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.7894E-08
Total I (Ci)			1.9633E+03

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	8.2432E+21
Elemental I (atoms)	7.5752E+17	4.4177E+16
Organic I (atoms)	4.7374E+17	1.5293E+16
Aerosols (kg)	8.1921E-04	4.8905E-05

Environment Integral Nuclide Release:

Time (h) = 3.0000	Ci	kg	Atoms	Bq
Co-58	2.6689E-04	8.3933E-12	8.7147E+13	9.8749E+06
Co-60	3.1969E-04	2.8281E-10	2.8386E+15	1.1828E+07
Kr-85	3.9765E+02	1.0135E-03	7.1808E+21	1.4713E+13
Kr-85m	4.5815E+03	5.5671E-07	3.9442E+18	1.6951E+14
Kr-87	3.8495E+03	1.3590E-07	9.4072E+17	1.4243E+14
Kr-88	1.0174E+04	8.1138E-07	5.5526E+18	3.7644E+14
Rb-86	4.3765E-02	5.3787E-10	3.7664E+15	1.6193E+09
Sr-89	4.5229E-01	1.5568E-08	1.0534E+17	1.6735E+10
Sr-90	5.9537E-02	4.3646E-07	2.9205E+18	2.2029E+09
Sr-91	4.8527E-01	1.3387E-10	8.8590E+14	1.7955E+10
Sr-92	3.5108E-01	2.7931E-11	1.8283E+14	1.2990E+10
Y-90	1.1950E-03	2.1964E-12	1.4697E+13	4.4215E+07
Y-91	5.8340E-03	2.3789E-10	1.5743E+15	2.1586E+08
Y-92	6.6114E-02	6.8709E-12	4.4975E+13	2.4462E+09
Y-93	5.6366E-03	1.6895E-12	1.0940E+13	2.0855E+08
Zr-95	7.0094E-03	3.2628E-10	2.0683E+15	2.5935E+08
Zr-97	6.2452E-03	3.2669E-12	2.0282E+13	2.3107E+08
Nb-95	7.0297E-03	1.7977E-10	1.1396E+15	2.6010E+08
Mo-99	8.7880E-02	1.8323E-10	1.1146E+15	3.2515E+09
Tc-99m	7.9107E-02	1.5044E-11	9.1515E+13	2.9270E+09
Ru-103	7.7798E-02	2.4105E-09	1.4094E+16	2.8785E+09

Ru-105	4.0483E-02	6.0224E-12	3.4541E+13	1.4979E+09
Ru-106	3.3886E-02	1.0129E-08	5.7543E+16	1.2538E+09
Rh-105	5.1859E-02	6.1440E-11	3.5238E+14	1.9188E+09
Sb-127	8.8078E-02	3.2982E-10	1.5639E+15	3.2589E+09
Sb-129	1.9966E-01	3.5505E-11	1.6575E+14	7.3873E+09
Te-127	8.8309E-02	3.3462E-11	1.5867E+14	3.2674E+09
Te-127m	1.5164E-02	1.6076E-09	7.6232E+15	5.6108E+08
Te-129	2.2530E-01	1.0758E-11	5.0222E+13	8.3361E+09
Te-129m	4.9966E-02	1.6586E-09	7.7429E+15	1.8487E+09
Te-131m	1.7928E-01	2.2482E-10	1.0335E+15	6.6332E+09
Te-132	1.3243E+00	4.3622E-09	1.9902E+16	4.9001E+10
I-131	1.9172E+01	1.5464E-07	7.1089E+17	7.0935E+11
I-132	2.3469E+01	2.2737E-09	1.0373E+16	8.6836E+11
I-133	3.8644E+01	3.4113E-08	1.5446E+17	1.4298E+12
I-134	2.4277E+01	9.1004E-10	4.0898E+15	8.9825E+11
I-135	3.3938E+01	9.6638E-09	4.3109E+16	1.2557E+12
Xe-133	4.2237E+04	2.2565E-04	1.0217E+21	1.5628E+15
Xe-135	1.6756E+04	6.5613E-06	2.9269E+19	6.1996E+14
Cs-134	4.7950E+00	3.7060E-06	1.6655E+19	1.7741E+11
Cs-136	1.4314E+00	1.9530E-08	8.6479E+16	5.2960E+10
Cs-137	3.8587E+00	4.4362E-05	1.9500E+20	1.4277E+11
Ba-139	2.6792E-01	1.6380E-11	7.0964E+13	9.9130E+09
Ba-140	6.9555E-01	9.5008E-09	4.0868E+16	2.5735E+10
La-140	1.8057E-02	3.2487E-11	1.3975E+14	6.6812E+08
La-141	4.5969E-03	8.1284E-13	3.4717E+12	1.7009E+08
La-142	2.6457E-03	1.8482E-13	7.8382E+11	9.7892E+07
Ce-141	1.6480E-02	5.7839E-10	2.4703E+15	6.0977E+08
Ce-143	1.5261E-02	2.2980E-11	9.6776E+13	5.6464E+08
Ce-144	1.3239E-02	4.1509E-09	1.7359E+16	4.8986E+08
Pr-143	6.2094E-03	9.2212E-11	3.8833E+14	2.2975E+08
Nd-147	2.5716E-03	3.1788E-11	1.3023E+14	9.5149E+07
Np-239	1.8296E-01	7.8866E-10	1.9872E+15	6.7696E+09
Pu-238	5.3459E-05	3.1226E-09	7.9012E+15	1.9780E+06
Pu-239	4.6832E-06	7.5345E-08	1.8985E+17	1.7328E+05
Pu-240	8.7698E-06	3.8487E-08	9.6572E+16	3.2448E+05
Pu-241	1.8902E-03	1.8349E-08	4.5851E+16	6.9938E+07
Am-241	1.2667E-06	3.6906E-10	9.2222E+14	4.6867E+04
Cm-242	3.2133E-04	9.6952E-11	2.4126E+14	1.1889E+07
Cm-244	2.1243E-05	2.6258E-10	6.4806E+14	7.8599E+05

Environment Transport Group Inventory:

Time (h) = 3.0000	Total Release	Release Rate/s	
Noble gases (atoms)	8.2422E+21	7.6317E+17	
Elemental I (atoms)	4.4138E+16	4.0868E+12	
Organic I (atoms)	1.5270E+16	1.4139E+12	
Aerosols (kg)	4.8902E-05	4.5280E-09	
Dose Effective (Ci) I-131 (Thyroid)			2.6750E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			3.3585E+01
Total I (Ci)			1.3950E+02

RB to Environment Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	8.2432E+21
Elemental I (atoms)	7.5752E+17	4.4177E+16
Organic I (atoms)	4.7374E+17	1.5293E+16
Aerosols (kg)	8.1921E-04	4.8905E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3876E+16
Elemental I (atoms)	0.0000E+00	7.2801E+13
Organic I (atoms)	0.0000E+00	2.2540E+12
Aerosols (kg)	0.0000E+00	8.2697E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.2376E+15
Elemental I (atoms)	8.5260E+09	2.6369E+08
Organic I (atoms)	5.5729E+09	1.7236E+08
Aerosols (kg)	9.1963E-12	2.8442E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 3.0000	Pathway Filtered	Transported
Noble gases (atoms)	1.2878E+16	0.0000E+00
Elemental I (atoms)	6.4044E+13	0.0000E+00
Organic I (atoms)	1.9817E+12	0.0000E+00
Aerosols (kg)	7.3902E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.5503E-11	8.0203E-19	8.3274E+06	4.3408E+03
Co-60	3.0559E-11	2.7034E-17	2.7134E+08	5.1999E+03
Kr-85	2.0405E-04	5.2008E-10	3.6847E+15	9.5982E+10
Kr-85m	2.1143E-03	2.5691E-13	1.8202E+12	1.2938E+12
Kr-87	1.3156E-03	4.6444E-14	3.2149E+11	1.6684E+12
Kr-88	4.4020E-03	3.5106E-13	2.4024E+12	3.1577E+12
Rb-86	7.9451E-06	9.7645E-14	6.8376E+11	1.0061E+10
Sr-89	4.3212E-08	1.4874E-15	1.0064E+10	7.3559E+06
Sr-90	5.6913E-09	4.1723E-14	2.7918E+11	9.6840E+05
Sr-91	4.3256E-08	1.1933E-17	7.8967E+07	7.7820E+06
Sr-92	2.6050E-08	2.0725E-18	1.3566E+07	5.4235E+06
Y-90	1.6716E-10	3.0724E-19	2.0558E+06	2.1539E+04
Y-91	5.6565E-10	2.3065E-17	1.5264E+08	9.5229E+04
Y-92	1.0168E-08	1.0567E-18	6.9168E+06	1.2708E+06
Y-93	5.0455E-10	1.5123E-19	9.7928E+05	9.0468E+04
Zr-95	6.6976E-10	3.1176E-17	1.9763E+08	1.1400E+05
Zr-97	5.7412E-10	3.0032E-19	1.8645E+06	1.0078E+05
Nb-95	6.7198E-10	1.7185E-17	1.0894E+08	1.1434E+05
Mo-99	8.3175E-09	1.7342E-17	1.0549E+08	1.4265E+06
Tc-99m	7.5462E-09	1.4351E-18	8.7298E+06	1.2792E+06
Ru-103	7.4317E-09	2.3027E-16	1.3463E+09	1.2652E+06
Ru-105	3.3246E-09	4.9459E-19	2.8366E+06	6.3846E+05
Ru-106	3.2390E-09	9.6815E-16	5.5003E+09	5.5117E+05
Rh-105	4.9341E-09	5.8457E-18	3.3527E+07	8.4225E+05
Sb-127	8.3600E-09	3.1305E-17	1.4844E+08	1.4306E+06
Sb-129	1.6326E-08	2.9032E-18	1.3553E+07	3.1460E+06
Te-127	8.4347E-09	3.1960E-18	1.5155E+07	1.4311E+06
Te-127m	1.4496E-09	1.5368E-16	7.2873E+08	2.4665E+05
Te-129	1.9640E-08	9.3784E-19	4.3781E+06	3.5154E+06
Te-129m	4.7757E-09	1.5853E-16	7.4006E+08	8.1268E+05
Te-131m	1.6766E-08	2.1025E-17	9.6654E+07	2.9031E+06
Te-132	1.2554E-07	4.1351E-16	1.8865E+09	2.1505E+07
I-131	3.2426E-03	2.6156E-11	1.2024E+14	4.1218E+12
I-132	1.9864E-03	1.9244E-13	8.7795E+11	4.4798E+12
I-133	6.1724E-03	5.4487E-12	2.4671E+13	8.2926E+12
I-134	7.2554E-04	2.7197E-14	1.2223E+11	4.5530E+12
I-135	4.7064E-03	1.3402E-12	5.9782E+12	7.2376E+12
Xe-133	2.1665E-02	1.1574E-10	5.2407E+14	1.0255E+13
Xe-135	8.8337E-03	3.4591E-12	1.5431E+13	4.4021E+12
Cs-134	8.7310E-04	6.7482E-10	3.0327E+15	1.1026E+12
Cs-136	2.5951E-04	3.5408E-12	1.5679E+13	3.2903E+11
Cs-137	7.0266E-04	8.0783E-09	3.5510E+16	8.8727E+11
Ba-139	1.5220E-08	9.3047E-19	4.0312E+06	3.9196E+06
Ba-140	6.6347E-08	9.0627E-16	3.8983E+09	1.1309E+07
La-140	2.7001E-09	4.8577E-18	2.0896E+07	3.3247E+05
La-141	3.6992E-10	6.5410E-20	2.7937E+05	7.2199E+04
La-142	1.5950E-10	1.1142E-20	4.7254E+04	3.9177E+04
Ce-141	1.5745E-09	5.5257E-17	2.3600E+08	2.6802E+05
Ce-143	1.4300E-09	2.1534E-18	9.0685E+06	2.4722E+05
Ce-144	1.2655E-09	3.9676E-16	1.6593E+09	2.1534E+05
Pr-143	5.9517E-10	8.8385E-18	3.7221E+07	1.0105E+05
Nd-147	2.4522E-10	3.0311E-18	1.2418E+07	4.1807E+04
Np-239	1.7288E-08	7.4519E-17	1.8777E+08	2.9690E+06

Pu-238	5.1103E-12	2.9850E-16	7.5530E+08	8.6953E+02
Pu-239	4.4773E-13	7.2033E-15	1.8150E+10	7.6175E+01
Pu-240	8.3833E-13	3.6790E-15	9.2316E+09	1.4265E+02
Pu-241	1.8069E-10	1.7540E-15	4.3830E+09	3.0745E+04
Am-241	1.2112E-13	3.5288E-17	8.8179E+07	2.0604E+01
Cm-242	3.0711E-11	9.2663E-18	2.3059E+07	5.2264E+03
Cm-244	2.0307E-12	2.5100E-17	6.1950E+07	3.4553E+02

CR Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	4.2288E+15	0.0000E+00	
Elemental I (atoms)	7.3665E+12	0.0000E+00	
Organic I (atoms)	2.2940E+11	0.0000E+00	
Aerosols (kg)	8.7883E-09	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.5451E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.8769E-12
Total I (Ci)			1.6833E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.3876E+16
Elemental I (atoms)	0.0000E+00	7.2801E+13
Organic I (atoms)	0.0000E+00	2.2540E+12
Aerosols (kg)	0.0000E+00	8.2697E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.2376E+15
Elemental I (atoms)	8.5260E+09	2.6369E+08
Organic I (atoms)	5.5729E+09	1.7236E+08
Aerosols (kg)	9.1963E-12	2.8442E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	1.2878E+16	0.0000E+00
Elemental I (atoms)	6.4044E+13	0.0000E+00
Organic I (atoms)	1.9817E+12	0.0000E+00
Aerosols (kg)	7.3902E-08	0.0000E+00

EAB Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.5042E-01	8.8164E-02	2.5524E-01
Accumulated dose (rem)	5.4937E-01	6.3059E-01	5.8073E-01

LPZ Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5914E+01	5.6028E+00	1.6220E+01
Accumulated dose (rem)	3.7112E+01	4.9714E+01	3.9558E+01

CR Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.6999E-04	1.4760E+00	6.5757E-02
Accumulated dose (rem)	4.1809E-03	2.2592E+01	1.0015E+00

DW Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	3.6468E-03	1.1469E-10	1.1908E+15	4.3601E+15
Co-60	4.3715E-03	3.8673E-09	3.8816E+16	5.2210E+15
Kr-85	1.3565E+06	3.4576E+00	2.4497E+25	5.1249E+20
Kr-85m	1.2041E+07	1.4632E-03	1.0366E+22	5.7504E+21
Kr-87	5.0710E+06	1.7902E-04	1.2392E+21	4.7582E+21
Kr-88	2.2927E+07	1.8284E-03	1.2513E+22	1.2644E+22

Rb-86	1.2536E-01	1.5406E-09	1.0788E+16	3.1479E+17
Sr-89	6.1780E+00	2.1265E-07	1.4389E+18	7.3898E+18
Sr-90	8.1415E-01	5.9685E-06	3.9937E+19	9.7232E+17
Sr-91	5.7525E+00	1.5869E-09	1.0502E+16	8.3839E+18
Sr-92	2.8855E+00	2.2957E-10	1.5027E+15	6.9579E+18
Y-90	2.6562E-02	4.8822E-11	3.2668E+14	1.0214E+16
Y-91	8.1132E-02	3.3083E-09	2.1893E+16	9.3802E+16
Y-92	1.3292E+00	1.3814E-10	9.0421E+14	1.1546E+17
Y-93	6.7390E-02	2.0199E-11	1.3080E+14	9.7060E+16
Zr-95	9.5768E-02	4.4579E-09	2.8259E+16	1.1451E+17
Zr-97	7.8829E-02	4.1236E-11	2.5601E+14	1.0528E+17
Nb-95	9.6128E-02	2.4583E-09	1.5583E+16	1.1480E+17
Mo-99	1.1774E+00	2.4549E-09	1.4933E+16	1.4469E+18
Tc-99m	1.0760E+00	2.0464E-10	1.2448E+15	1.2886E+18
Ru-103	1.0623E+00	3.2917E-08	1.9245E+17	1.2713E+18
Ru-105	4.0685E-01	6.0526E-11	3.4714E+14	7.4498E+17
Ru-106	4.6331E-01	1.3849E-07	7.8677E+17	5.5344E+17
Rh-105	7.0069E-01	8.3015E-10	4.7612E+15	8.4882E+17
Sb-127	1.1870E+00	4.4448E-09	2.1076E+16	1.4468E+18
Sb-129	1.9892E+00	3.5374E-10	1.6514E+15	3.6861E+18
Te-127	1.2050E+00	4.5660E-10	2.1651E+15	1.4393E+18
Te-127m	2.0737E-01	2.1985E-08	1.0425E+17	2.4765E+17
Te-129	2.5154E+00	1.2011E-10	5.6071E+14	3.8577E+18
Te-129m	6.8300E-01	2.2672E-08	1.0584E+17	8.1603E+17
Te-131m	2.3436E+00	2.9390E-09	1.3511E+16	2.9808E+18
Te-132	1.7800E+01	5.8632E-08	2.6749E+17	2.1778E+19
I-131	3.1924E+04	2.5750E-04	1.1837E+21	1.5672E+20
I-132	2.5209E+04	2.4423E-06	1.1142E+19	2.1997E+20
I-133	5.8927E+04	5.2018E-05	2.3553E+20	3.1717E+20
I-134	3.2480E+03	1.2175E-07	5.4717E+17	2.0728E+20
I-135	4.1830E+04	1.1911E-05	5.3133E+19	2.8114E+20
Xe-133	1.4291E+08	7.6348E-01	3.4570E+24	5.4405E+22
Xe-135	5.1551E+07	2.0186E-02	9.0048E+22	2.1590E+22
Cs-134	1.3797E+01	1.0663E-05	4.7922E+19	3.4475E+19
Cs-136	4.0919E+00	5.5831E-08	2.4722E+17	1.0297E+19
Cs-137	1.1104E+01	1.2766E-04	5.6114E+20	2.7743E+19
Ba-139	1.3167E+00	8.0500E-11	3.4877E+14	6.3344E+18
Ba-140	9.4696E+00	1.2935E-07	5.5640E+17	1.1379E+19
La-140	4.3423E-01	7.8123E-10	3.3605E+15	1.2274E+17
La-141	4.4361E-02	7.8441E-12	3.3502E+13	8.5890E+16
La-142	1.4555E-02	1.0167E-12	4.3120E+12	6.0273E+16
Ce-141	2.2514E-01	7.9014E-09	3.3747E+16	2.6928E+17
Ce-143	2.0032E-01	3.0164E-10	1.2703E+15	2.5332E+17
Ce-144	1.8101E-01	5.6752E-08	2.3734E+17	2.1623E+17
Pr-143	8.5205E-02	1.2653E-09	5.3286E+15	1.0111E+17
Nd-147	3.4987E-02	4.3247E-10	1.7717E+15	4.2084E+16
Np-239	2.4429E+00	1.0530E-08	2.6533E+16	3.0166E+18
Pu-238	7.3105E-04	4.2702E-08	1.0805E+17	8.7305E+14
Pu-239	6.4057E-05	1.0306E-06	2.5968E+18	7.6475E+13
Pu-240	1.1993E-04	5.2630E-07	1.3206E+18	1.4322E+14
Pu-241	2.5848E-02	2.5092E-07	6.2700E+17	3.0870E+16
Am-241	1.7329E-05	5.0489E-09	1.2616E+16	2.0682E+13
Cm-242	4.3926E-03	1.3253E-09	3.2981E+15	5.2485E+15
Cm-244	2.9049E-04	3.5906E-09	8.8620E+15	3.4693E+14

DW Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8068E+25	0.0000E+00	
Elemental I (atoms)	4.3051E+19	4.8566E+22	
Organic I (atoms)	1.4382E+21	0.0000E+00	
Aerosols (kg)	1.4754E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0146E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2270E-05
Total I (Ci)			1.6114E+05

DW to RB Transport Group Inventory:

Time (h) = 4.0000	Leakage Transport
Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.6387E+18
Organic I (atoms)	2.6913E+18
Aerosols (kg)	1.6814E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 4.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5139E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 4.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5139E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

RB Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	8.5059E-03	2.6750E-10	2.7774E+15	4.9090E+12
Co-60	1.0196E-02	9.0203E-09	9.0536E+16	5.8809E+12
Kr-85	1.5310E+03	3.9023E-03	2.7647E+22	3.4682E+17
Kr-85m	1.3590E+04	1.6513E-06	1.1700E+19	3.6582E+18
Kr-87	5.7232E+03	2.0205E-07	1.3986E+18	2.5432E+18
Kr-88	2.5876E+04	2.0636E-06	1.4122E+19	7.7456E+18
Rb-86	5.1206E-01	6.2932E-09	4.4068E+16	3.8534E+14
Sr-89	1.4410E+01	4.9600E-07	3.3562E+18	8.3185E+15
Sr-90	1.8990E+00	1.3921E-05	9.3151E+19	1.0952E+15
Sr-91	1.3417E+01	3.7014E-09	2.4495E+16	8.7182E+15
Sr-92	6.7303E+00	5.3545E-10	3.5050E+15	5.9925E+15
Y-90	7.4072E-02	1.3615E-10	9.1099E+14	2.4800E+13
Y-91	1.9126E-01	7.7991E-09	5.1612E+16	1.0772E+14
Y-92	4.0381E+00	4.1966E-10	2.7470E+15	1.3489E+15
Y-93	1.5718E-01	4.7113E-11	3.0508E+14	1.0140E+14
Zr-95	2.2337E-01	1.0398E-08	6.5912E+16	1.2892E+14
Zr-97	1.8386E-01	9.6180E-11	5.9712E+14	1.1334E+14
Nb-95	2.2421E-01	5.7339E-09	3.6348E+16	1.2931E+14
Mo-99	2.7463E+00	5.7260E-09	3.4831E+16	1.6109E+15
Tc-99m	2.5098E+00	4.7730E-10	2.9034E+15	1.4462E+15
Ru-103	2.4779E+00	7.6776E-08	4.4889E+17	1.4308E+15
Ru-105	9.4897E-01	1.4117E-10	8.0968E+14	7.0956E+14
Ru-106	1.0807E+00	3.2301E-07	1.8351E+18	6.2334E+14
Rh-105	1.6343E+00	1.9363E-09	1.1105E+16	9.5146E+14
Sb-127	2.7686E+00	1.0367E-08	4.9160E+16	1.6162E+15
Sb-129	4.6398E+00	8.2508E-10	3.8518E+15	3.4952E+15
Te-127	2.8107E+00	1.0650E-09	5.0501E+15	1.6183E+15
Te-127m	4.8368E-01	5.1278E-08	2.4315E+17	2.7895E+14
Te-129	5.8670E+00	2.8015E-10	1.3078E+15	3.9184E+15
Te-129m	1.5931E+00	5.2882E-08	2.4687E+17	9.1907E+14
Te-131m	5.4663E+00	6.8552E-09	3.1513E+16	3.2726E+15
Te-132	4.1518E+01	1.3676E-07	6.2392E+17	2.4290E+16
I-131	2.7453E+02	2.2144E-06	1.0180E+19	1.8327E+17
I-132	1.8981E+02	1.8389E-08	8.3894E+16	1.8935E+17
I-133	5.0692E+02	4.4749E-07	2.0262E+18	3.5835E+17
I-134	2.7941E+01	1.0474E-09	4.7071E+15	1.1224E+17
I-135	3.5984E+02	1.0247E-07	4.5708E+17	2.9285E+17
Xe-133	1.6126E+05	8.6151E-04	3.9008E+21	3.6732E+19
Xe-135	5.7914E+04	2.2678E-05	1.0116E+20	1.4111E+19
Cs-134	5.6356E+01	4.3557E-05	1.9575E+20	4.2283E+16
Cs-136	1.6714E+01	2.2806E-07	1.0098E+18	1.2594E+16
Cs-137	4.5357E+01	5.2145E-04	2.2921E+21	3.4028E+16
Ba-139	3.0712E+00	1.8776E-10	8.1348E+14	4.3399E+15
Ba-140	2.2087E+01	3.0170E-07	1.2978E+18	1.2785E+16
La-140	1.2345E+00	2.2211E-09	9.5539E+15	3.8371E+14
La-141	1.0347E-01	1.8296E-11	7.8143E+13	8.0118E+13
La-142	3.3948E-02	2.3715E-12	1.0057E+13	4.3277E+13
Ce-141	5.2499E-01	1.8425E-08	7.8694E+16	3.0310E+14
Ce-143	4.6723E-01	7.0357E-10	2.9629E+15	2.7877E+14
Ce-144	4.2220E-01	1.3237E-07	5.5358E+17	2.4354E+14
Pr-143	1.9912E-01	2.9570E-09	1.2453E+16	1.1430E+14
Nd-147	8.1604E-02	1.0087E-09	4.1324E+15	4.7265E+13

Np-239	5.6980E+00	2.4561E-08	6.1887E+16	3.3519E+15
Pu-238	1.7051E-03	9.9600E-08	2.5202E+17	9.8341E+11
Pu-239	1.4941E-04	2.4038E-06	6.0568E+18	8.6153E+10
Pu-240	2.7972E-04	1.2276E-06	3.0802E+18	1.6133E+11
Pu-241	6.0289E-02	5.8526E-07	1.4625E+18	3.4772E+13
Am-241	4.0422E-05	1.1778E-08	2.9430E+16	2.3303E+10
Cm-242	1.0245E-02	3.0913E-09	7.6926E+15	5.9107E+12
Cm-244	6.7756E-04	8.3750E-09	2.0670E+16	3.9078E+11

RB Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	3.1676E+22	0.0000E+00	
Elemental I (atoms)	5.6966E+17	0.0000E+00	
Organic I (atoms)	1.6616E+18	0.0000E+00	
Aerosols (kg)	5.8748E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.1041E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3330E-08
Total I (Ci)			1.3590E+03

DW to RB Transport Group Inventory:

Time (h) = 4.0000	Leakage Transport
Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.6387E+18
Organic I (atoms)	2.6913E+18
Aerosols (kg)	1.6814E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7530E+22
Elemental I (atoms)	9.7363E+17	5.0860E+16
Organic I (atoms)	9.5334E+17	3.0127E+16
Aerosols (kg)	1.0453E-03	5.5897E-05

Environment Integral Nuclide Release:

Time (h) = 4.0000	Ci	kg	Atoms	Bq
Co-58	3.6812E-04	1.1577E-11	1.2020E+14	1.3620E+07
Co-60	4.4101E-04	3.9014E-10	3.9158E+15	1.6317E+07
Kr-85	8.4623E+02	2.1569E-03	1.5281E+22	3.1310E+13
Kr-85m	8.8384E+03	1.0740E-06	7.6090E+18	3.2702E+14
Kr-87	5.9900E+03	2.1147E-07	1.4638E+18	2.2163E+14
Kr-88	1.8606E+04	1.4838E-06	1.0154E+19	6.8842E+14
Rb-86	4.9864E-02	6.1282E-10	4.2913E+15	1.8450E+09
Sr-89	6.2379E-01	2.1471E-08	1.4528E+17	2.3080E+10
Sr-90	8.2132E-02	6.0211E-07	4.0289E+18	3.0389E+09
Sr-91	6.5061E-01	1.7948E-10	1.1877E+15	2.4072E+10
Sr-92	4.4180E-01	3.5149E-11	2.3008E+14	1.6347E+10
Y-90	1.9637E-03	3.6093E-12	2.4151E+13	7.2656E+07
Y-91	8.0941E-03	3.3005E-10	2.1842E+15	2.9948E+08
Y-92	1.1019E-01	1.1452E-11	7.4961E+13	4.0771E+09
Y-93	7.5695E-03	2.2688E-12	1.4692E+13	2.8007E+08
Zr-95	9.6677E-03	4.5002E-10	2.8527E+15	3.5771E+08
Zr-97	8.4763E-03	4.4340E-12	2.7528E+13	3.1362E+08
Nb-95	9.6975E-03	2.4800E-10	1.5721E+15	3.5881E+08
Mo-99	1.2072E-01	2.5170E-10	1.5311E+15	4.4666E+09
Tc-99m	1.0902E-01	2.0733E-11	1.2612E+14	4.0337E+09
Ru-103	1.0729E-01	3.3244E-09	1.9437E+16	3.9698E+09
Ru-105	5.2660E-02	7.8339E-12	4.4930E+13	1.9484E+09
Ru-106	4.6745E-02	1.3972E-08	7.9379E+16	1.7296E+09
Rh-105	7.1376E-02	8.4563E-11	4.8500E+14	2.6409E+09
Sb-127	1.2114E-01	4.5361E-10	2.1510E+15	4.4821E+09
Sb-129	2.5932E-01	4.6115E-11	2.1528E+14	9.5949E+09
Te-127	1.2177E-01	4.6142E-11	2.1880E+14	4.5056E+09
Te-127m	2.0919E-02	2.2178E-09	1.0516E+16	7.7401E+08
Te-129	2.9898E-01	1.4276E-11	6.6647E+13	1.1062E+10
Te-129m	6.8923E-02	2.2879E-09	1.0681E+16	2.5502E+09
Te-131m	2.4504E-01	3.0730E-10	1.4127E+15	9.0665E+09
Te-132	1.8205E+00	5.9964E-09	2.7357E+16	6.7357E+10
I-131	2.2332E+01	1.8013E-07	8.2808E+17	8.2629E+11

I-132	2.5900E+01	2.5092E-09	1.1448E+16	9.5831E+11
I-133	4.4562E+01	3.9338E-08	1.7812E+17	1.6488E+12
I-134	2.4755E+01	9.2798E-10	4.1705E+15	9.1595E+11
I-135	3.8286E+01	1.0902E-08	4.8631E+16	1.4166E+12
Xe-133	8.9592E+04	4.7864E-04	2.1672E+21	3.3149E+15
Xe-135	3.4254E+04	1.3413E-05	5.9834E+19	1.2674E+15
Cs-134	5.4656E+00	4.2244E-06	1.8985E+19	2.0223E+11
Cs-136	1.6305E+00	2.2247E-08	9.8509E+16	6.0328E+10
Cs-137	4.3985E+00	5.0568E-05	2.2228E+20	1.6274E+11
Ba-139	3.1486E-01	1.9249E-11	8.3397E+13	1.1650E+10
Ba-140	9.5864E-01	1.3095E-08	5.6327E+16	3.5470E+10
La-140	3.0694E-02	5.5222E-11	2.3754E+14	1.1357E+09
La-141	5.9379E-03	1.0500E-12	4.4844E+12	2.1970E+08
La-142	3.1505E-03	2.2008E-13	9.3337E+11	1.1657E+08
Ce-141	2.2729E-02	7.9769E-10	3.4070E+15	8.4097E+08
Ce-143	2.0876E-02	3.1436E-11	1.3239E+14	7.7242E+08
Ce-144	1.8263E-02	5.7260E-09	2.3946E+16	6.7573E+08
Pr-143	8.5754E-03	1.2735E-10	5.3629E+14	3.1729E+08
Nd-147	3.5438E-03	4.3805E-11	1.7946E+14	1.3112E+08
Np-239	2.5116E-01	1.0826E-09	2.7279E+15	9.2928E+09
Pu-238	7.3747E-05	4.3077E-09	1.0900E+16	2.7286E+06
Pu-239	6.4608E-06	1.0394E-07	2.6191E+17	2.3905E+05
Pu-240	1.2098E-05	5.3093E-08	1.3322E+17	4.4763E+05
Pu-241	2.6076E-03	2.5313E-08	6.3252E+16	9.6480E+07
Am-241	1.7476E-06	5.0918E-10	1.2723E+15	6.4661E+04
Cm-242	4.4324E-04	1.3374E-10	3.3280E+14	1.6400E+07
Cm-244	2.9305E-05	3.6223E-10	8.9401E+14	1.0843E+06

Environment Transport Group Inventory:

Time (h) = 4.0000	Total Release	Release Rate/s	
Noble gases (atoms)	1.7528E+22	1.2172E+18	
Elemental I (atoms)	5.0812E+16	3.5286E+12	
Organic I (atoms)	3.0083E+16	2.0891E+12	
Aerosols (kg)	5.5894E-05	3.8815E-09	
Dose Effective (Ci) I-131 (Thyroid)			3.1037E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			3.8785E+01
Total I (Ci)			1.5584E+02

RB to Environment Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7530E+22
Elemental I (atoms)	9.7363E+17	5.0860E+16
Organic I (atoms)	9.5334E+17	3.0127E+16
Aerosols (kg)	1.0453E-03	5.5897E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5499E+16
Elemental I (atoms)	0.0000E+00	7.2802E+13
Organic I (atoms)	0.0000E+00	2.2566E+12
Aerosols (kg)	0.0000E+00	8.2698E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.8902E+15
Elemental I (atoms)	1.1076E+10	3.4256E+08
Organic I (atoms)	1.1232E+10	3.4738E+08
Aerosols (kg)	1.1864E-11	3.6692E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 4.0000	Pathway Filtered	Transported
Noble gases (atoms)	1.6684E+16	0.0000E+00

Elemental I (atoms)	6.7986E+13	0.0000E+00
Organic I (atoms)	2.1053E+12	0.0000E+00
Aerosols (kg)	7.8631E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	2.4657E-11	7.7542E-19	8.0512E+06	7.7368E+03
Co-60	2.9557E-11	2.6148E-17	2.6244E+08	9.2701E+03
Kr-85	2.7516E-04	7.0135E-10	4.9690E+15	1.2815E+11
Kr-85m	2.4425E-03	2.9679E-13	2.1027E+12	1.6014E+12
Kr-87	1.0286E-03	3.6314E-14	2.5136E+11	1.8261E+12
Kr-88	4.6506E-03	3.7089E-13	2.5381E+12	3.7697E+12
Rb-86	3.6654E-06	4.5048E-14	3.1545E+11	1.0770E+10
Sr-89	4.1772E-08	1.4378E-15	9.7289E+09	1.3110E+07
Sr-90	5.5047E-09	4.0355E-14	2.7003E+11	1.7264E+06
Sr-91	3.8894E-08	1.0729E-17	7.1005E+07	1.3340E+07
Sr-92	1.9510E-08	1.5522E-18	1.0160E+07	8.4880E+06
Y-90	2.1690E-10	3.9866E-19	2.6676E+06	4.7127E+04
Y-91	5.5480E-10	2.2623E-17	1.4971E+08	1.7104E+05
Y-92	1.1876E-08	1.2342E-18	8.0789E+06	2.7475E+06
Y-93	4.5565E-10	1.3657E-19	8.8436E+05	1.5543E+05
Zr-95	6.4751E-10	3.0141E-17	1.9107E+08	2.0319E+05
Zr-97	5.3299E-10	2.7881E-19	1.7309E+06	1.7571E+05
Nb-95	6.4995E-10	1.6621E-17	1.0536E+08	2.0383E+05
Mo-99	7.9608E-09	1.6598E-17	1.0097E+08	2.5286E+06
Tc-99m	7.2753E-09	1.3836E-18	8.4164E+06	2.2772E+06
Ru-103	7.1829E-09	2.2256E-16	1.3012E+09	2.2547E+06
Ru-105	2.7509E-09	4.0923E-19	2.3471E+06	1.0487E+06
Ru-106	3.1326E-09	9.3634E-16	5.3196E+09	9.8255E+05
Rh-105	4.7376E-09	5.6129E-18	3.2192E+07	1.4967E+06
Sb-127	8.0256E-09	3.0053E-17	1.4250E+08	2.5399E+06
Sb-129	1.3450E-08	2.3918E-18	1.1165E+07	5.1562E+06
Te-127	8.1476E-09	3.0872E-18	1.4639E+07	2.5497E+06
Te-127m	1.4021E-09	1.4864E-16	7.0485E+08	4.3972E+05
Te-129	1.7007E-08	8.1210E-19	3.7912E+06	5.9352E+06
Te-129m	4.6180E-09	1.5329E-16	7.1562E+08	1.4487E+06
Te-131m	1.5846E-08	1.9872E-17	9.1351E+07	5.1107E+06
Te-132	1.2035E-07	3.9643E-16	1.8086E+09	3.8152E+07
I-131	1.4930E-03	1.2043E-11	5.5361E+13	4.4108E+12
I-132	6.7916E-04	6.5796E-14	3.0018E+11	4.6359E+12
I-133	2.7587E-03	2.4353E-12	1.1027E+13	8.8357E+12
I-134	1.5206E-04	5.6999E-15	2.5616E+10	4.6000E+12
I-135	1.9583E-03	5.5762E-13	2.4874E+12	7.6391E+12
Xe-133	2.9021E-02	1.5504E-10	7.0202E+14	1.3658E+13
Xe-135	1.0742E-02	4.2065E-12	1.8765E+13	5.7161E+12
Cs-134	4.0340E-04	3.1179E-10	1.4012E+15	1.1805E+12
Cs-136	1.1964E-04	1.6325E-12	7.2286E+12	3.5218E+11
Cs-137	3.2467E-04	3.7326E-09	1.6408E+16	9.5000E+11
Ba-139	8.9029E-09	5.4429E-19	2.3581E+06	5.5158E+06
Ba-140	6.4027E-08	8.7458E-16	3.7620E+09	2.0135E+07
La-140	3.6185E-09	6.5100E-18	2.8003E+07	7.5269E+05
La-141	2.9994E-10	5.3037E-20	2.2652E+05	1.1740E+05
La-142	9.8409E-11	6.8745E-21	2.9155E+04	5.6317E+04
Ce-141	1.5218E-09	5.3410E-17	2.2811E+08	4.7765E+05
Ce-143	1.3544E-09	2.0395E-18	8.5889E+06	4.3572E+05
Ce-144	1.2239E-09	3.8372E-16	1.6047E+09	3.8388E+05
Pr-143	5.7728E-10	8.5727E-18	3.6102E+07	1.8042E+05
Nd-147	2.3655E-10	2.9241E-18	1.1979E+07	7.4425E+04
Np-239	1.6517E-08	7.1198E-17	1.7940E+08	5.2576E+06
Pu-238	4.9428E-12	2.8872E-16	7.3055E+08	1.5502E+03
Pu-239	4.3311E-13	6.9680E-15	1.7558E+10	1.3581E+02
Pu-240	8.1085E-13	3.5585E-15	8.9290E+09	2.5430E+02
Pu-241	1.7477E-10	1.6965E-15	4.2394E+09	5.4811E+04
Am-241	1.1718E-13	3.4141E-17	8.5312E+07	3.6738E+01
Cm-242	2.9699E-11	8.9610E-18	2.2299E+07	9.3165E+03
Cm-244	1.9641E-12	2.4277E-17	5.9919E+07	6.1600E+02

CR Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump
Noble gases (atoms)	5.6946E+15	0.0000E+00
Elemental I (atoms)	3.3562E+12	0.0000E+00

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Organic I (atoms)      1.0643E+11  0.0000E+00
Aerosols (kg)          4.0605E-09  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.0388E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   8.4628E-13
Total I (Ci)                                   7.0412E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.5499E+16
Elemental I (atoms)    0.0000E+00  7.2802E+13
Organic I (atoms)      0.0000E+00  2.2566E+12
Aerosols (kg)          0.0000E+00  8.2698E-08

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.8902E+15
Elemental I (atoms)    1.1076E+10  3.4256E+08
Organic I (atoms)      1.1232E+10  3.4738E+08
Aerosols (kg)          1.1864E-11  3.6692E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    1.6684E+16  0.0000E+00
Elemental I (atoms)    6.7986E+13  0.0000E+00
Organic I (atoms)      2.1053E+12  0.0000E+00
Aerosols (kg)          7.8631E-08  0.0000E+00

EAB Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.9341E-01  1.9258E-01  9.0325E-01
Accumulated dose (rem)  1.4428E+00  8.2317E-01  1.4840E+00

LPZ Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.6776E+01  1.2238E+01  5.7401E+01
Accumulated dose (rem)  9.3887E+01  6.1953E+01  9.6959E+01

CR Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3964E-04  1.1838E+00  5.3421E-02
Accumulated dose (rem)  4.8205E-03  2.3776E+01  1.0549E+00

DW Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms      Decay
Co-58                  3.6262E-03  1.1404E-10  1.1841E+15  4.3620E+15
Co-60                  4.3537E-03  3.8515E-09  3.8657E+16  5.2233E+15
Kr-85                  1.3511E+06  3.4437E+00  2.4398E+25  1.2338E+21
Kr-85m                 6.4586E+06  7.8481E-04  5.5603E+21  1.0525E+22
Kr-87                  5.7076E+05  2.0150E-05  1.3948E+20  5.8558E+21
Kr-88                  8.6023E+06  6.8603E-04  4.6947E+21  2.0430E+22
Rb-86                  1.2408E-01  1.5250E-09  1.0679E+16  3.1486E+17
Sr-89                  6.1391E+00  2.1131E-07  1.4298E+18  7.3930E+18
Sr-90                  8.1087E-01  5.9445E-06  3.9776E+19  9.7276E+17
Sr-91                  4.2791E+00  1.1805E-09  7.8119E+15  8.3866E+18
Sr-92                  1.0331E+00  8.2193E-11  5.3802E+14  6.9588E+18
Y-90                   5.9730E-02  1.0979E-10  7.3461E+14  1.0237E+16
Y-91                   8.4763E-02  3.4563E-09  2.2873E+16  9.3846E+16
Y-92                   1.5284E+00  1.5884E-10  1.0397E+15  1.1628E+17
Y-93                   5.1007E-02  1.5288E-11  9.8998E+13  9.7091E+16
Zr-95                  9.5210E-02  4.4319E-09  2.8094E+16  1.1456E+17
Zr-97                  6.6632E-02  3.4856E-11  2.1640E+14  1.0532E+17
Nb-95                  9.5737E-02  2.4483E-09  1.5520E+16  1.1485E+17
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Mo-99	1.1244E+00	2.3445E-09	1.4261E+16	1.4476E+18
Tc-99m	1.0507E+00	1.9982E-10	1.2155E+15	1.2891E+18
Ru-103	1.0550E+00	3.2688E-08	1.9112E+17	1.2718E+18
Ru-105	2.1702E-01	3.2284E-11	1.8516E+14	7.4514E+17
Ru-106	4.6131E-01	1.3789E-07	7.8336E+17	5.5369E+17
Rh-105	6.6790E-01	7.9130E-10	4.5384E+15	8.4918E+17
Sb-127	1.1473E+00	4.2961E-09	2.0371E+16	1.4475E+18
Sb-129	1.0428E+00	1.8544E-10	8.6570E+14	3.6869E+18
Te-127	1.1901E+00	4.5096E-10	2.1384E+15	1.4399E+18
Te-127m	2.0654E-01	2.1897E-08	1.0383E+17	2.4776E+17
Te-129	1.5769E+00	7.5297E-11	3.5151E+14	3.8587E+18
Te-129m	6.7903E-01	2.2540E-08	1.0522E+17	8.1640E+17
Te-131m	2.1281E+00	2.6688E-09	1.2269E+16	2.9819E+18
Te-132	1.7111E+01	5.6362E-08	2.5714E+17	2.1787E+19
I-131	3.1342E+04	2.5281E-04	1.1622E+21	1.7357E+20
I-132	7.5334E+03	7.2983E-07	3.3297E+18	2.2777E+20
I-133	5.1365E+04	4.5343E-05	2.0531E+20	3.4651E+20
I-134	1.3688E+02	5.1311E-09	2.3060E+16	2.0780E+20
I-135	2.7388E+04	7.7988E-06	3.4789E+19	2.9931E+20
Xe-133	1.3924E+08	7.4385E-01	3.3681E+24	1.2956E+23
Xe-135	3.7853E+07	1.4823E-02	6.6122E+22	4.5218E+22
Cs-134	1.3739E+01	1.0619E-05	4.7722E+19	3.4482E+19
Cs-136	4.0396E+00	5.5118E-08	2.4406E+17	1.0299E+19
Cs-137	1.1059E+01	1.2714E-04	5.5888E+20	2.7749E+19
Ba-139	1.7545E-01	1.0726E-11	4.6471E+13	6.3347E+18
Ba-140	9.3464E+00	1.2767E-07	5.4916E+17	1.1384E+19
La-140	1.0289E+00	1.8510E-09	7.9623E+15	1.2313E+17
La-141	2.1820E-02	3.8584E-12	1.6479E+13	8.5907E+16
La-142	2.4000E-03	1.6765E-13	7.1101E+11	6.0276E+16
Ce-141	2.2355E-01	7.8457E-09	3.3509E+16	2.6940E+17
Ce-143	1.8343E-01	2.7622E-10	1.1632E+15	2.5342E+17
Ce-144	1.8021E-01	5.6501E-08	2.3629E+17	2.1633E+17
Pr-143	8.5766E-02	1.2736E-09	5.3637E+15	1.0116E+17
Nd-147	3.4481E-02	4.2623E-10	1.7461E+15	4.2102E+16
Np-239	2.3166E+00	9.9858E-09	2.5161E+16	3.0179E+18
Pu-238	7.2812E-04	4.2531E-08	1.0762E+17	8.7344E+14
Pu-239	6.3831E-05	1.0269E-06	2.5876E+18	7.6509E+13
Pu-240	1.1944E-04	5.2418E-07	1.3153E+18	1.4329E+14
Pu-241	2.5743E-02	2.4991E-07	6.2447E+17	3.0884E+16
Am-241	1.7278E-05	5.0341E-09	1.2579E+16	2.0691E+13
Cm-242	4.3718E-03	1.3191E-09	3.2825E+15	5.2508E+15
Cm-244	2.8932E-04	3.5761E-09	8.8263E+15	3.4709E+14

DW Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7843E+25	0.0000E+00	
Elemental I (atoms)	4.0774E+19	4.8566E+22	
Organic I (atoms)	1.3622E+21	0.0000E+00	
Aerosols (kg)	1.4691E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.5890E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1212E-05
Total I (Ci)			1.1777E+05

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1894E+18
Aerosols (kg)	1.6818E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 8.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8342E+17
Organic I (atoms)	0.0000E+00	2.0849E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 8.0000	Pipe Walls	Transported

Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8342E+17
Organic I (atoms)	0.0000E+00	2.0849E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

RB Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	2.2359E-03	7.0317E-11	7.3010E+14	7.3672E+12
Co-60	2.6845E-03	2.3749E-09	2.3836E+16	8.8295E+12
Kr-85	2.2682E+03	5.7813E-03	4.0960E+22	1.4069E+18
Kr-85m	1.0843E+04	1.3175E-06	9.3346E+18	1.0545E+19
Kr-87	9.5820E+02	3.3828E-08	2.3416E+17	4.0545E+18
Kr-88	1.4442E+04	1.1517E-06	7.8816E+18	1.8853E+19
Rb-86	1.3386E-01	1.6452E-09	1.1520E+16	5.3302E+14
Sr-89	3.7855E+00	1.3030E-07	8.8166E+17	1.2482E+16
Sr-90	4.9999E-01	3.6654E-06	2.4526E+19	1.6444E+15
Sr-91	2.6386E+00	7.2788E-10	4.8169E+15	1.2190E+16
Sr-92	6.3703E-01	5.0681E-11	3.3175E+14	7.3464E+15
Y-90	3.9879E-02	7.3298E-11	4.9046E+14	5.4776E+13
Y-91	5.2797E-02	2.1529E-09	1.4247E+16	1.6412E+14
Y-92	1.0550E+00	1.0964E-10	7.1768E+14	2.5789E+15
Y-93	3.1451E-02	9.4269E-12	6.1043E+13	1.4234E+14
Zr-95	5.8708E-02	2.7328E-09	1.7323E+16	1.9347E+14
Zr-97	4.1086E-02	2.1492E-11	1.3343E+14	1.6325E+14
Nb-95	5.9032E-02	1.5097E-09	9.5698E+15	1.9415E+14
Mo-99	6.9334E-01	1.4456E-09	8.7936E+15	2.3922E+15
Tc-99m	6.4787E-01	1.2321E-10	7.4948E+14	2.1630E+15
Ru-103	6.5050E-01	2.0156E-08	1.1785E+17	2.1465E+15
Ru-105	1.3381E-01	1.9907E-11	1.1417E+14	9.2754E+14
Ru-106	2.8445E-01	8.5021E-08	4.8303E+17	9.3582E+14
Rh-105	4.1184E-01	4.8793E-10	2.7984E+15	1.4166E+15
Sb-127	7.0742E-01	2.6490E-09	1.2561E+16	2.4075E+15
Sb-129	6.4300E-01	1.1434E-10	5.3380E+14	4.5546E+15
Te-127	7.3385E-01	2.7807E-10	1.3185E+15	2.4258E+15
Te-127m	1.2736E-01	1.3502E-08	6.4023E+16	4.1883E+14
Te-129	9.7233E-01	4.6429E-11	2.1675E+14	5.3102E+15
Te-129m	4.1869E-01	1.3898E-08	6.4882E+16	1.3795E+15
Te-131m	1.3122E+00	1.6456E-09	7.5650E+15	4.7977E+15
Te-132	1.0551E+01	3.4754E-08	1.5855E+17	3.6132E+16
I-131	1.1439E+02	9.2271E-07	4.2418E+18	2.7657E+17
I-132	3.2935E+01	3.1907E-09	1.4557E+16	2.3499E+17
I-133	1.8750E+02	1.6551E-07	7.4943E+17	5.2217E+17
I-134	4.9964E-01	1.8730E-11	8.4173E+13	1.1573E+17
I-135	9.9974E+01	2.8467E-08	1.2699E+17	3.9638E+17
Xe-133	2.3374E+05	1.2487E-03	5.6542E+21	1.4711E+20
Xe-135	6.3512E+04	2.4870E-05	1.1094E+20	4.8461E+19
Cs-134	1.4822E+01	1.1456E-05	5.1484E+19	5.8574E+16
Cs-136	4.3581E+00	5.9463E-08	2.6330E+17	1.7410E+16
Cs-137	1.1931E+01	1.3716E-04	6.0293E+20	4.7140E+16
Ba-139	1.0818E-01	6.6138E-12	2.8654E+13	4.8037E+15
Ba-140	5.7631E+00	7.8721E-08	3.3862E+17	1.9150E+16
La-140	6.8877E-01	1.2392E-09	5.3304E+15	8.9441E+14
La-141	1.3455E-02	2.3791E-12	1.0161E+13	1.0323E+14
La-142	1.4798E-03	1.0338E-13	4.3842E+11	4.8706E+13
Ce-141	1.3781E-01	4.8365E-09	2.0657E+16	4.5474E+14
Ce-143	1.1311E-01	1.7032E-10	7.1727E+14	4.0955E+14
Ce-144	1.1112E-01	3.4839E-08	1.4570E+17	3.6561E+14
Pr-143	5.2984E-02	7.8683E-10	3.3136E+15	1.7212E+14
Nd-147	2.1261E-02	2.6282E-10	1.0767E+15	7.0767E+13
Np-239	1.4285E+00	6.1574E-09	1.5515E+16	4.9685E+15
Pu-238	4.4896E-04	2.6225E-08	6.6357E+16	1.4765E+12
Pu-239	3.9359E-05	6.3322E-07	1.5955E+18	1.2937E+11
Pu-240	7.3650E-05	3.2322E-07	8.1102E+17	2.4222E+11
Pu-241	1.5874E-02	1.5409E-07	3.8505E+17	5.2207E+13
Am-241	1.0655E-05	3.1044E-09	7.7573E+15	3.4998E+10
Cm-242	2.6957E-03	8.1336E-10	2.0240E+15	8.8727E+12
Cm-244	1.7840E-04	2.2051E-09	5.4424E+15	5.8672E+11

RB Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump
Noble gases (atoms)	4.6743E+22	0.0000E+00

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Elemental I (atoms)    1.9888E+17  0.0000E+00
Organic I (atoms)      2.2979E+18  0.0000E+00
Aerosols (kg)          1.5451E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          4.4313E-09
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    5.1861E-09
Total I (Ci)                                    4.3530E+02

DW to  RB Transport Group Inventory:
Time (h) =   8.0000  Leakage Transport

Noble gases (atoms)      1.1916E+23
Elemental I (atoms)      1.7434E+18
Organic I (atoms)        6.1894E+18
Aerosols (kg)            1.6818E-03

RB to Environment Transport Group Inventory:

                         Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.2187E+22
Elemental I (atoms)    1.4185E+18  6.4621E+16
Organic I (atoms)      3.6318E+18  1.1296E+17
Aerosols (kg)          1.4656E-03  6.8895E-05

Environment Integral Nuclide Release:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
Co-58                  5.5625E-04  1.7493E-11  1.8163E+14  2.0581E+07
Co-60                  6.6668E-04  5.8978E-10  5.9196E+15  2.4667E+07
Kr-85                  3.4936E+03  8.9046E-03  6.3088E+22  1.2926E+14
Kr-85m                 2.5898E+04  3.1470E-06  2.2296E+19  9.5823E+14
Kr-87                  9.6570E+03  3.4093E-07  2.3599E+18  3.5731E+14
Kr-88                  4.5990E+04  3.6677E-06  2.5099E+19  1.7016E+15
Rb-86                  6.1166E-02  7.5172E-10  5.2639E+15  2.2631E+09
Sr-89                  9.4243E-01  3.2439E-08  2.1950E+17  3.4870E+10
Sr-90                  1.2416E-01  9.1023E-07  6.0906E+18  4.5940E+09
Sr-91                  9.1536E-01  2.5251E-10  1.6711E+15  3.3868E+10
Sr-92                  5.4410E-01  4.3288E-11  2.8335E+14  2.0132E+10
Y-90                   4.3022E-03  7.9075E-12  5.2911E+13  1.5918E+08
Y-91                   1.2415E-02  5.0626E-10  3.3503E+15  4.5937E+08
Y-92                   2.0545E-01  2.1351E-11  1.3976E+14  7.6015E+09
Y-93                   1.0692E-02  3.2046E-12  2.0751E+13  3.9559E+08
Zr-95                  1.4608E-02  6.7999E-10  4.3105E+15  5.4050E+08
Zr-97                  1.2288E-02  6.4281E-12  3.9908E+13  4.5467E+08
Nb-95                  1.4660E-02  3.7490E-10  2.3766E+15  5.4242E+08
Mo-99                  1.8048E-01  3.7631E-10  2.2891E+15  6.6779E+09
Tc-99m                 1.6417E-01  3.1221E-11  1.8992E+14  6.0743E+09
Ru-103                 1.6207E-01  5.0217E-09  2.9360E+16  5.9966E+09
Ru-105                 6.9213E-02  1.0296E-11  5.9054E+13  2.5609E+09
Ru-106                 7.0660E-02  2.1120E-08  1.1999E+17  2.6144E+09
Rh-105                 1.0697E-01  1.2674E-10  7.2689E+14  3.9580E+09
Sb-127                 1.8168E-01  6.8031E-10  3.2259E+15  6.7221E+09
Sb-129                 3.3975E-01  6.0417E-11  2.8205E+14  1.2571E+10
Te-127                 1.8380E-01  6.9643E-11  3.3024E+14  6.8004E+09
Te-127m                3.1625E-02  3.3527E-09  1.5898E+16  1.1701E+09
Te-129                 4.0745E-01  1.9456E-11  9.0826E+13  1.5076E+10
Te-129m                1.0416E-01  3.4576E-09  1.6141E+16  3.8539E+09
Te-131m                3.6163E-01  4.5350E-10  2.0848E+15  1.3380E+10
Te-132                 2.7263E+00  8.9803E-09  4.0970E+16  1.0087E+11
I-131                  2.9432E+01  2.3740E-07  1.0913E+18  1.0890E+12
I-132                  2.9350E+01  2.8434E-09  1.2972E+16  1.0859E+12
I-133                  5.7010E+01  5.0327E-08  2.2788E+17  2.1094E+12
I-134                  2.5011E+01  9.3758E-10  4.2136E+15  9.2542E+11
I-135                  4.6125E+01  1.3134E-08  5.8589E+16  1.7066E+12
Xe-133                 3.6516E+05  1.9508E-03  8.8332E+21  1.3511E+16
Xe-135                 1.1969E+05  4.6868E-05  2.0907E+20  4.4284E+15
Cs-134                 6.7126E+00  5.1881E-06  2.3316E+19  2.4836E+11
Cs-136                 1.9990E+00  2.7275E-08  1.2077E+17  7.3963E+10
Cs-137                 5.4021E+00  6.2106E-05  2.7300E+20  1.9988E+11
Ba-139                 3.4947E-01  2.1366E-11  9.2565E+13  1.2931E+10
Ba-140                 1.4457E+00  1.9748E-08  8.4946E+16  5.3491E+10
La-140                 7.0586E-02  1.2699E-10  5.4626E+14  2.6117E+09
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La-141	7.6914E-03	1.3600E-12	5.8087E+12	2.8458E+08
La-142	3.5567E-03	2.4846E-13	1.0537E+12	1.3160E+08
Ce-141	3.4335E-02	1.2050E-09	5.1466E+15	1.2704E+09
Ce-143	3.0874E-02	4.6492E-11	1.9579E+14	1.1424E+09
Ce-144	2.7606E-02	8.6553E-09	3.6197E+16	1.0214E+09
Pr-143	1.3002E-02	1.9308E-10	8.1313E+14	4.8107E+08
Nd-147	5.3423E-03	6.6037E-11	2.7053E+14	1.9766E+08
Np-239	3.7481E-01	1.6156E-09	4.0709E+15	1.3868E+10
Pu-238	1.1149E-04	6.5122E-09	1.6478E+16	4.1250E+06
Pu-239	9.7684E-06	1.5716E-07	3.9599E+17	3.6143E+05
Pu-240	1.8289E-05	8.0263E-08	2.0140E+17	6.7670E+05
Pu-241	3.9419E-03	3.8267E-08	9.5621E+16	1.4585E+08
Am-241	2.6427E-06	7.6997E-10	1.9240E+15	9.7778E+04
Cm-242	6.6994E-04	2.0214E-10	5.0302E+14	2.4788E+07
Cm-244	4.4301E-05	5.4759E-10	1.3515E+15	1.6392E+06

Environment Transport Group Inventory:

Time (h) = 8.0000	Total Release	Release Rate/s	
Noble gases (atoms)	7.2180E+22	2.5062E+18	
Elemental I (atoms)	6.4555E+16	2.2415E+12	
Organic I (atoms)	1.1282E+17	3.9174E+12	
Aerosols (kg)	6.8892E-05	2.3921E-09	
Dose Effective (Ci) I-131 (Thyroid)			4.0456E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			4.9993E+01
Total I (Ci)			1.8693E+02

RB to Environment Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.2187E+22
Elemental I (atoms)	1.4185E+18	6.4621E+16
Organic I (atoms)	3.6318E+18	1.1296E+17
Aerosols (kg)	1.4656E-03	6.8895E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5054E+16
Elemental I (atoms)	0.0000E+00	7.2805E+13
Organic I (atoms)	0.0000E+00	2.2711E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.8388E+16
Elemental I (atoms)	1.6326E+10	5.0492E+08
Organic I (atoms)	4.2836E+10	1.3248E+09
Aerosols (kg)	1.6823E-11	5.2030E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	4.2836E+16	0.0000E+00
Elemental I (atoms)	7.1148E+13	0.0000E+00
Organic I (atoms)	2.2158E+12	0.0000E+00
Aerosols (kg)	8.2508E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	9.0057E-12	2.8322E-19	2.9406E+06	1.6383E+04
Co-60	1.0813E-11	9.5654E-18	9.6006E+07	1.9642E+04
Kr-85	5.1250E-04	1.3063E-09	9.2549E+15	3.4820E+11
Kr-85m	2.4499E-03	2.9770E-13	2.1091E+12	3.0147E+12
Kr-87	2.1650E-04	7.6434E-15	5.2908E+10	2.1275E+12

Kr-88	3.2631E-03	2.6023E-13	1.7808E+12	6.0337E+12
Rb-86	1.6638E-07	2.0447E-15	1.4318E+10	1.1350E+10
Sr-89	1.5247E-08	5.2480E-16	3.5511E+09	2.7753E+07
Sr-90	2.0138E-09	1.4763E-14	9.8785E+10	3.6580E+06
Sr-91	1.0627E-08	2.9317E-18	1.9401E+07	2.5465E+07
Sr-92	2.5658E-09	2.0413E-19	1.3362E+06	1.3136E+07
Y-90	1.6073E-10	2.9543E-19	1.9768E+06	1.5486E+05
Y-91	2.1267E-10	8.6720E-18	5.7389E+07	3.6969E+05
Y-92	4.2533E-09	4.4202E-19	2.8934E+06	7.1005E+06
Y-93	1.2668E-10	3.7969E-20	2.4586E+05	2.9845E+05
Zr-95	2.3646E-10	1.1007E-17	6.9773E+07	4.3023E+05
Zr-97	1.6548E-10	8.6565E-20	5.3743E+05	3.5056E+05
Nb-95	2.3776E-10	6.0804E-18	3.8544E+07	4.3189E+05
Mo-99	2.7926E-09	5.8225E-18	3.5418E+07	5.2738E+06
Tc-99m	2.6094E-09	4.9625E-19	3.0187E+06	4.7973E+06
Ru-103	2.6200E-09	8.1181E-17	4.7465E+08	4.7721E+06
Ru-105	5.3896E-10	8.0179E-20	4.5985E+05	1.8039E+06
Ru-106	1.1457E-09	3.4244E-16	1.9455E+09	2.0817E+06
Rh-105	1.6588E-09	1.9652E-18	1.1271E+07	3.1312E+06
Sb-127	2.8493E-09	1.0669E-17	5.0592E+07	5.3212E+06
Sb-129	2.5898E-09	4.6055E-19	2.1500E+06	8.8252E+06
Te-127	2.9557E-09	1.1200E-18	5.3107E+06	5.3896E+06
Te-127m	5.1295E-10	5.4381E-17	2.5787E+08	9.3173E+05
Te-129	3.9163E-09	1.8700E-19	8.7299E+05	1.0776E+07
Te-129m	1.6864E-09	5.5979E-17	2.6133E+08	3.0680E+06
Te-131m	5.2853E-09	6.6281E-18	3.0470E+07	1.0463E+07
Te-132	4.2496E-08	1.3998E-16	6.3861E+08	7.9767E+07
I-131	6.7358E-05	5.4332E-13	2.4977E+12	4.6464E+12
I-132	9.3682E-06	9.0758E-16	4.1406E+09	4.7159E+12
I-133	1.1050E-04	9.7548E-14	4.4169E+11	9.2572E+12
I-134	2.9447E-07	1.1039E-17	4.9609E+07	4.6124E+12
I-135	5.8921E-05	1.6778E-14	7.4843E+10	7.9167E+12
Xe-133	5.2817E-02	2.8217E-10	1.2776E+15	3.6569E+13
Xe-135	1.4369E-02	5.6265E-12	2.5099E+13	1.2867E+13
Cs-134	1.8422E-05	1.4238E-11	6.3987E+13	1.2444E+12
Cs-136	5.4165E-06	7.3904E-14	3.2725E+11	3.7108E+11
Cs-137	1.4828E-05	1.7047E-10	7.4936E+14	1.0014E+12
Ba-139	4.3573E-10	2.6639E-20	1.1541E+05	7.0754E+06
Ba-140	2.3212E-08	3.1707E-16	1.3639E+09	4.2518E+07
La-140	2.7761E-09	4.9946E-18	2.1484E+07	2.5901E+06
La-141	5.4192E-11	9.5824E-21	4.0926E+04	1.9733E+05
Ce-141	5.5505E-10	1.9480E-17	8.3200E+07	1.0110E+06
Ce-143	4.5556E-10	6.8600E-19	2.8889E+06	8.9476E+05
Ce-144	4.4755E-10	1.4032E-16	5.8683E+08	8.1327E+05
Pr-143	2.1341E-10	3.1692E-18	1.3346E+07	3.8385E+05
Nd-147	8.5635E-11	1.0585E-18	4.3365E+06	1.5707E+05
Np-239	5.7534E-09	2.4800E-17	6.2489E+07	1.0937E+07
Pu-238	1.8083E-12	1.0563E-16	2.6727E+08	3.2846E+03
Pu-239	1.5853E-13	2.5504E-15	6.4264E+09	2.8782E+02
Pu-240	2.9664E-13	1.3018E-15	3.2666E+09	5.3884E+02
Pu-241	6.3935E-11	6.2065E-16	1.5509E+09	1.1614E+05
Am-241	4.2914E-14	1.2504E-17	3.1244E+07	7.7874E+01
Cm-242	1.0857E-11	3.2760E-18	8.1522E+06	1.9735E+04
Cm-244	7.1853E-13	8.8815E-18	2.1920E+07	1.3052E+03

CR Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	1.0562E+16	0.0000E+00	
Elemental I (atoms)	1.4627E+11	0.0000E+00	
Organic I (atoms)	9.6257E+09	0.0000E+00	
Aerosols (kg)	1.8543E-10	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.0599E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5713E-14
Total I (Ci)			2.4644E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5054E+16
Elemental I (atoms)	0.0000E+00	7.2805E+13
Organic I (atoms)	0.0000E+00	2.2711E+12

Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.8388E+16
Elemental I (atoms)	1.6326E+10	5.0492E+08
Organic I (atoms)	4.2836E+10	1.3248E+09
Aerosols (kg)	1.6823E-11	5.2030E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	4.2836E+16	0.0000E+00
Elemental I (atoms)	7.1148E+13	0.0000E+00
Organic I (atoms)	2.2158E+12	0.0000E+00
Aerosols (kg)	8.2508E-08	0.0000E+00

EAB Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3607E+00	2.6591E-01	1.3703E+00
Accumulated dose (rem)	2.8034E+00	1.0891E+00	2.8542E+00

LPZ Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.0901E+01	3.1056E+00	3.1013E+01
Accumulated dose (rem)	1.2479E+02	6.5059E+01	1.2797E+02

CR Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	7.5626E-04	5.5005E-02	3.2311E-03
Accumulated dose (rem)	5.5768E-03	2.3831E+01	1.0582E+00

DW Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	3.5450E-03	1.1148E-10	1.1575E+15	4.3696E+15
Co-60	4.2831E-03	3.7890E-09	3.8030E+16	5.2325E+15
Kr-85	1.3294E+06	3.3884E+00	2.4006E+25	4.0890E+21
Kr-85m	5.3460E+05	6.4962E-05	4.6025E+20	1.5591E+22
Kr-87	9.1606E+01	3.2340E-09	2.2386E+16	5.9950E+21
Kr-88	1.7048E+05	1.3596E-05	9.3040E+19	2.5011E+22
Rb-86	1.1911E-01	1.4639E-09	1.0251E+16	3.1512E+17
Sr-89	5.9859E+00	2.0604E-07	1.3942E+18	7.4059E+18
Sr-90	7.9787E-01	5.8492E-06	3.9138E+19	9.7447E+17
Sr-91	1.3103E+00	3.6145E-10	2.3920E+15	8.3919E+18
Sr-92	1.6977E-02	1.3506E-12	8.8409E+12	6.9593E+18
Y-90	1.7688E-01	3.2511E-10	2.1754E+15	1.0486E+16
Y-91	9.0956E-02	3.7089E-09	2.4544E+16	9.4035E+16
Y-92	1.6075E-01	1.6706E-11	1.0935E+14	1.1773E+17
Y-93	1.6740E-02	5.0174E-12	3.2490E+13	9.7157E+16
Zr-95	9.3014E-02	4.3297E-09	2.7446E+16	1.1476E+17
Zr-97	3.4016E-02	1.7794E-11	1.1047E+14	1.0542E+17
Nb-95	9.4183E-02	2.4086E-09	1.5268E+16	1.1506E+17
Mo-99	9.3531E-01	1.9501E-09	1.1863E+16	1.4497E+18
Tc-99m	9.3702E-01	1.7820E-10	1.0840E+15	1.2912E+18
Ru-103	1.0260E+00	3.1789E-08	1.8586E+17	1.2741E+18
Ru-105	1.7567E-02	2.6133E-12	1.4989E+13	7.4531E+17
Ru-106	4.5336E-01	1.3551E-07	7.6987E+17	5.5466E+17
Rh-105	5.0027E-01	5.9270E-10	3.3994E+15	8.5043E+17
Sb-127	1.0012E+00	3.7492E-09	1.7778E+16	1.4498E+18
Sb-129	7.8755E-02	1.4005E-11	6.5379E+13	3.6877E+18
Te-127	1.1176E+00	4.2348E-10	2.0081E+15	1.4423E+18
Te-127m	2.0319E-01	2.1541E-08	1.0215E+17	2.4820E+17
Te-129	6.8143E-01	3.2539E-11	1.5190E+14	3.8605E+18
Te-129m	6.6015E-01	2.1913E-08	1.0230E+17	8.1782E+17
Te-131m	1.4469E+00	1.8145E-09	8.3416E+15	2.9857E+18

Te-132	1.4611E+01	4.8128E-08	2.1957E+17	2.1821E+19
I-131	2.9118E+04	2.3487E-04	1.0797E+21	2.3794E+20
I-132	7.6901E+01	7.4501E-09	3.3989E+16	2.3109E+20
I-133	2.9656E+04	2.6179E-05	1.1854E+20	4.3071E+20
I-134	4.3177E-04	1.6185E-14	7.2740E+10	2.0783E+20
I-135	5.0339E+03	1.4334E-06	6.3941E+18	3.2743E+20
Xe-133	1.2546E+08	6.7025E-01	3.0348E+24	4.1126E+23
Xe-135	1.1003E+07	4.3086E-03	1.9220E+22	9.1518E+22
Cs-134	1.3511E+01	1.0443E-05	4.6931E+19	3.4511E+19
Cs-136	3.8373E+00	5.2357E-08	2.3184E+17	1.0308E+19
Cs-137	1.0882E+01	1.2510E-04	5.4992E+20	2.7772E+19
Ba-139	5.5300E-05	3.3808E-15	1.4647E+10	6.3347E+18
Ba-140	8.8693E+00	1.2115E-07	5.2113E+17	1.1404E+19
La-140	2.9552E+00	5.3167E-09	2.2870E+16	1.2737E+17
La-141	1.2773E-03	2.2586E-13	9.6464E+11	8.5923E+16
La-142	1.7742E-06	1.2394E-16	5.2562E+08	6.0277E+16
Ce-141	2.1697E-01	7.6148E-09	3.2523E+16	2.6987E+17
Ce-143	1.2898E-01	1.9422E-10	8.1793E+14	2.5375E+17
Ce-144	1.7704E-01	5.5507E-08	2.3213E+17	2.1671E+17
Pr-143	8.6702E-02	1.2876E-09	5.4222E+15	1.0134E+17
Nd-147	3.2532E-02	4.0213E-10	1.6474E+15	4.2174E+16
Np-239	1.8734E+00	8.0754E-09	2.0348E+16	3.0223E+18
Pu-238	7.1653E-04	4.1854E-08	1.0590E+17	8.7498E+14
Pu-239	6.2919E-05	1.0123E-06	2.5506E+18	7.6644E+13
Pu-240	1.1753E-04	5.1580E-07	1.2943E+18	1.4354E+14
Pu-241	2.5330E-02	2.4589E-07	6.1443E+17	3.0938E+16
Am-241	1.7076E-05	4.9752E-09	1.2432E+16	2.0728E+13
Cm-242	4.2897E-03	1.2943E-09	3.2209E+15	5.2600E+15
Cm-244	2.8467E-04	3.5187E-09	8.6845E+15	3.4770E+14

DW Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7061E+25	0.0000E+00	
Elemental I (atoms)	3.4945E+19	4.8566E+22	
Organic I (atoms)	1.1674E+21	0.0000E+00	
Aerosols (kg)	1.4446E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		8.0518E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		8.8209E-06
Total I (Ci)			6.3885E+04

DW to RB Transport Group Inventory:

Time (h) = 24.0000	Leakage Transport
Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1203E+18
Organic I (atoms)	1.8784E+19
Aerosols (kg)	1.6832E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 24.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.2356E+23
Elemental I (atoms)	0.0000E+00	9.9875E+17
Organic I (atoms)	0.0000E+00	5.9378E+18
Aerosols (kg)	0.0000E+00	8.8403E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 24.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.2356E+23
Elemental I (atoms)	0.0000E+00	9.9875E+17
Organic I (atoms)	0.0000E+00	5.9378E+18
Aerosols (kg)	0.0000E+00	8.8403E-04

RB Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	1.7199E-05	5.4088E-13	5.6159E+12	8.2260E+12
Co-60	2.0780E-05	1.8383E-11	1.8451E+14	9.8617E+12
Kr-85	2.4926E+03	6.3532E-03	4.5011E+22	6.6621E+18
Kr-85m	1.0024E+03	1.2180E-07	8.6294E+17	1.9712E+19
Kr-87	1.7176E-01	6.0637E-12	4.1973E+13	4.2989E+18

Kr-88	3.1964E+02	2.5491E-08	1.7445E+17	2.7068E+19
Rb-86	8.4439E-04	1.0378E-11	7.2669E+13	5.8397E+14
Sr-89	2.9041E-02	9.9963E-10	6.7639E+15	1.3935E+16
Sr-90	3.8709E-03	2.8378E-08	1.8988E+17	1.8366E+15
Sr-91	6.3569E-03	1.7536E-12	1.1605E+13	1.3028E+16
Sr-92	8.2364E-05	6.5527E-15	4.2893E+10	7.4871E+15
Y-90	8.7037E-04	1.5998E-12	1.0704E+13	7.5177E+13
Y-91	4.4379E-04	1.8096E-11	1.1976E+14	1.8487E+14
Y-92	8.0326E-04	8.3479E-14	5.4643E+11	2.8875E+15
Y-93	8.1214E-05	2.4343E-14	1.5763E+11	1.5243E+14
Zr-95	4.5127E-04	2.1006E-11	1.3316E+14	2.1602E+14
Zr-97	1.6503E-04	8.6329E-14	5.3597E+11	1.7738E+14
Nb-95	4.5694E-04	1.1685E-11	7.4075E+13	2.1684E+14
Mo-99	4.5378E-03	9.4613E-12	5.7553E+13	2.6510E+15
Tc-99m	4.5460E-03	8.6455E-13	5.2590E+12	2.4043E+15
Ru-103	4.9775E-03	1.5423E-10	9.0173E+14	2.3962E+15
Ru-105	8.5228E-05	1.2679E-14	7.2718E+10	9.6299E+14
Ru-106	2.1995E-03	6.5744E-10	3.7351E+15	1.0452E+15
Rh-105	2.4271E-03	2.8756E-12	1.6492E+13	1.5684E+15
Sb-127	4.8576E-03	1.8190E-11	8.6253E+13	2.6738E+15
Sb-129	3.8209E-04	6.7946E-14	3.1719E+11	4.7235E+15
Te-127	5.4221E-03	2.0545E-12	9.7423E+12	2.7031E+15
Te-127m	9.8579E-04	1.0451E-10	4.9557E+14	4.6780E+14
Te-129	3.3060E-03	1.5786E-13	7.3696E+11	5.5902E+15
Te-129m	3.2028E-03	1.0632E-10	4.9631E+14	1.5402E+15
Te-131m	7.0199E-03	8.8035E-12	4.0470E+13	5.2708E+15
Te-132	7.0888E-02	2.3350E-10	1.0653E+15	4.0088E+16
I-131	5.4873E+01	4.4262E-07	2.0347E+18	4.1821E+17
I-132	1.9621E-01	1.9008E-11	8.6720E+13	2.4677E+17
I-133	5.5886E+01	4.9334E-08	2.2338E+17	7.1175E+17
I-134	8.1368E-07	3.0502E-17	1.3708E+08	1.1581E+17
I-135	9.4863E+00	2.7012E-09	1.2050E+16	4.6336E+17
Xe-133	2.3523E+05	1.2567E-03	5.6902E+21	6.6530E+20
Xe-135	2.0630E+04	8.0784E-06	3.6036E+19	1.3298E+20
Cs-134	9.5779E-02	7.4028E-08	3.3269E+17	6.4240E+16
Cs-136	2.7202E-02	3.7116E-10	1.6435E+15	1.9065E+16
Cs-137	7.7140E-02	8.8686E-07	3.8984E+18	5.1701E+16
Ba-139	2.6829E-07	1.6402E-17	7.1062E+07	4.8206E+15
Ba-140	4.3030E-02	5.8778E-10	2.5283E+15	2.1352E+16
La-140	1.4534E-02	2.6148E-11	1.1248E+14	1.2457E+15
La-141	6.1970E-06	1.0958E-15	4.6801E+09	1.0666E+14
La-142	8.6077E-09	6.0130E-19	2.5501E+06	4.8953E+13
Ce-141	1.0525E-03	3.6938E-11	1.5776E+14	5.0761E+14
Ce-143	6.2576E-04	9.4229E-13	3.9683E+12	4.5056E+14
Ce-144	8.5892E-04	2.6930E-10	1.1262E+15	4.0833E+14
Pr-143	4.2110E-04	6.2535E-12	2.6335E+13	1.9260E+14
Nd-147	1.5783E-04	1.9510E-12	7.9925E+12	7.8881E+13
Np-239	9.0891E-03	3.9179E-11	9.8720E+13	5.4991E+15
Pu-238	3.4763E-06	2.0306E-10	5.1380E+14	1.6492E+12
Pu-239	3.0526E-07	4.9111E-09	1.2375E+16	1.4451E+11
Pu-240	5.7023E-07	2.5025E-09	6.2792E+15	2.7054E+11
Pu-241	1.2289E-04	1.1930E-09	2.9810E+15	5.8311E+13
Am-241	8.2850E-08	2.4139E-11	6.0319E+13	3.9098E+10
Cm-242	2.0812E-05	6.2795E-12	1.5626E+13	9.9088E+12
Cm-244	1.3811E-06	1.7071E-11	4.2134E+13	6.5532E+11

RB Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump		
Noble gases (atoms)	5.0739E+22	0.0000E+00		
Elemental I (atoms)	6.6063E+16	0.0000E+00		
Organic I (atoms)	2.1890E+18	0.0000E+00		
Aerosols (kg)	1.0052E-06	0.0000E+00		
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.9207E-09	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.1042E-09	
Total I (Ci)			1.2044E+02	

DW to RB Transport Group Inventory:

Time (h) = 24.0000	Leakage Transport
Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1203E+18
Organic I (atoms)	1.8784E+19

Aerosols (kg) 1.6832E-03

RB to Environment Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.4206E+23
Elemental I (atoms)	1.9003E+18	7.9520E+16
Organic I (atoms)	1.5644E+19	4.8449E+17
Aerosols (kg)	1.6158E-03	7.3542E-05

Environment Integral Nuclide Release:

Time (h) = 24.0000	Ci	kg	Atoms	Bq
Co-58	6.2381E-04	1.9618E-11	2.0369E+14	2.3081E+07
Co-60	7.4789E-04	6.6162E-10	6.6406E+15	2.7672E+07
Kr-85	1.6671E+04	4.2492E-02	3.0105E+23	6.1684E+14
Kr-85m	4.8025E+04	5.8357E-06	4.1345E+19	1.7769E+15
Kr-87	1.0243E+04	3.6161E-07	2.5031E+18	3.7898E+14
Kr-88	6.5679E+04	5.2379E-06	3.5845E+19	2.4301E+15
Rb-86	6.5173E-02	8.0097E-10	5.6088E+15	2.4114E+09
Sr-89	1.0567E+00	3.6374E-08	2.4612E+17	3.9099E+10
Sr-90	1.3929E-01	1.0211E-06	6.8325E+18	5.1536E+09
Sr-91	9.8023E-01	2.7041E-10	1.7895E+15	3.6269E+10
Sr-92	5.5475E-01	4.4135E-11	2.8890E+14	2.0526E+10
Y-90	5.9668E-03	1.0967E-11	7.3384E+13	2.2077E+08
Y-91	1.4052E-02	5.7300E-10	3.7920E+15	5.1993E+08
Y-92	2.2929E-01	2.3829E-11	1.5598E+14	8.4837E+09
Y-93	1.1474E-02	3.4390E-12	2.2269E+13	4.2453E+08
Zr-95	1.6382E-02	7.6254E-10	4.8338E+15	6.0612E+08
Zr-97	1.3389E-02	7.0038E-12	4.3482E+13	4.9539E+08
Nb-95	1.6446E-02	4.2057E-10	2.6660E+15	6.0849E+08
Mo-99	2.0079E-01	4.1864E-10	2.5466E+15	7.4291E+09
Tc-99m	1.8339E-01	3.4877E-11	2.1215E+14	6.7854E+09
Ru-103	1.8170E-01	5.6300E-09	3.2917E+16	6.7230E+09
Ru-105	7.1923E-02	1.0700E-11	6.1366E+13	2.6611E+09
Ru-106	7.9262E-02	2.3692E-08	1.3460E+17	2.9327E+09
Rh-105	1.1887E-01	1.4083E-10	8.0770E+14	4.3981E+09
Sb-127	2.0259E-01	7.5860E-10	3.5972E+15	7.4957E+09
Sb-129	3.5266E-01	6.2712E-11	2.9276E+14	1.3048E+10
Te-127	2.0580E-01	7.7980E-11	3.6977E+14	7.6145E+09
Te-127m	3.5477E-02	3.7612E-09	1.7835E+16	1.3127E+09
Te-129	4.3043E-01	2.0553E-11	9.5949E+13	1.5926E+10
Te-129m	1.1680E-01	3.8771E-09	1.8100E+16	4.3216E+09
Te-131m	3.9863E-01	4.9991E-10	2.2981E+15	1.4749E+10
Te-132	3.0369E+00	1.0003E-08	4.5636E+16	1.1236E+11
I-131	4.0155E+01	3.2389E-07	1.4890E+18	1.4857E+12
I-132	3.0243E+01	2.9299E-09	1.3367E+16	1.1190E+12
I-133	7.1239E+01	6.2887E-08	2.8475E+17	2.6358E+12
I-134	2.5017E+01	9.3777E-10	4.2145E+15	9.2562E+11
I-135	5.1079E+01	1.4545E-08	6.4881E+16	1.8899E+12
Xe-133	1.6619E+06	8.8788E-03	4.0202E+22	6.1492E+16
Xe-135	3.2667E+05	1.2792E-04	5.7063E+20	1.2087E+16
Cs-134	7.1584E+00	5.5327E-06	2.4865E+19	2.6486E+11
Cs-136	2.1292E+00	2.9052E-08	1.2864E+17	7.8781E+10
Cs-137	5.7610E+00	6.6232E-05	2.9114E+20	2.1316E+11
Ba-139	3.5074E-01	2.1443E-11	9.2899E+13	1.2977E+10
Ba-140	1.6188E+00	2.2112E-08	9.5116E+16	5.9896E+10
La-140	9.9252E-02	1.7857E-10	7.6811E+14	3.6723E+09
La-141	7.9527E-03	1.4062E-12	6.0060E+12	2.9425E+08
La-142	3.5752E-03	2.4975E-13	1.0592E+12	1.3228E+08
Ce-141	3.8493E-02	1.3509E-09	5.7698E+15	1.4242E+09
Ce-143	3.4084E-02	5.1325E-11	2.1614E+14	1.2611E+09
Ce-144	3.0966E-02	9.7089E-09	4.0603E+16	1.1458E+09
Pr-143	1.4615E-02	2.1704E-10	9.1404E+14	5.4077E+08
Nd-147	5.9802E-03	7.3922E-11	3.0284E+14	2.2127E+08
Np-239	4.1641E-01	1.7949E-09	4.5228E+15	1.5407E+10
Pu-238	1.2507E-04	7.3055E-09	1.8485E+16	4.6275E+06
Pu-239	1.0959E-05	1.7632E-07	4.4428E+17	4.0550E+05
Pu-240	2.0517E-05	9.0040E-08	2.2593E+17	7.5913E+05
Pu-241	4.4221E-03	4.2928E-08	1.0727E+17	1.6362E+08
Am-241	2.9652E-06	8.6396E-10	2.1589E+15	1.0971E+05

Cm-242	7.5144E-04	2.2673E-10	5.6421E+14	2.7803E+07
Cm-244	4.9698E-05	6.1429E-10	1.5161E+15	1.8388E+06

Environment Transport Group Inventory:

Time (h) = 24.0000	Total Release	Release Rate/s		
Noble gases (atoms)	3.4191E+23	3.9572E+18		
Elemental I (atoms)	7.9381E+16	9.1876E+11		
Organic I (atoms)	4.8219E+17	5.5809E+12		
Aerosols (kg)	7.3540E-05	8.5116E-10		
Dose Effective (Ci) I-131 (Thyroid)			5.3696E+01	
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			6.4963E+01	
Total I (Ci)			2.1773E+02	

RB to Environment Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.4206E+23
Elemental I (atoms)	1.9003E+18	7.9520E+16
Organic I (atoms)	1.5644E+19	4.8449E+17
Aerosols (kg)	1.6158E-03	7.3542E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9443E+16
Elemental I (atoms)	0.0000E+00	7.2807E+13
Organic I (atoms)	0.0000E+00	2.3184E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0576E+17
Elemental I (atoms)	2.0470E+10	6.3308E+08
Organic I (atoms)	1.4616E+11	4.5204E+09
Aerosols (kg)	1.8116E-11	5.6027E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	1.5595E+17	0.0000E+00
Elemental I (atoms)	7.1294E+13	0.0000E+00
Organic I (atoms)	2.2715E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	4.4603E-14	1.4027E-21	1.4564E+04	1.9375E+04
Co-60	5.3890E-14	4.7674E-20	4.7850E+05	2.3238E+04
Kr-85	4.4709E-04	1.1396E-09	8.0736E+15	1.3008E+12
Kr-85m	1.7979E-04	2.1847E-14	1.5478E+11	4.7070E+12
Kr-87	3.0808E-08	1.0876E-18	7.5286E+06	2.1749E+12
Kr-88	5.7333E-05	4.5723E-15	3.1290E+10	7.5694E+12
Rb-86	3.0245E-12	3.7170E-20	2.6028E+05	1.1377E+10
Sr-89	7.5316E-11	2.5924E-18	1.7541E+07	3.2817E+07
Sr-90	1.0039E-11	7.3594E-17	4.9244E+08	4.3279E+06
Sr-91	1.6486E-11	4.5478E-21	3.0096E+04	2.8426E+07
Y-90	2.2636E-12	4.1605E-21	2.7839E+04	2.2467E+05
Y-91	1.1522E-12	4.6984E-20	3.1093E+05	4.4189E+05
Zr-95	1.1703E-12	5.4476E-20	3.4533E+05	5.0879E+05
Nb-95	1.1850E-12	3.0305E-20	1.9211E+05	5.1096E+05
Mo-99	1.1768E-11	2.4537E-20	1.4926E+05	6.1774E+06
Tc-99m	1.1790E-11	2.2421E-21	1.3639E+04	5.6399E+06
Ru-103	1.2909E-11	3.9997E-19	2.3385E+06	5.6419E+06
Ru-106	5.7042E-12	1.7050E-18	9.6865E+06	2.4626E+06

Rh-105	6.2945E-12	7.4574E-21	4.2771E+04	3.6616E+06
Sb-127	1.2598E-11	4.7173E-20	2.2369E+05	6.2504E+06
Te-127	1.4062E-11	5.3282E-21	2.5265E+04	6.3570E+06
Te-127m	2.5565E-12	2.7103E-19	1.2852E+06	1.1023E+06
Te-129m	8.3060E-12	2.7572E-19	1.2871E+06	3.6279E+06
Te-131m	1.8205E-11	2.2831E-20	1.0495E+05	1.2119E+07
Te-132	1.8384E-10	6.0555E-19	2.7626E+06	9.3577E+07
I-131	9.7633E-08	7.8752E-16	3.6203E+09	4.6577E+12
I-132	4.1714E-10	4.0412E-20	1.8437E+05	4.7170E+12
I-133	9.9435E-08	8.7778E-17	3.9745E+08	9.2750E+12
I-135	1.6878E-08	4.8061E-18	2.1439E+07	7.9254E+12
Xe-133	4.2192E-02	2.2541E-10	1.0206E+15	1.3054E+14
Xe-135	3.7001E-03	1.4489E-12	6.4634E+12	2.8312E+13
Cs-134	3.4306E-10	2.6515E-16	1.1916E+09	1.2474E+12
Cs-136	9.7434E-11	1.3294E-18	5.8867E+06	3.7198E+11
Cs-137	2.7630E-10	3.1765E-15	1.3963E+10	1.0039E+12
Ba-140	1.1159E-10	1.5243E-18	6.5569E+06	5.0192E+07
La-140	3.7794E-11	6.7996E-20	2.9249E+05	3.7930E+06
Ce-141	2.7294E-12	9.5792E-20	4.0913E+05	1.1952E+06
Ce-143	1.6228E-12	2.4437E-21	1.0291E+04	1.0383E+06
Ce-144	2.2275E-12	6.9839E-19	2.9207E+06	9.6209E+05
Pr-143	1.0923E-12	1.6221E-20	6.8312E+04	4.5520E+05
Nd-147	4.0931E-13	5.0596E-21	2.0728E+04	1.8536E+05
Np-239	2.3572E-11	1.0161E-19	2.5602E+05	1.2790E+07
Pu-238	9.0154E-15	5.2661E-19	1.3325E+06	3.8861E+03
Pu-239	7.9165E-16	1.2736E-17	3.2092E+07	3.4057E+02
Pu-240	1.4788E-15	6.4898E-18	1.6284E+07	6.3750E+02
Pu-241	3.1870E-13	3.0938E-18	7.7308E+06	1.3740E+05
Am-241	2.1486E-16	6.2603E-20	1.5643E+05	9.2157E+01
Cm-242	5.3973E-14	1.6285E-20	4.0525E+04	2.3345E+04
Cm-244	3.5818E-15	4.4273E-20	1.0927E+05	1.5442E+03

CR Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	9.1008E+15	0.0000E+00	
Elemental I (atoms)	1.1804E+08	0.0000E+00	
Organic I (atoms)	3.8690E+09	0.0000E+00	
Aerosols (kg)	3.5597E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.0096E-17
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.3927E-17
Total I (Ci)			2.1436E-07

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9443E+16
Elemental I (atoms)	0.0000E+00	7.2807E+13
Organic I (atoms)	0.0000E+00	2.3184E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0576E+17
Elemental I (atoms)	2.0470E+10	6.3308E+08
Organic I (atoms)	1.4616E+11	4.5204E+09
Aerosols (kg)	1.8116E-11	5.6027E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	1.5595E+17	0.0000E+00
Elemental I (atoms)	7.1294E+13	0.0000E+00
Organic I (atoms)	2.2715E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

EAB Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE

Delta dose (rem)	8.6830E-01	3.8280E-01	8.8006E-01
Accumulated dose (rem)	3.6718E+00	1.4719E+00	3.7343E+00

LPZ Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.2190E+00	2.3811E+00	8.2922E+00
Accumulated dose (rem)	1.3301E+02	6.7440E+01	1.3626E+02

CR Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5411E-04	5.2086E-04	1.7014E-04
Accumulated dose (rem)	5.7309E-03	2.3831E+01	1.0583E+00

DW Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	3.3198E-03	1.0440E-10	1.0840E+15	4.4025E+15
Co-60	4.1260E-03	3.6501E-09	3.6636E+16	5.2728E+15
Kr-85	1.2814E+06	3.2660E+00	2.3139E+25	1.6604E+22
Kr-85m	7.4869E+00	9.0976E-10	6.4455E+15	1.6050E+22
Kr-88	3.8386E-03	3.0613E-13	2.0949E+12	2.5104E+22
Rb-86	1.0276E-01	1.2629E-09	8.8433E+15	3.1618E+17
Sr-89	5.5399E+00	1.9069E-07	1.2903E+18	7.4612E+18
Sr-90	7.6930E-01	5.6397E-06	3.7737E+19	9.8198E+17
Sr-91	6.6087E-03	1.8231E-12	1.2065E+13	8.3943E+18
Sr-92	1.6453E-10	1.3090E-20	8.5685E+04	6.9594E+18
Y-90	4.9708E-01	9.1365E-10	6.1134E+15	1.3901E+16
Y-91	8.8124E-02	3.5934E-09	2.3780E+16	9.4904E+16
Y-92	1.6085E-07	1.6717E-17	1.0942E+08	1.1785E+17
Y-93	1.1536E-04	3.4576E-14	2.2389E+11	9.7189E+16
Zr-95	8.6832E-02	4.0419E-09	2.5622E+16	1.1563E+17
Zr-97	1.7118E-03	8.9542E-13	5.5591E+12	1.0553E+17
Nb-95	9.0631E-02	2.3178E-09	1.4692E+16	1.1594E+17
Mo-99	4.2346E-01	8.8291E-10	5.3707E+15	1.4559E+18
Tc-99m	4.3414E-01	8.2564E-11	5.0223E+14	1.2972E+18
Ru-103	9.3840E-01	2.9076E-08	1.7000E+17	1.2835E+18
Ru-105	2.2253E-07	3.3104E-17	1.8986E+08	7.4532E+17
Ru-106	4.3475E-01	1.2995E-07	7.3827E+17	5.5892E+17
Rh-105	1.1822E-01	1.4007E-10	8.0334E+14	8.5297E+17
Sb-127	5.6263E-01	2.1068E-09	9.9901E+15	1.4570E+18
Sb-129	7.3006E-07	1.2983E-16	6.0607E+08	3.6878E+18
Te-127	7.3075E-01	2.7689E-10	1.3130E+15	1.4508E+18
Te-127m	1.9479E-01	2.0650E-08	9.7920E+16	2.5010E+17
Te-129	5.1754E-01	2.4713E-11	1.1537E+14	3.8645E+18
Te-129m	5.9852E-01	1.9868E-08	9.2748E+16	8.2385E+17
Te-131m	2.6438E-01	3.3155E-10	1.5241E+15	2.9924E+18
Te-132	7.4435E+00	2.4518E-08	1.1186E+17	2.1923E+19
I-131	2.1682E+04	1.7489E-04	8.0396E+20	4.7973E+20
I-132	8.8846E+00	8.6073E-10	3.9268E+15	2.3122E+20
I-133	2.5962E+03	2.2918E-06	1.0377E+19	5.3723E+20
I-135	2.5536E+00	7.2714E-10	3.2437E+15	3.3379E+20
Xe-133	8.1392E+07	4.3483E-01	1.9689E+24	1.3877E+24
Xe-135	4.3830E+04	1.7163E-05	7.6561E+19	1.1054E+23
Cs-134	1.2994E+01	1.0043E-05	4.5134E+19	3.4638E+19
Cs-136	3.1574E+00	4.3081E-08	1.9076E+17	1.0341E+19
Cs-137	1.0492E+01	1.2062E-04	5.3023E+20	2.7875E+19
Ba-140	7.2653E+00	9.9241E-08	4.2689E+17	1.1481E+19
La-140	6.3875E+00	1.1492E-08	4.9432E+16	1.7645E+17
La-141	3.7626E-09	6.6532E-19	2.8416E+06	8.5924E+16
Ce-141	1.9628E-01	6.8886E-09	2.9422E+16	2.7185E+17
Ce-143	2.7414E-02	4.1282E-11	1.7385E+14	2.5438E+17
Ce-144	1.6949E-01	5.3140E-08	2.2223E+17	2.1837E+17
Pr-143	8.0683E-02	1.1982E-09	5.0458E+15	1.0216E+17
Nd-147	2.5960E-02	3.2090E-10	1.3146E+15	4.2453E+16
Np-239	7.4715E-01	3.2206E-09	8.1150E+15	3.0341E+18
Pu-238	6.9123E-04	4.0376E-08	1.0216E+17	8.8173E+14
Pu-239	6.0962E-05	9.8078E-07	2.4713E+18	7.7238E+13
Pu-240	1.1335E-04	4.9743E-07	1.2482E+18	1.4465E+14
Pu-241	2.4418E-02	2.3704E-07	5.9231E+17	3.1177E+16
Am-241	1.6789E-05	4.8917E-09	1.2223E+16	2.0890E+13

Cm-242	4.0844E-03	1.2324E-09	3.0667E+15	5.3002E+15
Cm-244	2.7445E-04	3.3923E-09	8.3726E+15	3.5038E+14

DW Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5108E+25	0.0000E+00	
Elemental I (atoms)	2.3622E+19	4.8566E+22	
Organic I (atoms)	7.8918E+20	0.0000E+00	
Aerosols (kg)	1.3906E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.2063E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.2680E-06
Total I (Ci)			2.4289E+04

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	2.7618E+18
Organic I (atoms)	4.0213E+19
Aerosols (kg)	1.6864E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 96.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 96.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

RB Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	3.1091E-06	9.7777E-14	1.0152E+12	8.2615E+12
Co-60	3.8642E-06	3.4185E-12	3.4311E+13	9.9051E+12
Kr-85	1.2001E+03	3.0588E-03	2.1671E+22	1.8801E+19
Kr-85m	7.0118E-03	8.5203E-13	6.0365E+12	2.0256E+19
Kr-88	3.5950E-06	2.8670E-16	1.9620E+09	2.7186E+19
Rb-86	9.6237E-05	1.1827E-12	8.2822E+12	5.8521E+14
Sr-89	5.1883E-03	1.7859E-10	1.2084E+15	1.3995E+16
Sr-90	7.2048E-04	5.2819E-09	3.5342E+16	1.8447E+15
Sr-91	6.1893E-06	1.7074E-15	1.1299E+10	1.3032E+16
Y-90	4.6554E-04	8.5567E-13	5.7255E+12	7.8632E+13
Y-91	8.2532E-05	3.3654E-12	2.2271E+13	1.8580E+14
Y-92	1.5065E-10	1.5656E-20	1.0248E+05	2.8878E+15
Y-93	1.0804E-07	3.2382E-17	2.0969E+08	1.5248E+14
Zr-95	8.1322E-05	3.7855E-12	2.3996E+13	2.1695E+14
Zr-97	1.6031E-06	8.3860E-16	5.2064E+09	1.7752E+14
Nb-95	8.4880E-05	2.1707E-12	1.3760E+13	2.1780E+14
Mo-99	3.9659E-04	8.2689E-13	5.0299E+12	2.6580E+15
Tc-99m	4.0659E-04	7.7325E-14	4.7036E+11	2.4111E+15
Ru-103	8.7885E-04	2.7231E-11	1.5921E+14	2.4063E+15
Ru-105	2.0840E-10	3.1003E-20	1.7782E+05	9.6302E+14
Ru-106	4.0716E-04	1.2170E-10	6.9142E+14	1.0498E+15
Rh-105	1.1072E-04	1.3118E-13	7.5236E+11	1.5714E+15
Sb-127	5.2692E-04	1.9731E-12	9.3562E+12	2.6819E+15
Sb-129	6.8374E-10	1.2159E-19	5.6761E+05	4.7236E+15
Te-127	6.8438E-04	2.5932E-13	1.2297E+12	2.7125E+15
Te-127m	1.8242E-04	1.9340E-11	9.1707E+13	4.6986E+14
Te-129	4.8470E-04	2.3145E-14	1.0805E+11	5.5946E+15
Te-129m	5.6054E-04	1.8607E-11	8.6863E+13	1.5467E+15
Te-131m	2.4760E-04	3.1051E-13	1.4274E+12	5.2789E+15
Te-132	6.9711E-03	2.2962E-11	1.0476E+14	4.0202E+16
I-131	2.0306E+01	1.6379E-07	7.5295E+17	6.5382E+17
I-132	8.3208E-03	8.0611E-13	3.6777E+12	2.4692E+17

I-133	2.4314E+00	2.1464E-09	9.7186E+15	8.2008E+17
I-135	2.3916E-03	6.8100E-13	3.0378E+12	4.7053E+17
Xe-133	7.6227E+04	4.0724E-04	1.8439E+21	1.6187E+21
Xe-135	4.1048E+01	1.6074E-08	7.1703E+16	1.5360E+20
Cs-134	1.2169E-02	9.4056E-09	4.2270E+16	6.4387E+16
Cs-136	2.9571E-03	4.0347E-11	1.7866E+14	1.9105E+16
Cs-137	9.8264E-03	1.1297E-07	4.9659E+17	5.1820E+16
Ba-140	6.8043E-03	9.2943E-11	3.9980E+14	2.1436E+16
La-140	5.9821E-03	1.0763E-11	4.6296E+13	1.2959E+15
Ce-141	1.8383E-04	6.4515E-12	2.7555E+13	5.0975E+14
Ce-143	2.5675E-05	3.8662E-14	1.6282E+11	4.5131E+14
Ce-144	1.5873E-04	4.9768E-11	2.0813E+14	4.1012E+14
Pr-143	7.5563E-05	1.1221E-12	4.7256E+12	1.9348E+14
Nd-147	2.4313E-05	3.0053E-13	1.2312E+12	7.9185E+13
Np-239	6.9974E-04	3.0162E-12	7.6001E+12	5.5124E+15
Pu-238	6.4737E-07	3.7814E-11	9.5682E+13	1.6564E+12
Pu-239	5.7093E-08	9.1854E-10	2.3145E+15	1.4515E+11
Pu-240	1.0616E-07	4.6587E-10	1.1690E+15	2.7173E+11
Pu-241	2.2868E-05	2.2200E-10	5.5473E+14	5.8567E+13
Am-241	1.5724E-08	4.5813E-12	1.1448E+13	3.9273E+10
Cm-242	3.8252E-06	1.1542E-12	2.8721E+12	9.9520E+12
Cm-244	2.5703E-07	3.1771E-12	7.8413E+12	6.5821E+11

RB Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.3515E+22	0.0000E+00	
Elemental I (atoms)	2.2123E+16	0.0000E+00	
Organic I (atoms)	7.3910E+17	0.0000E+00	
Aerosols (kg)	1.3024E-07	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		6.1720E-10
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.2452E-10
Total I (Ci)			2.2748E+01

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	2.7618E+18
Organic I (atoms)	4.0213E+19
Aerosols (kg)	1.6864E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5428E+23
Elemental I (atoms)	2.5552E+18	9.9775E+16
Organic I (atoms)	3.7507E+19	1.1607E+18
Aerosols (kg)	1.6198E-03	7.3664E-05

Environment Integral Nuclide Release:

Time (h) = 96.0000	Ci	kg	Atoms	Bq
Co-58	6.2654E-04	1.9704E-11	2.0458E+14	2.3182E+07
Co-60	7.5123E-04	6.6458E-10	6.6703E+15	2.7796E+07
Kr-85	4.7331E+04	1.2064E-01	8.5471E+23	1.7512E+15
Kr-85m	4.9337E+04	5.9951E-06	4.2475E+19	1.8255E+15
Kr-87	1.0243E+04	3.6161E-07	2.5031E+18	3.7899E+14
Kr-88	6.5953E+04	5.2597E-06	3.5994E+19	2.4402E+15
Rb-86	6.5270E-02	8.0216E-10	5.6171E+15	2.4150E+09
Sr-89	1.0613E+00	3.6532E-08	2.4719E+17	3.9269E+10
Sr-90	1.3991E-01	1.0257E-06	6.8631E+18	5.1767E+09
Sr-91	9.8051E-01	2.7049E-10	1.7900E+15	3.6279E+10
Sr-92	5.5475E-01	4.4135E-11	2.8890E+14	2.0526E+10
Y-90	6.2358E-03	1.1462E-11	7.6693E+13	2.3073E+08
Y-91	1.4124E-02	5.7595E-10	3.8115E+15	5.2260E+08
Y-92	2.2931E-01	2.3831E-11	1.5599E+14	8.4844E+09
Y-93	1.1477E-02	3.4402E-12	2.2276E+13	4.2467E+08
Zr-95	1.6453E-02	7.6587E-10	4.8549E+15	6.0877E+08
Zr-97	1.3400E-02	7.0093E-12	4.3517E+13	4.9578E+08
Nb-95	1.6519E-02	4.2245E-10	2.6780E+15	6.1121E+08
Mo-99	2.0133E-01	4.1977E-10	2.5534E+15	7.4491E+09

Tc-99m	1.8394E-01	3.4981E-11	2.1279E+14	6.8058E+09
Ru-103	1.8249E-01	5.6543E-09	3.3059E+16	6.7519E+09
Ru-105	7.1925E-02	1.0700E-11	6.1368E+13	2.6612E+09
Ru-106	7.9616E-02	2.3797E-08	1.3520E+17	2.9458E+09
Rh-105	1.1910E-01	1.4110E-10	8.0928E+14	4.4067E+09
Sb-127	2.0321E-01	7.6095E-10	3.6083E+15	7.5189E+09
Sb-129	3.5267E-01	6.2714E-11	2.9277E+14	1.3049E+10
Te-127	2.0654E-01	7.8263E-11	3.7111E+14	7.6421E+09
Te-127m	3.5636E-02	3.7779E-09	1.7914E+16	1.3185E+09
Te-129	4.3088E-01	2.0575E-11	9.6049E+13	1.5943E+10
Te-129m	1.1730E-01	3.8938E-09	1.8178E+16	4.3402E+09
Te-131m	3.9925E-01	5.0069E-10	2.3017E+15	1.4772E+10
Te-132	3.0457E+00	1.0032E-08	4.5769E+16	1.1269E+11
I-131	5.7989E+01	4.6775E-07	2.1503E+18	2.1456E+12
I-132	3.0256E+01	2.9312E-09	1.3373E+16	1.1195E+12
I-133	7.9378E+01	7.0072E-08	3.1728E+17	2.9370E+12
I-134	2.5017E+01	9.3777E-10	4.2145E+15	9.2562E+11
I-135	5.1607E+01	1.4695E-08	6.5552E+16	1.9095E+12
Xe-133	4.0660E+06	2.1722E-02	9.8357E+22	1.5044E+17
Xe-135	3.7776E+05	1.4792E-04	6.5987E+20	1.3977E+16
Cs-134	7.1698E+00	5.5416E-06	2.4904E+19	2.6528E+11
Cs-136	2.1323E+00	2.9093E-08	1.2883E+17	7.8894E+10
Cs-137	5.7702E+00	6.6338E-05	2.9160E+20	2.1350E+11
Ba-139	3.5074E-01	2.1443E-11	9.2899E+13	1.2977E+10
Ba-140	1.6253E+00	2.2201E-08	9.5496E+16	6.0135E+10
La-140	1.0317E-01	1.8561E-10	7.9842E+14	3.8173E+09
La-141	7.9529E-03	1.4063E-12	6.0062E+12	2.9426E+08
La-142	3.5752E-03	2.4975E-13	1.0592E+12	1.3228E+08
Ce-141	3.8658E-02	1.3567E-09	5.7946E+15	1.4303E+09
Ce-143	3.4142E-02	5.1412E-11	2.1651E+14	1.2632E+09
Ce-144	3.1104E-02	9.7521E-09	4.0784E+16	1.1509E+09
Pr-143	1.4683E-02	2.1805E-10	9.1826E+14	5.4327E+08
Nd-147	6.0036E-03	7.4212E-11	3.0402E+14	2.2213E+08
Np-239	4.1745E-01	1.7994E-09	4.5340E+15	1.5445E+10
Pu-238	1.2563E-04	7.3382E-09	1.8568E+16	4.6482E+06
Pu-239	1.1009E-05	1.7711E-07	4.4627E+17	4.0732E+05
Pu-240	2.0609E-05	9.0443E-08	2.2694E+17	7.6253E+05
Pu-241	4.4419E-03	4.3120E-08	1.0775E+17	1.6435E+08
Am-241	2.9787E-06	8.6788E-10	2.1687E+15	1.1021E+05
Cm-242	7.5478E-04	2.2773E-10	5.6671E+14	2.7927E+07
Cm-244	4.9920E-05	6.1704E-10	1.5229E+15	1.8471E+06

Environment Transport Group Inventory:

Time (h) = 96.0000	Total Release	Release Rate/s	
Noble gases (atoms)	9.5381E+23	2.7599E+18	
Elemental I (atoms)	9.9534E+16	2.8800E+11	
Organic I (atoms)	1.1549E+18	3.3418E+12	
Aerosols (kg)	7.3662E-05	2.1314E-10	
Dose Effective (Ci) I-131 (Thyroid)			7.2901E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			8.5018E+01
Total I (Ci)			2.4425E+02

RB to Environment Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5428E+23
Elemental I (atoms)	2.5552E+18	9.9775E+16
Organic I (atoms)	3.7507E+19	1.1607E+18
Aerosols (kg)	1.6198E-03	7.3664E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.8623E+16
Elemental I (atoms)	0.0000E+00	7.2808E+13
Organic I (atoms)	0.0000E+00	2.3617E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9392E+17
Elemental I (atoms)	2.3299E+10	7.2058E+08
Organic I (atoms)	2.4060E+11	7.4413E+09
Aerosols (kg)	1.8133E-11	5.6080E-13

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.9015E+17	0.0000E+00
Elemental I (atoms)	7.1296E+13	0.0000E+00
Organic I (atoms)	2.3206E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-60	3.4292E-15	3.0337E-21	3.0448E+04	2.3283E+04
Kr-85	1.0808E-04	2.7547E-10	1.9516E+15	2.4384E+12
Kr-85m	6.3147E-10	7.6732E-20	5.4364E+05	4.7691E+12
Sr-89	4.6042E-12	1.5848E-19	1.0724E+06	3.2879E+07
Sr-90	6.3937E-13	4.6872E-18	3.1363E+07	4.3362E+06
Y-91	7.3241E-14	2.9865E-21	1.9764E+04	4.4286E+05
Zr-95	7.2167E-14	3.3593E-21	2.1295E+04	5.0975E+05
Nb-95	7.5324E-14	1.9263E-21	1.2211E+04	5.1195E+05
Ru-103	7.7991E-13	2.4165E-20	1.4129E+05	5.6525E+06
Ru-106	3.6132E-13	1.0800E-19	6.1358E+05	2.4674E+06
Te-127m	1.6189E-13	1.7163E-20	8.1382E+04	1.1045E+06
Te-129m	4.9743E-13	1.6512E-20	7.7084E+04	3.6347E+06
Te-132	6.1863E-12	2.0377E-20	9.2965E+04	9.3700E+07
I-131	1.8020E-08	1.4535E-16	6.6818E+08	4.6579E+12
I-133	2.1577E-09	1.9047E-18	8.6244E+06	9.2751E+12
Xe-133	6.8649E-03	3.6675E-11	1.6606E+14	2.2054E+14
Xe-135	3.6967E-06	1.4476E-15	6.4574E+09	3.0480E+13
Cs-134	1.0799E-11	8.3468E-18	3.7511E+07	1.2474E+12
Cs-136	2.6242E-12	3.5805E-20	1.5855E+05	3.7198E+11
Cs-137	8.7201E-12	1.0025E-16	4.4068E+08	1.0039E+12
Ba-140	6.0383E-12	8.2480E-20	3.5479E+05	5.0280E+07
La-140	5.3087E-12	9.5509E-21	4.1084E+04	3.8424E+06
Ce-141	1.6313E-13	5.7252E-21	2.4452E+04	1.1974E+06
Ce-144	1.4086E-13	4.4165E-20	1.8470E+05	9.6395E+05
Pu-238	5.7449E-16	3.3557E-20	8.4910E+04	3.8937E+03
Pu-239	5.0666E-17	8.1513E-19	2.0539E+06	3.4123E+02
Pu-240	9.4204E-17	4.1342E-19	1.0374E+06	6.3874E+02
Pu-241	2.0294E-14	1.9700E-19	4.9227E+05	1.3767E+05
Am-241	1.3953E-17	4.0655E-21	1.0159E+04	9.2338E+01

CR Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.1177E+15	0.0000E+00	
Elemental I (atoms)	1.9633E+07	0.0000E+00	
Organic I (atoms)	6.5589E+08	0.0000E+00	
Aerosols (kg)	1.1558E-16	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		6.4262E-18
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.5024E-18
Total I (Ci)			2.0187E-08

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.8623E+16
Elemental I (atoms)	0.0000E+00	7.2808E+13
Organic I (atoms)	0.0000E+00	2.3617E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9392E+17
Elemental I (atoms)	2.3299E+10	7.2058E+08
Organic I (atoms)	2.4060E+11	7.4413E+09
Aerosols (kg)	1.8133E-11	5.6080E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	2.9015E+17	0.0000E+00
Elemental I (atoms)	7.1296E+13	0.0000E+00
Organic I (atoms)	2.3206E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

EAB Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2608E+00	9.1252E-01	1.2888E+00
Accumulated dose (rem)	4.9325E+00	2.3844E+00	5.0232E+00

LPZ Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.1596E+00	2.9296E+00	6.2496E+00
Accumulated dose (rem)	1.3917E+02	7.0369E+01	1.4251E+02

CR Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.1545E-05	2.9145E-04	6.0507E-05
Accumulated dose (rem)	5.7825E-03	2.3831E+01	1.0584E+00

DW Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.8796E-03	5.9110E-11	6.1374E+14	4.6129E+15
Co-60	2.9852E-03	2.6408E-09	2.6506E+16	5.5658E+15
Kr-85	9.3148E+05	2.3742E+00	1.6821E+25	1.0777E+23
Rb-86	2.8567E-02	3.5109E-10	2.4585E+15	3.2100E+17
Sr-89	2.8315E+00	9.7461E-08	6.5947E+17	7.7965E+18
Sr-90	5.6086E-01	4.1117E-06	2.7512E+19	1.0368E+18
Y-90	5.6381E-01	1.0363E-09	6.9342E+15	6.5478E+16
Y-91	4.7306E-02	1.9290E-09	1.2765E+16	1.0036E+17
Zr-95	4.7846E-02	2.2272E-09	1.4118E+16	1.2106E+17
Nb-95	6.1331E-02	1.5684E-09	9.9425E+15	1.2222E+17
Mo-99	4.4076E-04	9.1899E-13	5.5902E+12	1.4611E+18
Tc-99m	4.5189E-04	8.5939E-14	5.2277E+11	1.3022E+18
Ru-103	4.3314E-01	1.3421E-08	7.8468E+16	1.3378E+18
Ru-106	3.0233E-01	9.0367E-08	5.1340E+17	5.8921E+17
Rh-105	4.2064E-07	4.9836E-16	2.8583E+09	8.5376E+17
Sb-127	3.8088E-03	1.4262E-11	6.7630E+13	1.4663E+18
Te-127	1.2895E-01	4.8863E-11	2.3170E+14	1.4721E+18
Te-127m	1.2284E-01	1.3023E-08	6.1754E+16	2.6314E+17
Te-129	2.2106E-01	1.0555E-11	4.9276E+13	3.8863E+18
Te-129m	2.5564E-01	8.4860E-09	3.9615E+16	8.5735E+17
Te-131m	1.0575E-07	1.3262E-16	6.0968E+08	2.9939E+18
Te-132	2.1537E-02	7.0942E-11	3.2365E+14	2.2028E+19
I-131	1.6831E+03	1.3576E-05	6.2410E+19	1.1299E+21
I-132	2.5707E-02	2.4905E-12	1.1362E+13	2.3133E+20
I-133	1.7657E-06	1.5587E-15	7.0578E+09	5.4745E+20
Xe-133	1.9136E+06	1.0223E-02	4.6289E+22	3.1487E+24
Cs-134	9.2649E+00	7.1609E-06	3.2182E+19	3.5555E+19
Cs-136	5.8260E-01	7.9491E-09	3.5199E+16	1.0468E+19
Cs-137	7.6498E+00	8.7947E-05	3.8659E+20	2.8622E+19
Ba-140	1.2894E+00	1.7613E-08	7.5764E+16	1.1768E+19
La-140	1.4978E+00	2.6948E-09	1.1592E+16	4.9219E+17
Ce-141	8.2330E-02	2.8894E-09	1.2341E+16	2.8275E+17
Ce-143	4.0670E-08	6.1242E-17	2.5791E+08	2.5455E+17
Ce-144	1.1617E-01	3.6424E-08	1.5233E+17	2.3010E+17
Pr-143	1.6197E-02	2.4053E-10	1.0130E+15	1.0555E+17

Nd-147	3.6727E-03	4.5398E-11	1.8598E+14	4.3400E+16
Np-239	2.5908E-04	1.1168E-12	2.8139E+12	3.0419E+18
Pu-238	5.0611E-04	2.9563E-08	7.4803E+16	9.3108E+14
Pu-239	4.4666E-05	7.1861E-07	1.8107E+18	8.1597E+13
Pu-240	8.2778E-05	3.6327E-07	9.1154E+17	1.5273E+14
Pu-241	1.7771E-02	1.7251E-07	4.3108E+17	3.2915E+16
Am-241	1.4292E-05	4.1640E-09	1.0405E+16	2.2181E+13
Cm-242	2.6702E-03	8.0568E-10	2.0049E+15	5.5766E+15
Cm-244	1.9988E-04	2.4707E-09	6.0978E+15	3.6992E+14

DW Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.6867E+25	0.0000E+00	
Elemental I (atoms)	1.8104E+18	4.8566E+22	
Organic I (atoms)	6.0481E+19	0.0000E+00	
Aerosols (kg)	1.0084E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9625E-07
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9625E-07
Total I (Ci)			1.6831E+03

DW to RB Transport Group Inventory:

Time (h) = 720.0000 Leakage Transport	
Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	4.4088E+18
Organic I (atoms)	9.5235E+19
Aerosols (kg)	1.7096E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 720.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	1.6988E+18
Organic I (atoms)	0.0000E+00	2.9326E+19
Aerosols (kg)	0.0000E+00	8.9210E-04

DW to MSL "A" Volume 3 Transport Group Inventory:

Time (h) = 720.0000	Pipe Walls	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	1.6988E+18
Organic I (atoms)	0.0000E+00	2.9326E+19
Aerosols (kg)	0.0000E+00	8.9210E-04

RB Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.7603E-06	5.5359E-14	5.7479E+11	8.4585E+12
Co-60	2.7957E-06	2.4733E-12	2.4824E+13	1.0179E+13
Kr-85	8.7237E+02	2.2235E-03	1.5753E+22	1.0418E+20
Rb-86	2.6755E-05	3.2881E-13	2.3025E+12	5.8972E+14
Sr-89	2.6518E-03	9.1277E-11	6.1762E+14	1.4309E+16
Sr-90	5.2527E-04	3.8508E-09	2.5767E+16	1.8961E+15
Y-90	5.2804E-04	9.7054E-13	6.4941E+12	1.2694E+14
Y-91	4.4304E-05	1.8066E-12	1.1955E+13	1.9091E+14
Zr-95	4.4810E-05	2.0859E-12	1.3222E+13	2.2204E+14
Nb-95	5.7439E-05	1.4689E-12	9.3116E+12	2.2368E+14
Mo-99	4.1279E-07	8.6068E-16	5.2355E+09	2.6628E+15
Tc-99m	4.2321E-07	8.0486E-17	4.8959E+08	2.4157E+15
Ru-103	4.0566E-04	1.2569E-11	7.3489E+13	2.4572E+15
Ru-106	2.8315E-04	8.4633E-11	4.8082E+14	1.0781E+15
Rh-105	3.9395E-10	4.6673E-19	2.6769E+06	1.5721E+15
Sb-127	3.5671E-06	1.3357E-14	6.3338E+10	2.6906E+15
Te-127	1.2077E-04	4.5762E-14	2.1700E+11	2.7325E+15
Te-127m	1.1505E-04	1.2197E-11	5.7836E+13	4.8207E+14
Te-129	2.0703E-04	9.8857E-15	4.6150E+10	5.6150E+15
Te-129m	2.3942E-04	7.9475E-12	3.7101E+13	1.5780E+15
Te-131m	9.9044E-11	1.2421E-19	5.7099E+05	5.2803E+15
Te-132	2.0171E-05	6.6440E-14	3.0311E+11	4.0301E+16
I-131	1.5763E+00	1.2715E-08	5.8450E+16	1.2628E+18
I-132	2.4076E-05	2.3324E-15	1.0641E+10	2.4703E+17
I-133	1.6537E-09	1.4598E-18	6.6100E+06	8.2965E+17

Xe-133	1.7922E+03	9.5744E-06	4.3352E+19	3.2679E+21
Cs-134	8.6770E-03	6.7065E-09	3.0140E+16	6.5245E+16
Cs-136	5.4563E-04	7.4447E-12	3.2965E+13	1.9223E+16
Cs-137	7.1643E-03	8.2366E-08	3.6206E+17	5.2520E+16
Ba-140	1.2076E-03	1.6496E-11	7.0956E+13	2.1705E+16
La-140	1.4028E-03	2.5238E-12	1.0856E+13	1.5916E+15
Ce-141	7.7106E-05	2.7061E-12	1.1558E+13	5.1996E+14
Ce-143	3.8089E-11	5.7356E-20	2.4154E+05	4.5147E+14
Ce-144	1.0880E-04	3.4113E-11	1.4266E+14	4.2110E+14
Pr-143	1.5169E-05	2.2527E-13	9.4868E+11	1.9666E+14
Nd-147	3.4396E-06	4.2518E-14	1.7418E+11	8.0072E+13
Np-239	2.4264E-07	1.0459E-15	2.6354E+09	5.5197E+15
Pu-238	4.7399E-07	2.7687E-11	7.0056E+13	1.7026E+12
Pu-239	4.1832E-08	6.7301E-10	1.6958E+15	1.4923E+11
Pu-240	7.7525E-08	3.4022E-10	8.5369E+14	2.7930E+11
Pu-241	1.6643E-05	1.6157E-10	4.0373E+14	6.0195E+13
Am-241	1.3385E-08	3.8998E-12	9.7449E+12	4.0482E+10
Cm-242	2.5008E-06	7.5455E-13	1.8777E+12	1.0211E+13
Cm-244	1.8720E-07	2.3139E-12	5.7109E+12	6.7651E+11

RB Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.5797E+22	0.0000E+00	
Elemental I (atoms)	1.6955E+15	0.0000E+00	
Organic I (atoms)	5.6643E+16	0.0000E+00	
Aerosols (kg)	9.4438E-08	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.6976E-11
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6976E-11
Total I (Ci)			1.5763E+00

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport
Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	4.4088E+18
Organic I (atoms)	9.5235E+19
Aerosols (kg)	1.7096E-03

RB to Environment Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.9239E+24
Elemental I (atoms)	4.1552E+18	1.4926E+17
Organic I (atoms)	9.0959E+19	2.8138E+18
Aerosols (kg)	1.6423E-03	7.4361E-05

Environment Integral Nuclide Release:

Time (h) = 720.0000	Ci	kg	Atoms	Bq
Co-58	6.4137E-04	2.0170E-11	2.0943E+14	2.3731E+07
Co-60	7.7188E-04	6.8285E-10	6.8537E+15	2.8560E+07
Kr-85	2.6160E+05	6.6677E-01	4.7239E+24	9.6790E+15
Kr-85m	4.9337E+04	5.9951E-06	4.2475E+19	1.8255E+15
Kr-87	1.0243E+04	3.6161E-07	2.5031E+18	3.7899E+14
Kr-88	6.5953E+04	5.2597E-06	3.5994E+19	2.4402E+15
Rb-86	6.5609E-02	8.0633E-10	5.6463E+15	2.4275E+09
Sr-89	1.0850E+00	3.7345E-08	2.5270E+17	4.0144E+10
Sr-90	1.4377E-01	1.0540E-06	7.0526E+18	5.3196E+09
Sr-91	9.8051E-01	2.7049E-10	1.7900E+15	3.6279E+10
Sr-92	5.5475E-01	4.4135E-11	2.8890E+14	2.0526E+10
Y-90	9.8946E-03	1.8186E-11	1.2169E+14	3.6610E+08
Y-91	1.4509E-02	5.9162E-10	3.9152E+15	5.3682E+08
Y-92	2.2931E-01	2.3831E-11	1.5599E+14	8.4844E+09
Y-93	1.1477E-02	3.4402E-12	2.2276E+13	4.2467E+08
Zr-95	1.6836E-02	7.8371E-10	4.9680E+15	6.2294E+08
Zr-97	1.3400E-02	7.0095E-12	4.3518E+13	4.9580E+08
Nb-95	1.6962E-02	4.3378E-10	2.7497E+15	6.2759E+08
Mo-99	2.0169E-01	4.2052E-10	2.5580E+15	7.4624E+09
Tc-99m	1.8431E-01	3.5051E-11	2.1322E+14	6.8194E+09
Ru-103	1.8631E-01	5.7729E-09	3.3752E+16	6.8936E+09
Ru-105	7.1925E-02	1.0700E-11	6.1368E+13	2.6612E+09

Ru-106	8.1751E-02	2.4436E-08	1.3883E+17	3.0248E+09
Rh-105	1.1915E-01	1.4117E-10	8.0965E+14	4.4087E+09
Sb-127	2.0387E-01	7.6339E-10	3.6199E+15	7.5430E+09
Sb-129	3.5267E-01	6.2714E-11	2.9277E+14	1.3049E+10
Te-127	2.0810E-01	7.8852E-11	3.7390E+14	7.6997E+09
Te-127m	3.6555E-02	3.8754E-09	1.8377E+16	1.3525E+09
Te-129	4.3292E-01	2.0672E-11	9.6504E+13	1.6018E+10
Te-129m	1.1966E-01	3.9722E-09	1.8543E+16	4.4275E+09
Te-131m	3.9935E-01	5.0082E-10	2.3023E+15	1.4776E+10
Te-132	3.0531E+00	1.0056E-08	4.5880E+16	1.1296E+11
I-131	1.0375E+02	8.3686E-07	3.8471E+18	3.8388E+12
I-132	3.0265E+01	2.9320E-09	1.3377E+16	1.1198E+12
I-133	8.0087E+01	7.0698E-08	3.2011E+17	2.9632E+12
I-134	2.5017E+01	9.3777E-10	4.2145E+15	9.2562E+11
I-135	5.1607E+01	1.4695E-08	6.5552E+16	1.9095E+12
Xe-133	8.1934E+06	4.3773E-02	1.9820E+23	3.0316E+17
Xe-135	3.7793E+05	1.4799E-04	6.6017E+20	1.3983E+16
Cs-134	7.2344E+00	5.5915E-06	2.5129E+19	2.6767E+11
Cs-136	2.1412E+00	2.9215E-08	1.2936E+17	7.9224E+10
Cs-137	5.8229E+00	6.6944E-05	2.9427E+20	2.1545E+11
Ba-139	3.5074E-01	2.1443E-11	9.2899E+13	1.2977E+10
Ba-140	1.6455E+00	2.2477E-08	9.6685E+16	6.0884E+10
La-140	1.2559E-01	2.2595E-10	9.7192E+14	4.6468E+09
La-141	7.9529E-03	1.4063E-12	6.0062E+12	2.9426E+08
La-142	3.5752E-03	2.4975E-13	1.0592E+12	1.3228E+08
Ce-141	3.9426E-02	1.3837E-09	5.9097E+15	1.4587E+09
Ce-143	3.4154E-02	5.1430E-11	2.1658E+14	1.2637E+09
Ce-144	3.1931E-02	1.0011E-08	4.1868E+16	1.1815E+09
Pr-143	1.4922E-02	2.2160E-10	9.3323E+14	5.5213E+08
Nd-147	6.0703E-03	7.5036E-11	3.0740E+14	2.2460E+08
Np-239	4.1799E-01	1.8018E-09	4.5399E+15	1.5466E+10
Pu-238	1.2911E-04	7.5415E-09	1.9082E+16	4.7770E+06
Pu-239	1.1316E-05	1.8206E-07	4.5873E+17	4.1869E+05
Pu-240	2.1179E-05	9.2944E-08	2.3322E+17	7.8362E+05
Pu-241	4.5645E-03	4.4310E-08	1.1072E+17	1.6889E+08
Am-241	3.0697E-06	8.9440E-10	2.2349E+15	1.1358E+05
Cm-242	7.7427E-04	2.3362E-10	5.8135E+14	2.8648E+07
Cm-244	5.1298E-05	6.3408E-10	1.5650E+15	1.8980E+06

Environment Transport Group Inventory:

Time (h) = 720.0000	Total Release	Release Rate/s	
Noble gases (atoms)	4.9229E+24	1.8993E+18	
Elemental I (atoms)	1.4884E+17	5.7422E+10	
Organic I (atoms)	2.8021E+18	1.0810E+12	
Aerosols (kg)	7.4358E-05	2.8688E-11	
Dose Effective (Ci) I-131 (Thyroid)			1.1878E+02
Dose Effective (Ci) I-131 (ICRP2 Thyroid)			1.3097E+02
Total I (Ci)			2.9073E+02

RB to Environment Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.9239E+24
Elemental I (atoms)	4.1552E+18	1.4926E+17
Organic I (atoms)	9.0959E+19	2.8138E+18
Aerosols (kg)	1.6423E-03	7.4361E-05

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9305E+17
Elemental I (atoms)	0.0000E+00	7.2809E+13
Organic I (atoms)	0.0000E+00	2.4010E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

Pathway

Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.0637E+17
Elemental I (atoms)	2.5868E+10	8.0003E+08
Organic I (atoms)	3.2642E+11	1.0096E+10
Aerosols (kg)	1.8169E-11	5.6192E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	5.9855E+17	0.0000E+00
Elemental I (atoms)	7.1297E+13	0.0000E+00
Organic I (atoms)	2.3630E+12	0.0000E+00
Aerosols (kg)	8.2694E-08	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Kr-85	2.9201E-05	7.4428E-11	5.2732E+14	5.3042E+12
Sr-89	8.7466E-13	3.0107E-20	2.0371E+05	3.2983E+07
Sr-90	1.7325E-13	1.2701E-18	8.4988E+06	4.3532E+06
Ru-103	1.3380E-13	4.1458E-21	2.4239E+04	5.6693E+06
Ru-106	9.3392E-14	2.7915E-20	1.5859E+05	2.4768E+06
Te-127m	3.7947E-14	4.0230E-21	1.9076E+04	1.1085E+06
Te-129m	7.8970E-14	2.6214E-21	1.2237E+04	3.6451E+06
I-131	5.1992E-10	4.1938E-18	1.9279E+07	4.6581E+12
Xe-133	5.9989E-05	3.2048E-13	1.4511E+12	2.7623E+14
Cs-134	2.8620E-12	2.2120E-18	9.9412E+06	1.2474E+12
Cs-136	1.7997E-13	2.4555E-21	1.0873E+04	3.7198E+11
Cs-137	2.3631E-12	2.7167E-17	1.1942E+08	1.0039E+12
Ba-140	3.9832E-13	5.4409E-21	2.3404E+04	5.0369E+07
Ce-144	3.5887E-14	1.1252E-20	4.7055E+04	9.6758E+05
Pu-238	1.5634E-16	9.1322E-21	2.3107E+04	3.9089E+03
Pu-239	1.3798E-17	2.2198E-19	5.5934E+05	3.4258E+02
Pu-240	2.5571E-17	1.1222E-19	2.8158E+05	6.4124E+02
Pu-241	5.4897E-15	5.3291E-20	1.3316E+05	1.3821E+05

CR Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	5.2877E+14	0.0000E+00	
Elemental I (atoms)	5.5924E+05	0.0000E+00	
Organic I (atoms)	1.8683E+07	0.0000E+00	
Aerosols (kg)	3.1149E-17	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.8179E-19
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.8179E-19
Total I (Ci)			5.1993E-10

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9305E+17
Elemental I (atoms)	0.0000E+00	7.2809E+13
Organic I (atoms)	0.0000E+00	2.4010E+12
Aerosols (kg)	0.0000E+00	8.2701E-08

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.0637E+17
Elemental I (atoms)	2.5868E+10	8.0003E+08
Organic I (atoms)	3.2642E+11	1.0096E+10
Aerosols (kg)	1.8169E-11	5.6192E-13

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	5.9855E+17	0.0000E+00
Elemental I (atoms)	7.1297E+13	0.0000E+00
Organic I (atoms)	2.3630E+12	0.0000E+00

Aerosols (kg) 8.2694E-08 0.0000E+00

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##
I-131 Summary
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Time (hr)	DW I-131 (Curies)	RB I-131 (Curies)	Environment I-131 (Curies)
0.000	3.8944E+03	6.7607E-04	4.1839E-08
0.260	1.8207E+06	1.4374E+02	4.1941E+00
0.333	2.3333E+06	2.3426E+02	8.7803E+00
0.500	2.5229E+05	2.8694E+02	9.2384E+00
0.750	3.9747E+05	3.2024E+02	9.9970E+00
1.000	4.0160E+05	3.5419E+02	1.0843E+01
1.400	4.0806E+05	4.0412E+02	1.2365E+01
1.700	4.1288E+05	4.3838E+02	1.3632E+01
1.880	4.1577E+05	4.5775E+02	1.4440E+01
2.000	4.1769E+05	4.7020E+02	1.4999E+01
2.100	5.0440E+04	4.6397E+02	1.5468E+01
2.200	4.5677E+04	4.5151E+02	1.5927E+01
2.300	4.2146E+04	4.3921E+02	1.6374E+01
2.400	3.9527E+04	4.2713E+02	1.6808E+01
2.700	3.5070E+04	3.9256E+02	1.8040E+01
3.000	3.3234E+04	3.6080E+02	1.9172E+01
3.300	3.2463E+04	3.3189E+02	2.0212E+01
3.600	3.2123E+04	3.0566E+02	2.1170E+01
3.900	3.1960E+04	2.8193E+02	2.2053E+01
4.000	3.1924E+04	2.7453E+02	2.2332E+01
4.300	3.1880E+04	2.5376E+02	2.3126E+01
4.600	3.1836E+04	2.3499E+02	2.3860E+01
4.900	3.1792E+04	2.1802E+02	2.4541E+01
5.200	3.1748E+04	2.0268E+02	2.5173E+01
5.500	3.1704E+04	1.8881E+02	2.5761E+01
5.800	3.1660E+04	1.7627E+02	2.6310E+01
6.100	3.1617E+04	1.6492E+02	2.6823E+01
6.400	3.1573E+04	1.5467E+02	2.7303E+01
6.700	3.1530E+04	1.4539E+02	2.7754E+01
7.000	3.1486E+04	1.3700E+02	2.8178E+01
7.300	3.1443E+04	1.2941E+02	2.8579E+01
7.600	3.1399E+04	1.2254E+02	2.8957E+01
7.900	3.1356E+04	1.1633E+02	2.9316E+01
8.000	3.1342E+04	1.1439E+02	2.9432E+01
8.300	3.1298E+04	1.0896E+02	2.9767E+01
8.600	3.1255E+04	1.0403E+02	3.0088E+01
8.900	3.1212E+04	9.9578E+01	3.0394E+01
9.200	3.1169E+04	9.5545E+01	3.0687E+01
9.500	3.1126E+04	9.1892E+01	3.0969E+01
9.800	3.1083E+04	8.8584E+01	3.1240E+01
10.100	3.1040E+04	8.5587E+01	3.1502E+01
10.400	3.0998E+04	8.2870E+01	3.1755E+01
24.000	2.9118E+04	5.4873E+01	4.0155E+01
96.000	2.1682E+04	2.0306E+01	5.7989E+01
720.000	1.6831E+03	1.5763E+00	1.0375E+02

Time (hr)	CR I-131 (Curies)	MSL "B" Volume 1 I-131 (Curies)	MSL "C" Volume 3 I-131 (Curies)
0.000	1.4677E-10	3.5699E-04	3.5699E-04
0.260	1.3582E-02	7.8111E+01	7.8111E+01
0.333	2.7814E-02	1.2833E+02	1.2833E+02
0.500	2.2552E-02	1.6420E+02	1.6420E+02
0.750	1.8576E-02	1.9512E+02	1.9512E+02
1.000	1.5301E-02	2.2789E+02	2.2789E+02
1.400	1.1218E-02	2.8097E+02	2.8097E+02
1.700	8.8891E-03	3.2128E+02	3.2128E+02
1.880	7.7306E-03	3.4568E+02	3.4568E+02
2.000	7.0434E-03	3.6204E+02	3.6204E+02
2.100	6.5177E-03	3.6484E+02	3.6484E+02
2.200	6.0312E-03	3.6563E+02	3.6563E+02
2.300	5.5810E-03	3.6634E+02	3.6634E+02
2.400	5.1645E-03	3.6699E+02	3.6699E+02

2.700	4.0922E-03	3.6872E+02	3.6872E+02
3.000	3.2426E-03	3.7028E+02	3.7028E+02
3.300	2.5695E-03	3.7177E+02	3.7177E+02
3.600	2.0361E-03	3.7322E+02	3.7322E+02
3.900	1.6134E-03	3.7466E+02	3.7466E+02
4.000	1.4930E-03	3.7514E+02	3.7514E+02
4.300	1.1831E-03	3.7657E+02	3.7657E+02
4.600	9.3755E-04	3.7800E+02	3.7800E+02
4.900	7.4297E-04	3.7942E+02	3.7942E+02
5.200	5.8879E-04	3.8084E+02	3.8084E+02
5.500	4.6662E-04	3.8225E+02	3.8225E+02
5.800	3.6982E-04	3.8366E+02	3.8366E+02
6.100	2.9311E-04	3.8507E+02	3.8507E+02
6.400	2.3232E-04	3.8647E+02	3.8647E+02
6.700	1.8415E-04	3.8787E+02	3.8787E+02
7.000	1.4598E-04	3.8926E+02	3.8926E+02
7.300	1.1574E-04	3.9065E+02	3.9065E+02
7.600	9.1765E-05	3.9204E+02	3.9204E+02
7.900	7.2769E-05	3.9342E+02	3.9342E+02
8.000	6.7358E-05	3.9388E+02	3.9388E+02
8.300	5.3411E-05	3.9526E+02	3.9526E+02
8.600	4.2359E-05	3.9663E+02	3.9663E+02
8.900	3.3600E-05	3.9800E+02	3.9800E+02
9.200	2.6658E-05	3.9936E+02	3.9936E+02
9.500	2.1156E-05	4.0072E+02	4.0072E+02
9.800	1.6796E-05	4.0208E+02	4.0208E+02
10.100	1.3340E-05	4.0343E+02	4.0343E+02
10.400	1.0601E-05	4.0478E+02	4.0478E+02
24.000	9.7633E-08	4.6191E+02	4.6191E+02
96.000	1.8020E-08	5.0899E+02	5.0899E+02
720.000	5.1992E-10	1.7209E+02	1.7209E+02

##
Cumulative Dose Summary
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	EAB		LPZ		CR	
Time (hr)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.260	1.1861E-01	5.8945E-03	1.0231E+01	5.0846E-01	6.1281E-01	2.7148E-02
0.333	2.4812E-01	1.2306E-02	2.1403E+01	1.0615E+00	1.6156E+00	7.1568E-02
0.500	2.6104E-01	1.3397E-02	2.2517E+01	1.1556E+00	4.4485E+00	1.9705E-01
0.750	2.8244E-01	1.6330E-02	2.4363E+01	1.4086E+00	7.9099E+00	3.5035E-01
1.000	3.0639E-01	2.2887E-02	2.6429E+01	1.9742E+00	1.0752E+01	4.7621E-01
1.400	3.4963E-01	4.5720E-02	3.0159E+01	3.9438E+00	1.4284E+01	6.3268E-01
1.700	3.8567E-01	7.5282E-02	3.3268E+01	6.4938E+00	1.6291E+01	7.2161E-01
1.880	4.0866E-01	9.8709E-02	3.5251E+01	8.5146E+00	1.7286E+01	7.6573E-01
2.000	4.2452E-01	1.1680E-01	3.6619E+01	1.0075E+01	1.7875E+01	7.9185E-01
2.100	4.3787E-01	1.3340E-01	3.7467E+01	1.1130E+01	1.8325E+01	8.1182E-01
2.200	4.5088E-01	1.5122E-01	3.8294E+01	1.2263E+01	1.8741E+01	8.3029E-01
2.300	4.6353E-01	1.7016E-01	3.9098E+01	1.3466E+01	1.9126E+01	8.4735E-01
2.400	4.7582E-01	1.9010E-01	3.9879E+01	1.4733E+01	1.9481E+01	8.6314E-01
2.700	5.1059E-01	2.5492E-01	4.2089E+01	1.8853E+01	2.0395E+01	9.0369E-01
3.000	5.4242E-01	3.2549E-01	4.4112E+01	2.3337E+01	2.1116E+01	9.3575E-01
3.300	5.7158E-01	3.9991E-01	4.5964E+01	2.8066E+01	2.1685E+01	9.6109E-01
3.600	5.9831E-01	4.7669E-01	4.7663E+01	3.2946E+01	2.2135E+01	9.8114E-01
3.900	6.2286E-01	5.5465E-01	4.9223E+01	3.7900E+01	2.2491E+01	9.9699E-01
4.000	6.3059E-01	5.8073E-01	4.9714E+01	3.9558E+01	2.2592E+01	1.0015E+00
4.300	6.5254E-01	6.5887E-01	5.1110E+01	4.4523E+01	2.2851E+01	1.0131E+00
4.600	6.7278E-01	7.3635E-01	5.2396E+01	4.9447E+01	2.3057E+01	1.0223E+00
4.900	6.9147E-01	8.1267E-01	5.3583E+01	5.4297E+01	2.3219E+01	1.0296E+00
5.200	7.0875E-01	8.8745E-01	5.4682E+01	5.9050E+01	2.3347E+01	1.0353E+00
5.500	7.2478E-01	9.6042E-01	5.5700E+01	6.3687E+01	2.3448E+01	1.0399E+00
5.800	7.3967E-01	1.0314E+00	5.6647E+01	6.8197E+01	2.3528E+01	1.0435E+00
6.100	7.5353E-01	1.1002E+00	5.7528E+01	7.2570E+01	2.3591E+01	1.0464E+00
6.400	7.6647E-01	1.1668E+00	5.8350E+01	7.6803E+01	2.3641E+01	1.0487E+00
6.700	7.7857E-01	1.2311E+00	5.9119E+01	8.0891E+01	2.3680E+01	1.0505E+00
7.000	7.8992E-01	1.2932E+00	5.9840E+01	8.4835E+01	2.3712E+01	1.0519E+00
7.300	8.0058E-01	1.3530E+00	6.0517E+01	8.8635E+01	2.3736E+01	1.0531E+00
7.600	8.1063E-01	1.4106E+00	6.1156E+01	9.2294E+01	2.3756E+01	1.0540E+00
7.900	8.2012E-01	1.4660E+00	6.1759E+01	9.5815E+01	2.3771E+01	1.0547E+00

```
   8.000 8.2317E-01 1.4840E+00 6.1953E+01 9.6959E+01 2.3776E+01 1.0549E+00
   8.300 8.3200E-01 1.5366E+00 6.2056E+01 9.8149E+01 2.3787E+01 1.0555E+00
   8.600 8.4039E-01 1.5871E+00 6.2154E+01 9.9293E+01 2.3796E+01 1.0559E+00
   8.900 8.4839E-01 1.6358E+00 6.2247E+01 1.0039E+02 2.3803E+01 1.0563E+00
   9.200 8.5602E-01 1.6825E+00 6.2337E+01 1.0145E+02 2.3809E+01 1.0565E+00
   9.500 8.6333E-01 1.7275E+00 6.2422E+01 1.0247E+02 2.3813E+01 1.0568E+00
   9.800 8.7034E-01 1.7707E+00 6.2504E+01 1.0345E+02 2.3817E+01 1.0569E+00
  10.100 8.7708E-01 1.8123E+00 6.2583E+01 1.0439E+02 2.3819E+01 1.0571E+00
  10.400 8.8359E-01 1.8523E+00 6.2659E+01 1.0530E+02 2.3822E+01 1.0572E+00
  24.000 1.0891E+00 2.8542E+00 6.5059E+01 1.2797E+02 2.3831E+01 1.0582E+00
  96.000 1.4719E+00 3.7343E+00 6.7440E+01 1.3626E+02 2.3831E+01 1.0583E+00
 720.000 2.3844E+00 5.0232E+00 7.0369E+01 1.4251E+02 2.3831E+01 1.0584E+00

########################################################################
                        Worst Two-Hour Doses
########################################################################

EAB
   Time    Whole Body     Thyroid         TEDE
   (hr)      (rem)         (rem)          (rem)
    3.2   5.0444E-01   1.4689E-01   5.1235E-01
```

12.10 RADTRAD Nuclide Inventory File "JAFLOCA.nif"

```
Nuclide Inventory Name: JAF NIF File - 43 GWD/MTU Burnup
 Normalized MACCS Sample 2,586.72 MWth BWR Core Inventory
 Power Level:
  0.1000E+01
 Nuclides:
  60
 Nuclide 001:
 Co-58
    7
  0.6117120000E+07
  0.5800E+02
  0.1529E+03
 none      0.0000E+00
 none      0.0000E+00
 none      0.0000E+00
 Nuclide 002:
 Co-60
    7
  0.1663401096E+09
  0.6000E+02
  0.1830E+03
 none      0.0000E+00
 none      0.0000E+00
 none      0.0000E+00
 Nuclide 003:
 Kr-85
    1
  0.3382974720E+09
  0.8500E+02
  5.26E+02
 none      0.0000E+00
 none      0.0000E+00
 none      0.0000E+00
 Nuclide 004:
 Kr-85m
    1
  0.1612800000E+05
  0.8500E+02
  8.67E+03
 Kr-85     0.2100E+00
 none      0.0000E+00
 none      0.0000E+00
 Nuclide 005:
 Kr-87
    1
  0.4578000000E+04
  0.8700E+02
  1.74E+04
 Rb-87     0.1000E+01
 none      0.0000E+00
 none      0.0000E+00
 Nuclide 006:
 Kr-88
    1
  0.1022400000E+05
  0.8800E+02
```

```
 2.360E+04
Rb-88     0.1000E+01
none      0.0000E+00
none      0.0000E+00
Nuclide 007:
Rb-86
   3
 0.1612224000E+07
 0.8600E+02
 6.60E+01
none      0.0000E+00
none      0.0000E+00
none      0.0000E+00
Nuclide 008:
Sr-89
   5
 0.4363200000E+07
 0.8900E+02
 3.240E+04
none      0.0000E+00
none      0.0000E+00
none      0.0000E+00
Nuclide 009:
Sr-90
   5
 0.9189573120E+09
 0.9000E+02
 4.260E+03
Y-90      0.1000E+01
none      0.0000E+00
none      0.0000E+00
Nuclide 010:
Sr-91
   5
 0.3420000000E+05
 0.9100E+02
 4.0300E+04
Y-91m     0.5800E+00
Y-91      0.4200E+00
none      0.0000E+00
Nuclide 011:
Sr-92
   5
 0.9756000000E+04
 0.9200E+02
 4.20E+04
Y-92      0.1000E+01
none      0.0000E+00
none      0.0000E+00
Nuclide 012:
Y-90
   9
 0.2304000000E+06
 0.9000E+02
 4.40E+03
none      0.0000E+00
none      0.0000E+00
none      0.0000E+00
```

```
Nuclide 013:
Y-91
  9
 0.5055264000E+07
 0.9100E+02
 4.11E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 014:
Y-92
  9
 0.1274400000E+05
 0.9200E+02
 4.25E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 015:
Y-93
  9
 0.3636000000E+05
 0.9300E+02
 4.64E+04
Zr-93    0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 016:
Zr-95
  9
 0.5527872000E+07
 0.9500E+02
 5.02E+04
Nb-95m   0.7000E-02
Nb-95    0.9900E+00
none     0.0000E+00
Nuclide 017:
Zr-97
  9
 0.6084000000E+05
 0.9700E+02
 4.86E+04
Nb-97m   0.9500E+00
Nb-97    0.5300E-01
none     0.0000E+00
Nuclide 018:
Nb-95
  9
 0.3036960000E+07
 0.9500E+02
 5.03E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 019:
Mo-99
  7
 0.2376000000E+06
```

```
 0.9900E+02
 5.14E+04
Tc-99m   0.8800E+00
Tc-99    0.1200E+00
none     0.0000E+00
Nuclide 020:
Tc-99m
  7
 0.2167200000E+05
 0.9900E+02
 4.54E+04
Tc-99    0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 021:
Ru-103
  7
 0.3393792000E+07
 0.1030E+03
 4.46E+04
Rh-103m  0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 022:
Ru-105
  7
 0.1598400000E+05
 0.1050E+03
 3.18E+04
Rh-105   0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 023:
Ru-106
  7
 0.3181248000E+08
 0.1060E+03
 1.94E+04
Rh-106   0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 024:
Rh-105
  7
 0.1272960000E+06
 0.1050E+03
 2.98E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 025:
Sb-127
  4
 0.3326400000E+06
 0.1270E+03
 2.56E+03
Te-127m  0.1800E+00
Te-127   0.8200E+00
```

```
none     0.0000E+00
Nuclide 026:
Sb-129
  4
 0.1555200000E+05
 0.1290E+03
 7.91E+03
Te-129m  0.2200E+00
Te-129   0.7700E+00
none     0.0000E+00
Nuclide 027:
Te-127
  4
 0.3366000000E+05
 0.1270E+03
 2.53E+03
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 028:
Te-127m
  4
 0.9417600000E+07
 0.1270E+03
 4.34E+02
Te-127   0.9800E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 029:
Te-129
  4
 0.4176000000E+04
 0.1290E+03
 7.42E+03
I-129    0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 030:
Te-129m
  4
 0.2903040000E+07
 0.1290E+03
 1.43E+03
Te-129   0.6500E+00
I-129    0.3500E+00
none     0.0000E+00
Nuclide 031:
Te-131m
  4
 0.1080000000E+06
 0.1310E+03
 5.38E+03
Te-131   0.2200E+00
I-131    0.7800E+00
none     0.0000E+00
Nuclide 032:
Te-132
  4
```

```
 0.2815200000E+06
 0.1320E+03
 3.86E+04
I-132    0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 033:
I-131
  2
 0.6946560000E+06
 0.1310E+03
 2.71E+04
Xe-131m  0.1100E-01
none     0.0000E+00
none     0.0000E+00
Nuclide 034:
I-132
  2
 0.8280000000E+04
 0.1320E+03
 3.96E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 035:
I-133
  2
 0.7488000000E+05
 0.1330E+03
 5.64E+04
Xe-133m  0.2900E-01
Xe-133   0.9700E+00
none     0.0000E+00
Nuclide 036:
I-134
  2
 0.3156000000E+04
 0.1340E+03
 6.43E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 037:
I-135
  2
 0.2379600000E+05
 0.1350E+03
 5.33E+04
Xe-135m  0.1500E+00
Xe-135   0.8500E+00
none     0.0000E+00
Nuclide 038:
Xe-133
  1
 0.4531680000E+06
 0.1330E+03
 5.63E+04
none     0.0000E+00
```

```
none     0.0000E+00
none     0.0000E+00
Nuclide 039:
Xe-135
  1
 0.3272400000E+05
 0.1350E+03
 2.31E+04
Cs-135   0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 040:
Cs-134
  3
 0.6507177120E+08
 0.1340E+03
 7.22E+03
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 041:
Cs-136
  3
 0.1131840000E+07
 0.1360E+03
 2.16E+03
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 042:
Cs-137
  3
 0.9467280000E+09
 0.1370E+03
 5.81E+03
Ba-137m  0.9500E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 043:
Ba-139
  6
 0.4962000000E+04
 0.1390E+03
 5.15E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 044:
Ba-140
  6
 0.1100736000E+07
 0.1400E+03
 5.00E+04
La-140   0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 045:
La-140
```

```
  9
 0.1449792000E+06
 0.1400E+03
 5.24E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 046:
La-141
  9
 0.1414800000E+05
 0.1410E+03
 4.70E+04
Ce-141   0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 047:
La-142
  9
 0.5550000000E+04
 0.1420E+03
 4.60E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 048:
Ce-141
  8
 0.2808086400E+07
 0.1410E+03
 4.72E+04
none     0.0000E+00
none     0.0000E+00
none     0.0000E+00
Nuclide 049:
Ce-143
  8
 0.1188000000E+06
 0.1430E+03
 4.56E+04
Pr-143   0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 050:
Ce-144
  8
 0.2456352000E+08
 0.1440E+03
 3.79E+04
Pr-144m  0.1800E-01
Pr-144   0.9800E+00
none     0.0000E+00
Nuclide 051:
Pr-143
  9
 0.1171584000E+07
 0.1430E+03
 4.43E+04
```

```
none      0.0000E+00
none      0.0000E+00
none      0.0000E+00
Nuclide 052:
Nd-147
   9
 0.9486720000E+06
 0.1470E+03
 1.85E+04
Pm-147    0.1000E+01
none      0.0000E+00
none      0.0000E+00
Nuclide 053:
Np-239
   8
 0.2034720000E+06
 0.2390E+03
 5.37E+05
Pu-239    0.1000E+01
none      0.0000E+00
none      0.0000E+00
Nuclide 054:
Pu-238
   8
 0.2768863824E+10
 0.2380E+03
 1.53E+02
U-234     0.1000E+01
none      0.0000E+00
none      0.0000E+00
Nuclide 055:
Pu-239
   8
 0.7594336440E+12
 0.2390E+03
 1.34E+01
U-235     0.1000E+01
none      0.0000E+00
none      0.0000E+00
Nuclide 056:
Pu-240
   8
 0.2062920312E+12
 0.2400E+03
 2.51E+01
U-236     0.1000E+01
none      0.0000E+00
none      0.0000E+00
Nuclide 057:
Pu-241
   8
 0.4544294400E+09
 0.2410E+03
 5.41E+03
U-237     0.2400E-04
Am-241    0.1000E+01
none      0.0000E+00
Nuclide 058:
```

```
Am-241
  9
 0.1363919472E+11
 0.2410E+03
 9.06E+00
Np-237   0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 059:
Cm-242
  9
 0.1406592000E+08
 0.2420E+03
 2.30E+03
Pu-238   0.1000E+01
none     0.0000E+00
none     0.0000E+00
Nuclide 060:
Cm-244
  9
 0.5715081360E+09
 0.2440E+03
 1.52E+02
Pu-240   0.1000E+01
none     0.0000E+00
none     0.0000E+00
End of Nuclear Inventory File
```

12.11 RADTRAD Release Fraction and Timing File "bwr_dba.rft"

```
Release Fraction and Timing Name:
 BWR, NUREG-1465, Tables 3.11 & 3.13, June 1992
 Duration (h):   Design Basis Accident
  0.5000E+00  0.1500E+01  0.0000E+00  0.0000E+00
 Noble Gases:
  0.5000E-01  0.9500E+00  0.0000E+00  0.0000E+00
 Iodine:
  0.5000E-01  0.2500E+00  0.0000E+00  0.0000E+00
 Cesium:
  0.5000E-01  0.2000E+00  0.0000E+00  0.0000E+00
 Tellurium:
  0.0000E+00  0.0500E+00  0.0000E+00  0.0000E+00
 Strontium:
  0.0000E+00  0.2000E-01  0.0000E+00  0.0000E+00
 Barium:
  0.0000E+00  0.2000E-01  0.0000E+00  0.0000E+00
 Ruthenium:
  0.0000E+00  0.2500E-02  0.0000E+00  0.0000E+00
 Cerium:
  0.0000E+00  0.5000E-03  0.0000E+00  0.0000E+00
 Lanthanum:
  0.0000E+00  0.2000E-03  0.0000E+00  0.0000E+00
 Non-Radioactive Aerosols (kg):
  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00
 End of Release File
```

12.12 MicroShield Output Files "JAF_[2hr, 8hr, 24hr, 96hr, & 72hr].MSD"

MicroShield 10.04
ENERCON Services, Inc.

Date	By	Checked

File Name	Run Date	Run Time	Duration
JAF_2hr.msd	July 12, 2019	12:04:54 PM	00:00:00

Project Info	
Case Title	JAF CR Shine Dose
Description	2-hr CR Dose
Geometry	13 - Rectangular Volume

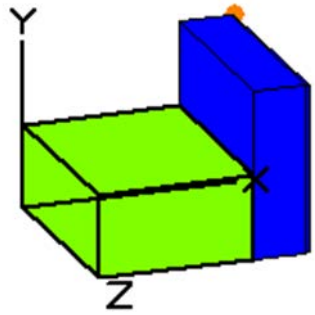
Source Dimensions	
Length	3.5e+3 cm (114 ft)
Width	4.6e+3 cm (151 ft)
Height	1.8e+3 cm (60 ft 6.0 in)

Dose Points

A	X	Y	Z
#1	4.7e+3 cm (154 ft 6.6 in)	3.7e+3 cm (122 ft 3.0 in)	0.0 cm (1 in)

Shield

Shield N	Dimension	Material	Density (g/cm³)
Source	2.95e+10 cm³	Air	0.00122
Shield 1	1158.24 cm	Air	0.00122
Shield 2	76.2 cm	Concrete	2.35
Air Gap		Air	0.00122
Immersion		Air	0.00122



Source Input: Grouping Method - Standard Indices
Number of Groups: 25
Lower Energy Cutoff: 0.015
Photons< 0.015: Excluded
Library: Grove

Nuclide	Ci	Bq	µCi/cm³	Bq/cm³
Am-241	7.5490e-005	2.7931e+006	2.5598e-009	9.4713e-005
Ba-137m	8.1697e+001	3.0228e+012	2.7703e-003	1.0250e+002
Ba-139	1.5690e+001	5.8053e+011	5.3204e-004	1.9685e+001
Ba-140	4.1460e+001	1.5340e+012	1.4059e-003	5.2017e+001
Ce-141	9.8230e-001	3.6345e+010	3.3309e-005	1.2324e+000
Ce-143	9.1050e-001	3.3689e+010	3.0874e-005	1.1424e+000

Ce-144	7.8910e-001	2.9197e+010	2.6758e-005	9.9004e-001
Cm-242	1.9150e-002	7.0855e+008	6.4936e-007	2.4026e-002
Cm-244	1.2660e-003	4.6842e+007	4.2929e-008	1.5884e-003
Co-58	1.5910e-002	5.8867e+008	5.3950e-007	1.9961e-002
Co-60	1.9050e-002	7.0485e+008	6.4597e-007	2.3901e-002
Cs-134	1.0730e+002	3.9701e+012	3.6385e-003	1.3462e+002
Cs-136	3.1960e+001	1.1825e+012	1.0837e-003	4.0098e+001
Cs-137	8.6360e+001	3.1953e+012	2.9284e-003	1.0835e+002
I-131	1.6600e+003	6.1420e+013	5.6289e-002	2.0827e+003
I-132	1.7230e+003	6.3751e+013	5.8426e-002	2.1617e+003
I-133	3.2540e+003	1.2040e+014	1.1034e-001	4.0826e+003
I-134	8.1560e+002	3.0177e+013	2.7656e-002	1.0233e+003
I-135	2.6650e+003	9.8605e+013	9.0368e-002	3.3436e+003
Kr-85	5.7200e+002	2.1164e+013	1.9396e-002	7.1765e+002
Kr-85m	6.9190e+003	2.5600e+014	2.3462e-001	8.6809e+003
Kr-87	6.3610e+003	2.3536e+014	2.1570e-001	7.9808e+003
Kr-88	1.5750e+004	5.8275e+014	5.3407e-001	1.9761e+004
La-140	9.5660e-001	3.5394e+010	3.2438e-005	1.2002e+000
La-141	2.7510e-001	1.0179e+010	9.3284e-006	3.4515e-001
La-142	1.5590e-001	5.7683e+009	5.2864e-006	1.9560e-001
Mo-99	5.2410e+000	1.9392e+011	1.7772e-004	6.5756e+000
Nb-95	4.1900e-001	1.5503e+010	1.4208e-005	5.2569e-001
Nd-147	1.5330e-001	5.6721e+009	5.1983e-006	1.9234e-001
Np-239	1.0910e+001	4.0367e+011	3.6995e-004	1.3688e+001
Pr-143	3.6990e-001	1.3686e+010	1.2543e-005	4.6409e-001
Pr-144	7.7782e-001	2.8779e+010	2.6375e-005	9.7588e-001
Pu-238	3.1860e-003	1.1788e+008	1.0803e-007	3.9973e-003
Pu-239	2.7910e-004	1.0327e+007	9.4641e-009	3.5017e-004
Pu-240	5.2270e-004	1.9340e+007	1.7724e-008	6.5580e-004
Pu-241	1.1270e-001	4.1699e+009	3.8216e-006	1.4140e-001
Rb-86	9.7800e-001	3.6186e+010	3.3163e-005	1.2270e+000
Rh-103m	4.6248e+000	1.7112e+011	1.5682e-004	5.8025e+000
Rh-105	3.0930e+000	1.1444e+011	1.0488e-004	3.8806e+000
Rh-106	2.0200e+000	7.4740e+010	6.8497e-005	2.5344e+000
Ru-103	4.6370e+000	1.7157e+011	1.5724e-004	5.8178e+000
Ru-105	2.4230e+000	8.9651e+010	8.2162e-005	3.0400e+000
Ru-106	2.0200e+000	7.4740e+010	6.8497e-005	2.5344e+000
Sb-127	5.2520e+000	1.9432e+011	1.7809e-004	6.5894e+000

Sb-129	1.1950e+001	4.4215e+011	4.0522e-004	1.4993e+001
Sr-89	2.6960e+001	9.9752e+011	9.1419e-004	3.3825e+001
Sr-90	3.5480e+000	1.3128e+011	1.2031e-004	4.4515e+000
Sr-91	2.9010e+001	1.0734e+012	9.8371e-004	3.6397e+001
Sr-92	2.0980e+001	7.7626e+011	7.1142e-004	2.6322e+001
Tc-99m	4.7160e+000	1.7449e+011	1.5992e-004	5.9169e+000
Te-127	5.2640e+000	1.9477e+011	1.7850e-004	6.6044e+000
Te-127m	9.0380e-001	3.3441e+010	3.0647e-005	1.1339e+000
Te-129	1.3520e+001	5.0024e+011	4.5845e-004	1.6963e+001
Te-129m	2.9780e+000	1.1019e+011	1.0098e-004	3.7363e+000
Te-131m	1.0700e+001	3.9590e+011	3.6283e-004	1.3425e+001
Te-132	7.8970e+001	2.9219e+012	2.6778e-003	9.9079e+001
Xe-133	6.0950e+004	2.2552e+015	2.0668e+000	7.6470e+004
Xe-135	2.5490e+004	9.4313e+014	8.6435e-001	3.1981e+004
Y-90	6.4720e-002	2.3946e+009	2.1946e-006	8.1200e-002
Y-91	3.4670e-001	1.2828e+010	1.1756e-005	4.3498e-001
Y-92	3.4600e+000	1.2802e+011	1.1733e-004	4.3411e+000
Y-93	3.3690e-001	1.2465e+010	1.1424e-005	4.2269e-001
Zr-95	4.1780e-001	1.5459e+010	1.4167e-005	5.2419e-001
Zr-97	3.7290e-001	1.3797e+010	1.2645e-005	4.6786e-001

Buildup: The material reference is Shield 2.
Integration Parameters

X Direction	10
Y Direction	20
Z Direction	20

Results

Energy (MeV)	Activity (Photons/sec)	Fluence Rate MeV/cm^2/sec No Buildup	Fluence Rate MeV/cm^2/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup	Absorbed Dose Rate mrad/hr No Buildup	Absorbed Dose Rate mrad/hr With Buildup	Absorbed Dose Rate mGy/hr No Buildup	Absorbed Dose Rate mGy/hr With Buildup
0.015	2.426e+07	0.000e+00	1.322e-29	0.000e+00	1.134e-30	0.000e+00	9.897e-31	0.000e+00	9.897e-33
0.02	3.447e+10	2.421e-301	2.956e-26	8.385e-303	1.024e-27	7.320e-303	8.938e-28	7.320e-305	8.938e-30
0.03	1.149e+15	4.234e-96	2.179e-21	4.196e-98	2.159e-23	3.664e-98	1.885e-23	3.664e-100	1.885e-25
0.04	1.305e+11	6.399e-51	6.564e-25	2.830e-53	2.903e-27	2.471e-53	2.534e-27	2.471e-55	2.534e-29

0.05	3.842e+11	8.474e-33	6.315e-24	2.257e-35	1.682e-26	1.971e-35	1.469e-26	1.971e-37	1.469e-28
0.06	1.587e+11	3.152e-25	3.357e-23	6.260e-28	6.669e-26	5.465e-28	5.822e-26	5.465e-30	5.822e-28
0.08	8.293e+14	8.215e-15	6.694e-13	1.300e-17	1.059e-15	1.135e-17	9.247e-16	1.135e-19	9.247e-18
0.1	1.593e+12	9.304e-15	1.638e-12	1.423e-17	2.506e-15	1.243e-17	2.187e-15	1.243e-19	2.187e-17
0.15	2.165e+14	1.108e-09	3.827e-07	1.825e-12	6.302e-10	1.593e-12	5.501e-10	1.593e-14	5.501e-12
0.2	1.008e+15	1.586e-07	6.135e-05	2.799e-10	1.083e-07	2.443e-10	9.453e-08	2.443e-12	9.453e-10
0.3	4.836e+13	5.071e-07	1.394e-04	9.619e-10	2.645e-07	8.397e-10	2.309e-07	8.397e-12	2.309e-09
0.4	2.006e+14	3.367e-05	5.955e-03	6.561e-08	1.160e-05	5.728e-08	1.013e-05	5.728e-10	1.013e-07
0.5	1.387e+14	1.835e-04	2.209e-02	3.602e-07	4.336e-05	3.145e-07	3.785e-05	3.145e-09	3.785e-07
0.6	1.415e+14	9.523e-04	8.242e-02	1.859e-06	1.609e-04	1.623e-06	1.404e-04	1.623e-08	1.404e-06
0.8	2.412e+14	1.913e-02	9.850e-01	3.639e-05	1.874e-03	3.177e-05	1.636e-03	3.177e-07	1.636e-05
1.0	1.250e+14	6.150e-02	2.135e+00	1.134e-04	3.936e-03	9.897e-05	3.436e-03	9.897e-07	3.436e-05
1.5	1.832e+14	1.958e+00	3.525e+01	3.293e-03	5.931e-02	2.875e-03	5.178e-02	2.875e-05	5.178e-04
2.0	3.773e+14	2.786e+01	3.394e+02	4.308e-02	5.248e-01	3.761e-02	4.582e-01	3.761e-04	4.582e-03
3.0	3.741e+13	2.865e+01	2.162e+02	3.888e-02	2.933e-01	3.394e-02	2.561e-01	3.394e-04	2.561e-03
4.0	1.514e+08	4.674e-04	2.629e-03	5.783e-07	3.252e-06	5.048e-07	2.839e-06	5.048e-09	2.839e-08
Total	**4.699e+15**	**5.855e+01**	**5.941e+02**	**8.540e-02**	**8.835e-01**	**7.455e-02**	**7.713e-01**	**7.455e-04**	**7.713e-03**

MicroShield 10.04
ENERCON Services, Inc.

Date	By	Checked

File Name	Run Date	Run Time	Duration
JAF_8hr.msd	July 12, 2019	12:05:28 PM	00:00:00

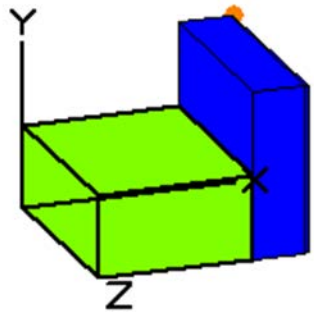
Project Info	
Case Title	JAF CR Shine Dose
Description	8-hr CR Dose
Geometry	13 - Rectangular Volume

Source Dimensions	
Length	3.5e+3 cm (114 ft)
Width	4.6e+3 cm (151 ft)
Height	1.8e+3 cm (60 ft 6.0 in)

Dose Points			
A	X	Y	Z
#1	4.7e+3 cm (154 ft 6.6 in)	3.7e+3 cm (122 ft 3.0 in)	0.0 cm (1 in)

Shield

Shield N	Dimension	Material	Density (g/cm³)
Source	2.95e+10 cm³	Air	0.00122
Shield 1	1158.24 cm	Air	0.00122
Shield 2	76.2 cm	Concrete	2.35
Air Gap		Air	0.00122
Immersion		Air	0.00122



Source Input: Grouping Method - Standard Indices
Number of Groups: 25
Lower Energy Cutoff: 0.015
Photons< 0.015: Excluded
Library: Grove

Nuclide	Ci	Bq	µCi/cm³	Bq/cm³
Am-241	1.0660e-005	3.9442e+005	3.6147e-010	1.3374e-005
Ba-137m	1.1286e+001	4.1757e+011	3.8269e-004	1.4160e+001
Ba-139	1.0820e-001	4.0034e+009	3.6690e-006	1.3575e-001
Ba-140	5.7630e+000	2.1323e+011	1.9542e-004	7.2305e+000
Ce-141	1.3780e-001	5.0986e+009	4.6727e-006	1.7289e-001
Ce-143	1.1310e-001	4.1847e+009	3.8351e-006	1.4190e-001
Ce-144	1.1110e-001	4.1107e+009	3.7673e-006	1.3939e-001

Cm-242	2.6960e-003	9.9752e+007	9.1419e-008	3.3825e-003
Cm-244	1.7840e-004	6.6008e+006	6.0494e-009	2.2383e-004
Co-58	2.2360e-003	8.2732e+007	7.5821e-008	2.8054e-003
Co-60	2.6850e-003	9.9345e+007	9.1046e-008	3.3687e-003
Cs-134	1.4820e+001	5.4834e+011	5.0253e-004	1.8594e+001
Cs-136	4.3580e+000	1.6125e+011	1.4778e-004	5.4677e+000
Cs-137	1.1930e+001	4.4141e+011	4.0454e-004	1.4968e+001
I-131	4.2630e+003	1.5773e+014	1.4456e-001	5.3485e+003
I-132	8.0310e+002	2.9715e+013	2.7233e-002	1.0076e+003
I-133	6.9900e+003	2.5863e+014	2.3703e-001	8.7699e+003
I-134	1.8630e+001	6.8931e+011	6.3173e-004	2.3374e+001
I-135	3.7270e+003	1.3790e+014	1.2638e-001	4.6760e+003
Kr-85	2.2680e+003	8.3916e+013	7.6906e-002	2.8455e+003
Kr-85m	1.0840e+004	4.0108e+014	3.6758e-001	1.3600e+004
Kr-87	9.5820e+002	3.5453e+013	3.2492e-002	1.2022e+003
Kr-88	1.4440e+004	5.3428e+014	4.8965e-001	1.8117e+004
La-140	6.8880e-001	2.5486e+010	2.3357e-005	8.6420e-001
La-141	1.3460e-002	4.9802e+008	4.5642e-007	1.6887e-002
La-142	1.4800e-003	5.4760e+007	5.0186e-008	1.8569e-003
Mo-99	6.9330e-001	2.5652e+010	2.3509e-005	8.6984e-001
Nb-95	5.9030e-002	2.1841e+009	2.0017e-006	7.4061e-002
Nd-147	2.1260e-002	7.8662e+008	7.2091e-007	2.6674e-002
Np-239	1.4290e+000	5.2873e+010	4.8456e-005	1.7929e+000
Pr-143	5.2980e-002	1.9603e+009	1.7965e-006	6.6471e-002
Pr-144	1.0951e-001	4.0519e+009	3.7134e-006	1.3740e-001
Pu-238	4.4900e-004	1.6613e+007	1.5225e-008	5.6333e-004
Pu-239	3.9360e-005	1.4563e+006	1.3347e-009	4.9383e-005
Pu-240	7.3650e-005	2.7251e+006	2.4974e-009	9.2404e-005
Pu-241	1.5870e-002	5.8719e+008	5.3814e-007	1.9911e-002
Rb-86	1.3390e-001	4.9543e+009	4.5404e-006	1.6800e-001
Rh-103m	6.4879e-001	2.4005e+010	2.2000e-005	8.1400e-001
Rh-105	4.1180e-001	1.5237e+010	1.3964e-005	5.1666e-001
Rh-106	2.8450e-001	1.0527e+010	9.6472e-006	3.5695e-001
Ru-103	6.5050e-001	2.4069e+010	2.2058e-005	8.1614e-001
Ru-105	1.3380e-001	4.9506e+009	4.5371e-006	1.6787e-001
Ru-106	2.8450e-001	1.0527e+010	9.6472e-006	3.5695e-001
Sb-127	7.0740e-001	2.6174e+010	2.3987e-005	8.8753e-001
Sb-129	6.4300e-001	2.3791e+010	2.1804e-005	8.0673e-001

Sr-89	3.7860e+000	1.4008e+011	1.2838e-004	4.7501e+000
Sr-90	5.0000e-001	1.8500e+010	1.6955e-005	6.2732e-001
Sr-91	2.6390e+000	9.7643e+010	8.9486e-005	3.3110e+000
Sr-92	6.3700e-001	2.3569e+010	2.1600e-005	7.9921e-001
Tc-99m	6.4790e-001	2.3972e+010	2.1970e-005	8.1288e-001
Te-127	7.3390e-001	2.7154e+010	2.4886e-005	9.2078e-001
Te-127m	1.2740e-001	4.7138e+009	4.3200e-006	1.5984e-001
Te-129	9.7230e-001	3.5975e+010	3.2970e-005	1.2199e+000
Te-129m	4.1870e-001	1.5492e+010	1.4198e-005	5.2532e-001
Te-131m	1.3120e+000	4.8544e+010	4.4489e-005	1.6461e+000
Te-132	1.0550e+001	3.9035e+011	3.5774e-004	1.3236e+001
Xe-133	2.3570e+005	8.7209e+015	7.9924e+000	2.9572e+005
Xe-135	7.6580e+004	2.8335e+015	2.5968e+000	9.6080e+004
Y-90	3.9880e-002	1.4756e+009	1.3523e-006	5.0035e-002
Y-91	5.2800e-002	1.9536e+009	1.7904e-006	6.6245e-002
Y-92	1.0550e+000	3.9035e+010	3.5774e-005	1.3236e+000
Y-93	3.1450e-002	1.1637e+009	1.0664e-006	3.9458e-002
Zr-95	5.8710e-002	2.1723e+009	1.9908e-006	7.3660e-002
Zr-97	4.1090e-002	1.5203e+009	1.3933e-006	5.1553e-002

Buildup: The material reference is Shield 2.
Integration Parameters

X Direction	10
Y Direction	20
Z Direction	20

Results

Energy (MeV)	Activity (Photons/sec)	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup	Absorbed Dose Rate mrad/hr No Buildup	Absorbed Dose Rate mrad/hr With Buildup	Absorbed Dose Rate mGy/hr No Buildup	Absorbed Dose Rate mGy/hr With Buildup
0.015	2.867e+06	0.000e+00	1.562e-30	0.000e+00	1.340e-31	0.000e+00	1.170e-31	0.000e+00	1.170e-33
0.02	4.703e+09	3.302e-302	4.032e-27	1.144e-303	1.397e-28	9.986e-304	1.219e-28	9.986e-306	1.219e-30
0.03	4.348e+15	1.602e-95	8.244e-21	1.588e-97	8.170e-23	1.386e-97	7.133e-23	1.386e-99	7.133e-25
0.04	1.727e+10	8.467e-52	8.685e-26	3.744e-54	3.841e-28	3.269e-54	3.353e-28	3.269e-56	3.353e-30
0.05	5.133e+10	1.132e-33	8.436e-25	3.016e-36	2.247e-27	2.633e-36	1.962e-27	2.633e-38	1.962e-29

0.06	2.157e+10	4.283e-26	4.562e-24	8.506e-29	9.061e-27	7.426e-29	7.911e-27	7.426e-31	7.911e-29
0.08	3.205e+15	3.174e-14	2.587e-12	5.023e-17	4.093e-15	4.385e-17	3.573e-15	4.385e-19	3.573e-17
0.1	1.112e+12	6.494e-15	1.143e-12	9.936e-18	1.749e-15	8.674e-18	1.527e-15	8.674e-20	1.527e-17
0.15	3.281e+14	1.679e-09	5.800e-07	2.765e-12	9.551e-10	2.414e-12	8.338e-10	2.414e-14	8.338e-12
0.2	2.697e+15	4.241e-07	1.641e-04	7.486e-10	2.896e-07	6.535e-10	2.529e-07	6.535e-12	2.529e-09
0.3	7.507e+13	7.872e-07	2.165e-04	1.493e-09	4.107e-07	1.304e-09	3.585e-07	1.304e-11	3.585e-09
0.4	1.874e+14	3.146e-05	5.563e-03	6.129e-08	1.084e-05	5.351e-08	9.463e-06	5.351e-10	9.463e-08
0.5	2.518e+14	3.331e-04	4.009e-02	6.539e-07	7.870e-05	5.708e-07	6.871e-05	5.708e-09	6.871e-07
0.6	1.451e+14	9.764e-04	8.451e-02	1.906e-06	1.649e-04	1.664e-06	1.440e-04	1.664e-08	1.440e-06
0.8	1.440e+14	1.142e-02	5.881e-01	2.173e-05	1.119e-03	1.897e-05	9.765e-04	1.897e-07	9.765e-06
1.0	1.151e+14	5.660e-02	1.965e+00	1.043e-04	3.622e-03	9.109e-05	3.162e-03	9.109e-07	3.162e-05
1.5	1.806e+14	1.930e+00	3.476e+01	3.248e-03	5.848e-02	2.835e-03	5.106e-02	2.835e-05	5.106e-04
2.0	3.422e+14	2.526e+01	3.078e+02	3.906e-02	4.759e-01	3.410e-02	4.155e-01	3.410e-04	4.155e-03
3.0	9.081e+12	6.956e+00	5.248e+01	9.437e-03	7.120e-02	8.238e-03	6.216e-02	8.238e-05	6.216e-04
4.0	1.437e+06	4.437e-06	2.495e-05	5.490e-09	3.087e-08	4.792e-09	2.695e-08	4.792e-11	2.695e-10
Total	**1.203e+16**	**3.422e+01**	**3.977e+02**	**5.188e-02**	**6.106e-01**	**4.529e-02**	**5.331e-01**	**4.529e-04**	**5.331e-03**

MicroShield 10.04
ENERCON Services, Inc.

Date	By	Checked

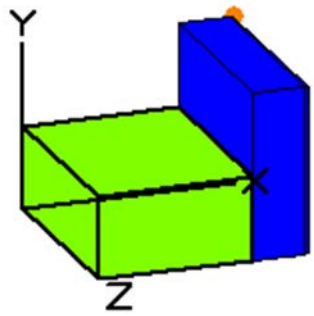
File Name	Run Date	Run Time	Duration
JAF_24hr.msd	July 12, 2019	12:06:02 PM	00:00:00

Project Info	
Case Title	JAF CR Shine Dose
Description	24-hr CR Dose
Geometry	13 - Rectangular Volume

Source Dimensions	
Length	3.5e+3 cm (114 ft)
Width	4.6e+3 cm (151 ft)
Height	1.8e+3 cm (60 ft 6.0 in)

Dose Points			
A	X	Y	Z
#1	4.7e+3 cm (154 ft 6.6 in)	3.7e+3 cm (122 ft 3.0 in)	0.0 cm (1 in)

Shield			
Shield N	Dimension	Material	Density (g/cm³)
Source	2.95e+10 cm³	Air	0.00122
Shield 1	1158.24 cm	Air	0.00122
Shield 2	76.2 cm	Concrete	2.35
Air Gap		Air	0.00122
Immersion		Air	0.00122



Source Input: Grouping Method - Standard Indices
Number of Groups: 25
Lower Energy Cutoff: 0.015
Photons< 0.015: Excluded
Library: Grove

Nuclide	Ci	Bq	µCi/cm³	Bq/cm³
Am-241	8.2850e-008	3.0655e+003	2.8094e-012	1.0395e-007
Ba-137m	7.2974e-002	2.7001e+009	2.4745e-006	9.1557e-002
Ba-139	2.6830e-007	9.9271e+003	9.0978e-012	3.3662e-007
Ba-140	4.3030e-002	1.5921e+009	1.4591e-006	5.3987e-002
Ce-141	1.0530e-003	3.8961e+007	3.5706e-008	1.3211e-003
Ce-143	6.2580e-004	2.3155e+007	2.1220e-008	7.8515e-004
Ce-144	8.5890e-004	3.1779e+007	2.9125e-008	1.0776e-003
Cm-242	2.0810e-005	7.6997e+005	7.0565e-010	2.6109e-005

Cm-244	1.3810e-006	5.1097e+004	4.6829e-011	1.7327e-006
Co-58	1.7200e-005	6.3640e+005	5.8324e-010	2.1580e-005
Co-60	2.0780e-005	7.6886e+005	7.0463e-010	2.6071e-005
Cs-134	9.5780e-002	3.5439e+009	3.2478e-006	1.2017e-001
Cs-136	2.7200e-002	1.0064e+009	9.2233e-007	3.4126e-002
Cs-137	7.7140e-002	2.8542e+009	2.6158e-006	9.6783e-002
I-131	4.3590e+003	1.6128e+014	1.4781e-001	5.4690e+003
I-132	7.0310e+000	2.6015e+011	2.3842e-004	8.8214e+000
I-133	4.4420e+003	1.6435e+014	1.5062e-001	5.5731e+003
I-134	6.4670e-005	2.3928e+006	2.1929e-009	8.1138e-005
I-135	7.5390e+002	2.7894e+013	2.5564e-002	9.4587e+002
Kr-85	2.4930e+003	9.2241e+013	8.4536e-002	3.1278e+003
Kr-85m	1.0020e+003	3.7074e+013	3.3977e-002	1.2572e+003
Kr-87	1.7180e-001	6.3566e+009	5.8256e-006	2.1555e-001
Kr-88	3.1960e+002	1.1825e+013	1.0837e-002	4.0098e+002
La-140	1.4530e-002	5.3761e+008	4.9270e-007	1.8230e-002
La-141	6.1970e-006	2.2929e+005	2.1014e-010	7.7750e-006
La-142	8.6080e-009	3.1850e+002	2.9189e-013	1.0800e-008
Mo-99	4.5380e-003	1.6791e+008	1.5388e-007	5.6936e-003
Nb-95	4.5690e-004	1.6905e+007	1.5493e-008	5.7325e-004
Nd-147	1.5780e-004	5.8386e+006	5.3509e-009	1.9798e-004
Np-239	9.0890e-003	3.3629e+008	3.0820e-007	1.1403e-002
Pr-143	4.2110e-004	1.5581e+007	1.4279e-008	5.2833e-004
Pr-144	8.4662e-004	3.1325e+007	2.8708e-008	1.0622e-003
Pu-238	3.4760e-006	1.2861e+005	1.1787e-010	4.3611e-006
Pu-239	3.0530e-007	1.1296e+004	1.0352e-011	3.8304e-007
Pu-240	5.7020e-007	2.1097e+004	1.9335e-011	7.1540e-007
Pu-241	1.2290e-004	4.5473e+006	4.1674e-009	1.5420e-004
Rb-86	8.4440e-004	3.1243e+007	2.8633e-008	1.0594e-003
Rh-103m	4.9649e-003	1.8370e+008	1.6836e-007	6.2292e-003
Rh-105	2.4270e-003	8.9799e+007	8.2298e-008	3.0450e-003
Rh-106	2.2000e-003	8.1400e+007	7.4600e-008	2.7602e-003
Ru-103	4.9780e-003	1.8419e+008	1.6880e-007	6.2456e-003
Ru-105	8.5230e-005	3.1535e+006	2.8901e-009	1.0693e-004
Ru-106	2.2000e-003	8.1400e+007	7.4600e-008	2.7602e-003
Sb-127	4.8580e-003	1.7975e+008	1.6473e-007	6.0950e-003
Sb-129	3.8210e-004	1.4138e+007	1.2957e-008	4.7940e-004
Sr-89	2.9040e-002	1.0745e+009	9.8472e-007	3.6435e-002

Sr-90	3.8710e-003	1.4323e+008	1.3126e-007	4.8567e-003
Sr-91	6.3570e-003	2.3521e+008	2.1556e-007	7.9758e-003
Sr-92	8.2360e-005	3.0473e+006	2.7928e-009	1.0333e-004
Tc-99m	4.5460e-003	1.6820e+008	1.5415e-007	5.7036e-003
Te-127	5.4220e-003	2.0061e+008	1.8386e-007	6.8027e-003
Te-127m	9.8580e-004	3.6475e+007	3.3428e-008	1.2368e-003
Te-129	3.3060e-003	1.2232e+008	1.1210e-007	4.1478e-003
Te-129m	3.2030e-003	1.1851e+008	1.0861e-007	4.0186e-003
Te-131m	7.0200e-003	2.5974e+008	2.3804e-007	8.8076e-003
Te-132	7.0890e-002	2.6229e+009	2.4038e-006	8.8942e-002
Xe-133	2.4200e+005	8.9540e+015	8.2060e+000	3.0362e+005
Xe-135	3.4840e+004	1.2891e+015	1.1814e+000	4.3712e+004
Y-90	8.7040e-004	3.2205e+007	2.9515e-008	1.0920e-003
Y-91	4.4380e-004	1.6421e+007	1.5049e-008	5.5681e-004
Y-92	8.0330e-004	2.9722e+007	2.7239e-008	1.0079e-003
Y-93	8.1210e-005	3.0048e+006	2.7538e-009	1.0189e-004
Zr-95	4.5130e-004	1.6698e+007	1.5303e-008	5.6622e-004
Zr-97	1.6500e-004	6.1050e+006	5.5950e-009	2.0702e-004

Buildup: The material reference is Shield 2.
Integration Parameters

X Direction	10
Y Direction	20
Z Direction	20

Results

Energy (MeV)	Activity (Photons/sec)	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup	Absorbed Dose Rate mrad/hr No Buildup	Absorbed Dose Rate mrad/hr With Buildup	Absorbed Dose Rate mGy/hr No Buildup	Absorbed Dose Rate mGy/hr With Buildup
0.015	1.662e+04	0.000e+00	9.057e-33	0.000e+00	7.768e-34	0.000e+00	6.782e-34	0.000e+00	6.782e-36
0.02	3.368e+07	2.365e-304	2.888e-29	8.193e-306	1.000e-30	7.152e-306	8.733e-31	7.152e-308	8.733e-33
0.03	4.369e+15	1.610e-95	8.284e-21	1.596e-97	8.210e-23	1.393e-97	7.168e-23	1.393e-99	7.168e-25
0.04	1.117e+08	5.477e-54	5.618e-28	2.422e-56	2.485e-30	2.115e-56	2.169e-30	2.115e-58	2.169e-32
0.05	3.449e+08	7.609e-36	5.670e-27	2.027e-38	1.510e-29	1.770e-38	1.319e-29	1.770e-40	1.319e-31
0.06	1.346e+08	2.673e-28	2.847e-26	5.309e-31	5.655e-29	4.635e-31	4.937e-29	4.635e-33	4.937e-31

0.08	3.290e+15	3.259e-14	2.656e-12	5.157e-17	4.202e-15	4.502e-17	3.669e-15	4.502e-19	3.669e-17
0.1	2.369e+10	1.384e-16	2.436e-14	2.117e-19	3.727e-17	1.848e-19	3.254e-17	1.848e-21	3.254e-19
0.15	3.211e+13	1.644e-10	5.676e-08	2.707e-13	9.347e-11	2.363e-13	8.160e-11	2.363e-15	8.160e-13
0.2	1.169e+15	1.839e-07	7.114e-05	3.245e-10	1.256e-07	2.833e-10	1.096e-07	2.833e-12	1.096e-09
0.3	1.771e+13	1.857e-07	5.106e-05	3.522e-10	9.686e-08	3.075e-10	8.456e-08	3.075e-12	8.456e-10
0.4	1.411e+14	2.368e-05	4.188e-03	4.614e-08	8.161e-06	4.028e-08	7.124e-06	4.028e-10	7.124e-08
0.5	1.491e+14	1.971e-04	2.373e-02	3.870e-07	4.658e-05	3.378e-07	4.066e-05	3.378e-09	4.066e-07
0.6	5.460e+13	3.674e-04	3.180e-02	7.172e-07	6.207e-05	6.261e-07	5.419e-05	6.261e-09	5.419e-07
0.8	1.984e+13	1.574e-03	8.101e-02	2.993e-06	1.541e-04	2.613e-06	1.345e-04	2.613e-08	1.345e-06
1.0	1.650e+13	8.115e-03	2.817e-01	1.496e-05	5.193e-04	1.306e-05	4.534e-04	1.306e-07	4.534e-06
1.5	2.128e+13	2.274e-01	4.096e+00	3.827e-04	6.891e-03	3.341e-04	6.016e-03	3.341e-06	6.016e-05
2.0	1.027e+13	7.580e-01	9.235e+00	1.172e-03	1.428e-02	1.023e-03	1.247e-02	1.023e-05	1.247e-04
3.0	9.215e+10	7.058e-02	5.326e-01	9.576e-05	7.225e-04	8.360e-05	6.308e-04	8.360e-07	6.308e-06
4.0	8.361e+00	2.581e-11	1.451e-10	3.193e-14	1.796e-13	2.787e-14	1.568e-13	2.787e-16	1.568e-15
Total	**9.292e+15**	**1.066e+00**	**1.429e+01**	**1.670e-03**	**2.269e-02**	**1.458e-03**	**1.980e-02**	**1.458e-05**	**1.980e-04**

MicroShield 10.04
ENERCON Services, Inc.

Date	By	Checked

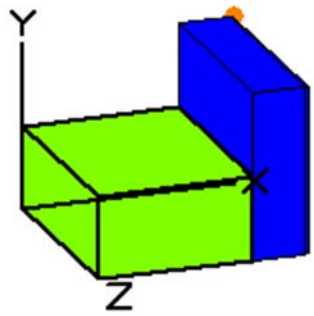
File Name	Run Date	Run Time	Duration
JAF_96hr.msd	July 12, 2019	12:06:36 PM	00:00:00

Project Info	
Case Title	JAF CR Shine Dose
Description	96-hr CR Dose
Geometry	13 - Rectangular Volume

Source Dimensions	
Length	3.5e+3 cm (114 ft)
Width	4.6e+3 cm (151 ft)
Height	1.8e+3 cm (60 ft 6.0 in)

Dose Points			
A	X	Y	Z
#1	4.7e+3 cm (154 ft 6.6 in)	3.7e+3 cm (122 ft 3.0 in)	0.0 cm (1 in)

Shield			
Shield N	Dimension	Material	Density (g/cm³)
Source	2.95e+10 cm³	Air	0.00122
Shield 1	1158.24 cm	Air	0.00122
Shield 2	76.2 cm	Concrete	2.35
Air Gap		Air	0.00122
Immersion		Air	0.00122



Source Input: Grouping Method - Standard Indices
Number of Groups: 25
Lower Energy Cutoff: 0.015
Photons< 0.015: Excluded
Library: Grove

Nuclide	Ci	Bq	µCi/cm³	Bq/cm³
Am-241	1.5720e-008	5.8164e+002	5.3305e-013	1.9723e-008
Ba-137m	9.2954e-003	3.4393e+008	3.1520e-007	1.1662e-002
Ba-139				
Ba-140	6.8040e-003	2.5175e+008	2.3072e-007	8.5366e-003
Ce-141	1.8380e-004	6.8006e+006	6.2325e-009	2.3060e-004
Ce-143	2.5680e-005	9.5016e+005	8.7079e-010	3.2219e-005
Ce-144	1.5870e-004	5.8719e+006	5.3814e-009	1.9911e-004
Cm-242	3.8250e-006	1.4153e+005	1.2970e-010	4.7990e-006

Cm-244	2.5700e-007	9.5090e+003	8.7147e-012	3.2244e-007
Co-58	3.1090e-006	1.1503e+005	1.0542e-010	3.9007e-006
Co-60	3.8640e-006	1.4297e+005	1.3103e-010	4.8479e-006
Cs-134	1.2170e-002	4.5029e+008	4.1268e-007	1.5269e-002
Cs-136	2.9570e-003	1.0941e+008	1.0027e-007	3.7100e-003
Cs-137	9.8260e-003	3.6356e+008	3.3319e-007	1.2328e-002
I-131	3.1690e+003	1.1725e+014	1.0746e-001	3.9760e+003
I-132	8.3210e-003	3.0788e+008	2.8216e-007	1.0440e-002
I-133	3.7960e+002	1.4045e+013	1.2872e-002	4.7626e+002
I-134				
I-135	3.7340e-001	1.3816e+010	1.2662e-005	4.6848e-001
Kr-85	1.2000e+003	4.4400e+013	4.0691e-002	1.5056e+003
Kr-85m	7.0120e-003	2.5944e+008	2.3777e-007	8.7975e-003
Kr-87				
Kr-88	3.5950e-006	1.3302e+005	1.2190e-010	4.5104e-006
La-140	5.9820e-003	2.2133e+008	2.0285e-007	7.5053e-003
La-141				
La-142				
Mo-99	3.9660e-004	1.4674e+007	1.3448e-008	4.9759e-004
Nb-95	8.4880e-005	3.1406e+006	2.8782e-009	1.0649e-004
Nd-147	2.4310e-005	8.9947e+005	8.2433e-010	3.0500e-005
Np-239	6.9970e-004	2.5889e+007	2.3726e-008	8.7787e-004
Pr-143	7.5560e-005	2.7957e+006	2.5622e-009	9.4801e-005
Pr-144	1.5643e-004	5.7879e+006	5.3044e-009	1.9626e-004
Pu-238	6.4740e-007	2.3954e+004	2.1953e-011	8.1225e-007
Pu-239	5.7090e-008	2.1123e+003	1.9359e-012	7.1627e-008
Pu-240	1.0620e-007	3.9294e+003	3.6012e-012	1.3324e-007
Pu-241	2.2870e-005	8.4619e+005	7.7550e-010	2.8694e-005
Rb-86	9.6240e-005	3.5609e+006	3.2634e-009	1.2075e-004
Rh-103m	8.7659e-004	3.2434e+007	2.9724e-008	1.0998e-003
Rh-105	1.1070e-004	4.0959e+006	3.7538e-009	1.3889e-004
Rh-106	4.0720e-004	1.5066e+007	1.3808e-008	5.1089e-004
Ru-103	8.7890e-004	3.2519e+007	2.9803e-008	1.1027e-003
Ru-105	2.0840e-010	7.7108e+000	7.0667e-015	2.6147e-010
Ru-106	4.0720e-004	1.5066e+007	1.3808e-008	5.1089e-004
Sb-127	5.2690e-004	1.9495e+007	1.7867e-008	6.6107e-004
Sb-129	6.8370e-010	2.5297e+001	2.3184e-014	8.5780e-010
Sr-89	5.1880e-003	1.9196e+008	1.7592e-007	6.5091e-003

Sr-90	7.2050e-004	2.6659e+007	2.4432e-008	9.0397e-004
Sr-91	6.1890e-006	2.2899e+005	2.0986e-010	7.7650e-006
Sr-92				
Tc-99m	4.0660e-004	1.5044e+007	1.3787e-008	5.1014e-004
Te-127	6.8440e-004	2.5323e+007	2.3207e-008	8.5868e-004
Te-127m	1.8240e-004	6.7488e+006	6.1850e-009	2.2885e-004
Te-129	4.8470e-004	1.7934e+007	1.6436e-008	6.0812e-004
Te-129m	5.6050e-004	2.0739e+007	1.9006e-008	7.0323e-004
Te-131m	2.4760e-004	9.1612e+006	8.3959e-009	3.1065e-004
Te-132	6.9710e-003	2.5793e+008	2.3638e-007	8.7461e-003
Xe-133	8.5610e+004	3.1676e+015	2.9030e+000	1.0741e+005
Xe-135	1.6230e+002	6.0051e+012	5.5035e-003	2.0363e+002
Y-90	4.6550e-004	1.7224e+007	1.5785e-008	5.8404e-004
Y-91	8.2530e-005	3.0536e+006	2.7985e-009	1.0355e-004
Y-92	1.5070e-010	5.5759e+000	5.1101e-015	1.8907e-010
Y-93	1.0800e-007	3.9960e+003	3.6622e-012	1.3550e-007
Zr-95	8.1320e-005	3.0088e+006	2.7575e-009	1.0203e-004
Zr-97	1.6030e-006	5.9311e+004	5.4356e-011	2.0112e-006

Buildup: The material reference is Shield 2.
Integration Parameters

X Direction	10
Y Direction	20
Z Direction	20

Results

Energy (MeV)	Activity (Photons/sec)	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup	Absorbed Dose Rate mrad/hr No Buildup	Absorbed Dose Rate mrad/hr With Buildup	Absorbed Dose Rate mGy/hr No Buildup	Absorbed Dose Rate mGy/hr With Buildup
0.015	2.573e+03	0.000e+00	1.402e-33	0.000e+00	1.203e-34	0.000e+00	1.050e-34	0.000e+00	1.050e-36
0.02	4.357e+06	3.059e-305	3.736e-30	1.060e-306	1.294e-31	9.252e-307	1.130e-31	9.252e-309	1.130e-33
0.03	1.525e+15	5.621e-96	2.892e-21	5.571e-98	2.866e-23	4.863e-98	2.502e-23	4.863e-100	2.502e-25
0.04	1.353e+07	6.631e-55	6.802e-29	2.933e-57	3.008e-31	2.560e-57	2.626e-31	2.560e-59	2.626e-33
0.05	3.397e+07	7.493e-37	5.583e-28	1.996e-39	1.487e-30	1.743e-39	1.298e-30	1.743e-41	1.298e-32
0.06	1.435e+07	2.848e-29	3.034e-27	5.657e-32	6.026e-30	4.939e-32	5.261e-30	4.939e-34	5.261e-32

0.08	1.166e+15	1.154e-14	9.407e-13	1.827e-17	1.489e-15	1.595e-17	1.300e-15	1.595e-19	1.300e-17
0.1	3.053e+07	1.783e-19	3.139e-17	2.728e-22	4.802e-20	2.382e-22	4.192e-20	2.382e-24	4.192e-22
0.15	1.758e+10	8.998e-14	3.108e-11	1.482e-16	5.117e-14	1.294e-16	4.467e-14	1.294e-18	4.467e-16
0.2	7.964e+12	1.252e-09	4.846e-07	2.210e-12	8.552e-10	1.930e-12	7.466e-10	1.930e-14	7.466e-12
0.3	7.742e+12	8.119e-08	2.233e-05	1.540e-10	4.235e-08	1.344e-10	3.697e-08	1.344e-12	3.697e-10
0.4	9.528e+13	1.599e-05	2.829e-03	3.116e-08	5.511e-06	2.721e-08	4.811e-06	2.721e-10	4.811e-08
0.5	1.308e+13	1.730e-05	2.082e-03	3.396e-08	4.088e-06	2.965e-08	3.568e-06	2.965e-10	3.568e-08
0.6	9.125e+12	6.141e-05	5.315e-03	1.199e-07	1.037e-05	1.046e-07	9.056e-06	1.046e-09	9.056e-08
0.8	3.212e+12	2.548e-04	1.312e-02	4.847e-07	2.495e-05	4.231e-07	2.178e-05	4.231e-09	2.178e-07
1.0	3.423e+11	1.684e-04	5.846e-03	3.104e-07	1.078e-05	2.710e-07	9.407e-06	2.710e-09	9.407e-08
1.5	3.559e+11	3.804e-03	6.850e-02	6.399e-06	1.152e-04	5.587e-06	1.006e-04	5.587e-08	1.006e-06
2.0	1.533e+09	1.131e-04	1.379e-03	1.750e-07	2.132e-06	1.527e-07	1.861e-06	1.527e-09	1.861e-08
3.0	7.882e+06	6.037e-06	4.555e-05	8.191e-09	6.180e-08	7.151e-09	5.395e-08	7.151e-11	5.395e-10
Total	**2.828e+15**	**4.441e-03**	**9.913e-02**	**7.563e-06**	**1.732e-04**	**6.602e-06**	**1.512e-04**	**6.602e-08**	**1.512e-06**

MicroShield 10.04
ENERCON Services, Inc.

Date	By	Checked

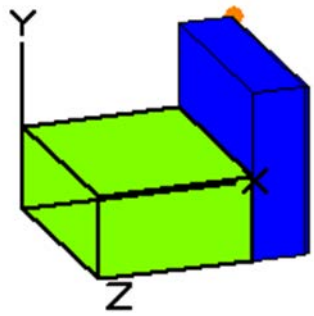
File Name	Run Date	Run Time	Duration
JAF_720hr.msd	July 12, 2019	12:07:10 PM	00:00:00

Project Info	
Case Title	JAF CR Shine Dose
Description	720-hr CR Dose
Geometry	13 - Rectangular Volume

Source Dimensions	
Length	3.5e+3 cm (114 ft)
Width	4.6e+3 cm (151 ft)
Height	1.8e+3 cm (60 ft 6.0 in)

Dose Points			
A	X	Y	Z
#1	4.7e+3 cm (154 ft 6.6 in)	3.7e+3 cm (122 ft 3.0 in)	0.0 cm (1 in)

Shield			
Shield N	Dimension	Material	Density (g/cm³)
Source	2.95e+10 cm³	Air	0.00122
Shield 1	1158.24 cm	Air	0.00122
Shield 2	76.2 cm	Concrete	2.35
Air Gap		Air	0.00122
Immersion		Air	0.00122



Source Input: Grouping Method - Standard Indices
Number of Groups: 25
Lower Energy Cutoff: 0.015
Photons< 0.015: Excluded
Library: Grove

Nuclide	Ci	Bq	µCi/cm³	Bq/cm³
Am-241	1.3390e-008	4.9543e+002	4.5404e-013	1.6800e-008
Ba-137m	6.7771e-003	2.5075e+008	2.2981e-007	8.5029e-003
Ba-139				
Ba-140	1.2080e-003	4.4696e+007	4.0962e-008	1.5156e-003
Ce-141	7.7110e-005	2.8531e+006	2.6147e-009	9.6745e-005
Ce-143	3.8090e-011	1.4093e+000	1.2916e-015	4.7789e-011
Ce-144	1.0880e-004	4.0256e+006	3.6893e-009	1.3650e-004
Cm-242	2.5010e-006	9.2537e+004	8.4807e-011	3.1379e-006

Cm-244	1.8720e-007	6.9264e+003	6.3478e-012	2.3487e-007
Co-58	1.7600e-006	6.5120e+004	5.9680e-011	2.2082e-006
Co-60	2.7960e-006	1.0345e+005	9.4810e-011	3.5080e-006
Cs-134	8.6770e-003	3.2105e+008	2.9423e-007	1.0887e-002
Cs-136	5.4560e-004	2.0187e+007	1.8501e-008	6.8453e-004
Cs-137	7.1640e-003	2.6507e+008	2.4293e-007	8.9883e-003
I-131	2.1030e+002	7.7811e+012	7.1311e-003	2.6385e+002
I-132	2.4080e-005	8.9096e+005	8.1653e-010	3.0212e-005
I-133	2.2070e-007	8.1659e+003	7.4838e-012	2.7690e-007
I-134				
I-135				
Kr-85	8.7240e+002	3.2279e+013	2.9582e-002	1.0945e+003
Kr-85m				
Kr-87				
Kr-88				
La-140	1.4030e-003	5.1911e+007	4.7575e-008	1.7603e-003
La-141				
La-142				
Mo-99	4.1280e-007	1.5274e+004	1.3998e-011	5.1792e-007
Nb-95	5.7440e-005	2.1253e+006	1.9477e-009	7.2067e-005
Nd-147	3.4400e-006	1.2728e+005	1.1665e-010	4.3160e-006
Np-239	2.4260e-007	8.9762e+003	8.2264e-012	3.0438e-007
Pr-143	1.5170e-005	5.6129e+005	5.1440e-010	1.9033e-005
Pr-144	1.0724e-004	3.9680e+006	3.6366e-009	1.3455e-004
Pu-238	4.7400e-007	1.7538e+004	1.6073e-011	5.9470e-007
Pu-239	4.1830e-008	1.5477e+003	1.4184e-012	5.2482e-008
Pu-240	7.7530e-008	2.8686e+003	2.6290e-012	9.7272e-008
Pu-241	1.6640e-005	6.1568e+005	5.6425e-010	2.0877e-005
Rb-86	2.6760e-005	9.9012e+005	9.0741e-010	3.3574e-005
Rh-103m	4.0463e-004	1.4971e+007	1.3721e-008	5.0767e-004
Rh-105	3.9400e-010	1.4578e+001	1.3360e-014	4.9433e-010
Rh-106	2.8320e-004	1.0478e+007	9.6031e-009	3.5531e-004
Ru-103	4.0570e-004	1.5011e+007	1.3757e-008	5.0901e-004
Ru-105				
Ru-106	2.8320e-004	1.0478e+007	9.6031e-009	3.5531e-004
Sb-127	3.5670e-006	1.3198e+005	1.2095e-010	4.4753e-006
Sb-129				
Sr-89	2.6520e-003	9.8124e+007	8.9927e-008	3.3273e-003

Sr-90	5.2530e-004	1.9436e+007	1.7813e-008	6.5906e-004
Sr-91				
Sr-92				
Tc-99m	4.2320e-007	1.5658e+004	1.4350e-011	5.3096e-007
Te-127	1.2080e-004	4.4696e+006	4.0962e-009	1.5156e-004
Te-127m	1.1510e-004	4.2587e+006	3.9030e-009	1.4441e-004
Te-129	2.0700e-004	7.6590e+006	7.0192e-009	2.5971e-004
Te-129m	2.3940e-004	8.8578e+006	8.1179e-009	3.0036e-004
Te-131m	9.9040e-011	3.6645e+000	3.3584e-015	1.2426e-010
Te-132	2.0170e-005	7.4629e+005	6.8395e-010	2.5306e-005
Xe-133	1.9970e+003	7.3889e+013	6.7717e-002	2.5055e+003
Xe-135				
Y-90	5.2800e-004	1.9536e+007	1.7904e-008	6.6245e-004
Y-91	4.4300e-005	1.6391e+006	1.5022e-009	5.5581e-005
Y-92				
Y-93				
Zr-95	4.4810e-005	1.6580e+006	1.5195e-009	5.6220e-005
Zr-97				

Buildup: The material reference is Shield 2.
Integration Parameters

X Direction	10
Y Direction	20
Z Direction	20

Results

Energy (MeV)	Activity (Photons/sec)	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup	Absorbed Dose Rate mrad/hr No Buildup	Absorbed Dose Rate mrad/hr With Buildup	Absorbed Dose Rate mGy/hr No Buildup	Absorbed Dose Rate mGy/hr With Buildup
0.015	1.739e+03	0.000e+00	9.475e-34	0.000e+00	8.127e-35	0.000e+00	7.095e-35	0.000e+00	7.095e-37
0.02	1.284e+06	9.015e-306	1.101e-30	3.123e-307	3.813e-32	2.726e-307	3.329e-32	2.726e-309	3.329e-34
0.03	3.581e+13	1.320e-97	6.790e-23	1.308e-99	6.729e-25	1.142e-99	5.875e-25	1.142e-101	5.875e-27
0.04	5.865e+06	2.875e-55	2.949e-29	1.271e-57	1.304e-31	1.110e-57	1.139e-31	1.110e-59	1.139e-33
0.05	1.539e+05	3.395e-39	2.530e-30	9.044e-42	6.739e-33	7.896e-42	5.883e-33	7.896e-44	5.883e-35
0.06	2.540e+06	5.042e-30	5.371e-28	1.002e-32	1.067e-30	8.743e-33	9.314e-31	8.743e-35	9.314e-33

0.08	2.732e+13	2.706e-16	2.205e-14	4.282e-19	3.489e-17	3.739e-19	3.046e-17	3.739e-21	3.046e-19
0.1	2.975e+05	1.738e-21	3.059e-19	2.658e-24	4.679e-22	2.321e-24	4.085e-22	2.321e-26	4.085e-24
0.15	7.857e+06	4.022e-17	1.389e-14	6.623e-20	2.287e-17	5.782e-20	1.997e-17	5.782e-22	1.997e-19
0.2	7.321e+10	1.151e-11	4.454e-09	2.032e-14	7.861e-12	1.774e-14	6.863e-12	1.774e-16	6.863e-14
0.3	5.084e+11	5.331e-09	1.466e-06	1.011e-11	2.781e-09	8.828e-12	2.428e-09	8.828e-14	2.428e-11
0.4	6.315e+12	1.060e-06	1.875e-04	2.066e-09	3.653e-07	1.803e-09	3.189e-07	1.803e-11	3.189e-09
0.5	1.682e+11	2.225e-07	2.678e-05	4.367e-10	5.256e-08	3.812e-10	4.589e-08	3.812e-12	4.589e-10
0.6	5.826e+11	3.921e-06	3.394e-04	7.653e-09	6.624e-07	6.681e-09	5.783e-07	6.681e-11	5.783e-09
0.8	1.406e+11	1.115e-05	5.741e-04	2.121e-08	1.092e-06	1.852e-08	9.534e-07	1.852e-10	9.534e-09
1.0	3.545e+07	1.744e-08	6.055e-07	3.215e-11	1.116e-09	2.806e-11	9.743e-10	2.806e-13	9.743e-12
1.5	5.966e+07	6.375e-07	1.148e-05	1.073e-09	1.932e-08	9.364e-10	1.686e-08	9.364e-12	1.686e-10
2.0	5.017e+05	3.703e-08	4.512e-07	5.727e-11	6.977e-10	5.000e-11	6.091e-10	5.000e-13	6.091e-12
3.0	1.848e+06	1.416e-06	1.068e-05	1.921e-09	1.449e-08	1.677e-09	1.265e-08	1.677e-11	1.265e-10
Total	**7.092e+13**	**1.847e-05**	**1.152e-03**	**3.446e-08**	**2.211e-06**	**3.009e-08**	**1.930e-06**	**3.009e-10**	**1.930e-08**

12.13 Sensitivity Studies

Control Room filtered intake

Filtered Intake Flow (cfm)	CR Dose (rem TEDE)	Computer Run
900	3.4086	JAFMS_270.psf
1000	3.2596	JAFMS_270_1000.psf
1100	3.1302	JAFMS_270_1100.psf

Conclusion: Lower filtered intake flow is conservative.

JAFMS_270.out

See Section 12.4

JAFMS_270_1000.out

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 10:58:06
########################################################################

########################################################################
                    File information
########################################################################

Plant file           = C:\radtrad3.03\Fitz\JAFMS_270_1000.psf
Inventory file       = c:\radtrad3.03\fitz\jafloca.nif
Release file         = c:\radtrad3.03\defaults\bwr_dba.rft
Dose Conversion file = c:\radtrad3.03\defaults\fgr11&12.inp




    #####    ####   #####    #  #     #  #####   #     #  #####
    #    #  #       #        #  ##    #  #    #  #     #    #
    #    #  #       #        #  # #   #  #    #  #     #    #
    #####    ####   ####     #  #  #  #  #####   #     #    #
    #            #  #        #  #   # #  #       #     #    #
    #            #  #        #  #    ##  #       #     #    #
    #        ####   #        #  #     #  #        ####     #


Radtrad 3.03 4/15/2001
Containment Leakage from Drywell Using CAVEX Core Inventory -  Containment Shine Dose
Nuclide Inventory File:
c:\radtrad3.03\fitz\jafloca.nif
Plant Power Level:
 2.5867E+03
Compartments:
  8
Compartment 1:
DW
  3
 1.5000E+05
  1
  0
  0
  0
  0
Compartment 2:
RB
  3
 1.1850E+06
  0
  0
  0
  0
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
CR
  1
```

```
 1.0100E+05
  0
  0
  0
  0
  0
Compartment 5:
MSL "B" Volume 1
  3
 2.9829E+02
  0
  0
  0
  0
  0
Compartment 6:
MSL "B" Volume 2
  3
 5.0800E+02
  0
  0
  0
  0
  0
Compartment 7:
MSL "C" Volume 3
  3
 2.5777E+02
  0
  0
  0
  0
  0
Compartment 8:
MSL "C" Volume 4
  3
 5.4852E+02
  0
  0
  0
  0
  0
Pathways:
 11
Pathway 1:
DW to  RB
  1
  2
  4
Pathway 2:
RB toEnvironment
  2
  3
  2
Pathway 3:
Environment to CR Unfiltered
  3
  4
  2
Pathway 4:
Environment to  CR Filtered
  3
  4
  2
Pathway 5:
CR to  Environment - Exhaust
  4
  3
  2
Pathway 6:
DW to  MSL "B" Volume 1
  1
```

```
  5
  2
Pathway 7:
MSL "B" Volume 1 to  MSL "B" Volume 2
  5
  6
  2
Pathway 8:
MSL "B" Volume 2 to  Environment
  6
  3
  2
Pathway 9:
DW to  MSL "C" Volume 3
  1
  7
  2
Pathway 10:
MSL "C" Volume 3 to  MSL "C" Volume 4
  7
  8
  2
Pathway 11:
MSL "C" Volume 4 to  Environment
  8
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\radtrad3.03\defaults\fgr11&12.inp
c:\radtrad3.03\defaults\bwr_dba.rft
  0.0000E+00
  1
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  8
Compartment 1:
  1
  1
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.5000E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   3.0000E+00
  2.3000E+00   3.0000E+00
  2.4000E+00   3.0000E+00
  3.0000E+00   3.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.5000E+00   3.0000E+01
  2.0000E+00   3.0000E+01
```

```
  2.1000E+00   0.0000E+00
  2.3000E+00   0.0000E+00
  2.4000E+00   0.0000E+00
  3.0000E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 5:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 6:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 7:
  0
  1
  0
  0
  0
  0
  0
  0
```

```
  0
Compartment 8:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Pathways:
 11
Pathway 1:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.5000E+00
  2.4000E+01   7.5000E-01
  7.2000E+02   0.0000E+00
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  3.3330E-01   0.0000E+00   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   4.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
```

```
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   1.0000E+02   1.0000E+02   1.0000E+02
  5.0000E-01   1.4000E+03   1.0000E+02   1.0000E+02   1.0000E+02
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   8.2500E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   4.7800E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   2.3900E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   8.2500E-01   9.9940E+01   4.9200E+00   0.0000E+00
  2.0000E+00   4.7800E-01   9.9940E+01   4.9200E+00   0.0000E+00
  8.0000E+00   4.7800E-01   9.9940E+01   6.5700E+00   0.0000E+00
  2.4000E+01   2.3900E-01   9.9940E+01   1.1440E+01   0.0000E+00
  4.8000E+01   2.3900E-01   9.9940E+01   2.3680E+01   0.0000E+00
  7.2000E+01   2.3900E-01   9.9940E+01   4.1310E+01   0.0000E+00
  9.6000E+01   2.3900E-01   9.9940E+01   6.0070E+01   0.0000E+00
  2.4000E+02   2.3900E-01   9.9940E+01   9.5290E+01   0.0000E+00
  4.8000E+02   2.3900E-01   9.9940E+01   9.6640E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 8:
  0
  0
  0
```

```
  0
  0
  1
 10
  0.0000E+00   2.2500E+00   0.0000E+00   8.6800E+00   0.0000E+00
  2.0000E+00   1.3030E+00   0.0000E+00   8.6800E+00   0.0000E+00
  8.0000E+00   1.3030E+00   0.0000E+00   1.1520E+01   0.0000E+00
  2.4000E+01   6.5200E-01   0.0000E+00   1.9630E+01   0.0000E+00
  4.8000E+01   6.5200E-01   0.0000E+00   3.8400E+01   0.0000E+00
  7.2000E+01   6.5200E-01   0.0000E+00   6.1300E+01   0.0000E+00
  9.6000E+01   6.5200E-01   0.0000E+00   8.0030E+01   0.0000E+00
  2.4000E+02   6.5200E-01   0.0000E+00   9.7710E+01   0.0000E+00
  4.8000E+02   6.5200E-01   0.0000E+00   9.7880E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 9:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   8.2500E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   4.7800E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   2.3900E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 10:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   8.2500E-01   9.9910E+01   3.6500E+00   0.0000E+00
  2.0000E+00   4.7800E-01   9.9910E+01   3.6500E+00   0.0000E+00
  8.0000E+00   4.7800E-01   9.9910E+01   4.8900E+00   0.0000E+00
  2.4000E+01   2.3900E-01   9.9910E+01   8.5700E+00   0.0000E+00
  4.8000E+01   2.3900E-01   9.9910E+01   1.8070E+01   0.0000E+00
  7.2000E+01   2.3900E-01   9.9910E+01   3.2550E+01   0.0000E+00
  9.6000E+01   2.3900E-01   9.9910E+01   4.9360E+01   0.0000E+00
  2.4000E+02   2.3900E-01   9.9910E+01   9.1170E+01   0.0000E+00
  4.8000E+02   2.3900E-01   9.9910E+01   9.3910E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 11:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   2.2500E+00   0.0000E+00   8.9700E+00   0.0000E+00
  2.0000E+00   1.3030E+00   0.0000E+00   8.9700E+00   0.0000E+00
```

```
  8.0000E+00   1.3030E+00   0.0000E+00   1.1900E+01   0.0000E+00
  2.4000E+01   6.5200E-01   0.0000E+00   2.0250E+01   0.0000E+00
  4.8000E+01   6.5200E-01   0.0000E+00   3.9440E+01   0.0000E+00
  7.2000E+01   6.5200E-01   0.0000E+00   6.2550E+01   0.0000E+00
  9.6000E+01   6.5200E-01   0.0000E+00   8.1060E+01   0.0000E+00
  2.4000E+02   6.5200E-01   0.0000E+00   9.7730E+01   0.0000E+00
  4.8000E+02   6.5200E-01   0.0000E+00   9.7890E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
EAB
  3
  1
  4
  0.0000E+00   1.7900E-04
  1.0000E+00   1.7900E-04
  2.0000E+00   1.7900E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  0
Location 2:
LPZ
  3
  1
  6
  0.0000E+00   2.0000E-05
  4.0000E+00   2.0000E-05
  8.0000E+00   1.3400E-05
  2.4000E+01   5.5900E-06
  9.6000E+01   1.6000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   2.3000E-04
  0
Location 3:
CR
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  7
  0.0000E+00   4.5200E-03
  3.3330E-01   4.5200E-03
  2.0000E+00   3.3300E-03
  8.0000E+00   1.1900E-03
  2.4000E+01   8.2700E-04
  9.6000E+01   6.4000E-04
  7.2000E+02   0.0000E+00
```

```
Simulation Parameters:
  7
  0.0000E+00   1.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   5.0000E-01
  8.0000E+00   1.0000E+00
  2.4000E+01   2.0000E+00
  9.6000E+01   5.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\radtrad3.o387
  1
  1
  1
  0
  0
End of Scenario File
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 10:58:06
########################################################################

########################################################################
                    Plant Description
########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.5867E+03 MWth

Number of compartments    =   8

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: DW
Compartment volume =   1.5000E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Exit Pathway Number    1: DW to  RB
   Exit Pathway Number    6: DW to  MSL "B" Volume 1
   Exit Pathway Number    9: DW to  MSL "C" Volume 3

Compartment number  2
Name: RB
Compartment volume =   1.1850E+06 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  2
   Inlet Pathway Number   1: DW to  RB
   Exit Pathway Number    2: RB toEnvironment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   2: RB toEnvironment
   Inlet Pathway Number   5: CR to  Environment - Exhaust
   Inlet Pathway Number   8: MSL "B" Volume 2 to  Environment
   Inlet Pathway Number  11: MSL "C" Volume 4 to  Environment
   Exit Pathway Number    3: Environment to CR Unfiltered
   Exit Pathway Number    4: Environment to  CR Filtered

Compartment number  4
Name: CR
Compartment volume =   1.0100E+05 (Cubic feet)
Compartment type is Control Room
Pathways into and out of compartment  4
   Inlet Pathway Number   3: Environment to CR Unfiltered
   Inlet Pathway Number   4: Environment to  CR Filtered
   Exit Pathway Number    5: CR to  Environment - Exhaust

Compartment number  5
Name: MSL "B" Volume 1
Compartment volume =   2.9829E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  5
   Inlet Pathway Number   6: DW to  MSL "B" Volume 1
   Exit Pathway Number    7: MSL "B" Volume 1 to  MSL "B" Volume 2

Compartment number  6
Name: MSL "B" Volume 2
Compartment volume =   5.0800E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  6
   Inlet Pathway Number   7: MSL "B" Volume 1 to  MSL "B" Volume 2
   Exit Pathway Number    8: MSL "B" Volume 2 to  Environment
```

```
Compartment number  7
Name: MSL "C" Volume 3
Compartment volume =   2.5777E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  7
   Inlet Pathway Number   9: DW to  MSL "C" Volume 3
   Exit Pathway Number   10: MSL "C" Volume 3 to  MSL "C" Volume 4

Compartment number  8
Name: MSL "C" Volume 4
Compartment volume =   5.4852E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  8
   Inlet Pathway Number  10: MSL "C" Volume 3 to  MSL "C" Volume 4
   Exit Pathway Number   11: MSL "C" Volume 4 to  Environment

Total number of pathways =  11
```

```
######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 10:58:06
######################################################################

######################################################################
                    Scenario Description
######################################################################

Radioactive Decay is enabled
Calculation of Daughters is enabled

Release Fractions and Timings
               GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
            0.500000 hr    1.5000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        4.279E+03
IODINE       5.0000E-02     2.5000E-01      0.0000E+00        2.249E+02
CESIUM       5.0000E-02     2.0000E-01      0.0000E+00        4.682E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        3.100E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.674E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.550E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.852E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        5.214E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.978E+00

Inventory Power =      2587. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
               (Ci/MWt)      (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   1.529E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.830E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   5.260E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.670E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.740E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.360E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.600E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   3.240E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   4.260E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.030E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.200E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   4.400E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   4.110E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.250E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.640E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   5.020E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.860E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   5.030E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.140E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.540E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.460E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   3.180E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.940E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.980E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.560E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   7.910E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.530E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   4.340E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   7.420E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.430E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   5.380E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.860E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.710E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.960E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.640E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.430E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
 I-135     2   5.330E+04  2.380E+04   8.294E-14   8.460E-09   3.320E-10
 Xe-133    1   5.630E+04  4.532E+05   1.560E-15   0.000E+00   0.000E+00
 Xe-135    1   2.310E+04  3.272E+04   1.190E-14   0.000E+00   0.000E+00
 Cs-134    3   7.220E+03  6.507E+07   7.570E-14   1.110E-08   1.250E-08
 Cs-136    3   2.160E+03  1.132E+06   1.060E-13   1.730E-09   1.980E-09
 Cs-137    3   5.810E+03  9.467E+08   2.725E-14   7.930E-09   8.630E-09
 Ba-139    6   5.150E+04  4.962E+03   2.170E-15   2.400E-12   4.640E-11
```

Ba-140	6	5.000E+04	1.101E+06	8.580E-15	2.560E-10	1.010E-09
La-140	9	5.240E+04	1.450E+05	1.170E-13	6.870E-11	1.310E-09
La-141	9	4.700E+04	1.415E+04	2.390E-15	9.400E-12	1.570E-10
La-142	9	4.600E+04	5.550E+03	1.440E-13	8.740E-12	6.840E-11
Ce-141	8	4.720E+04	2.808E+06	3.430E-15	2.550E-11	2.420E-09
Ce-143	8	4.560E+04	1.188E+05	1.290E-14	6.230E-12	9.160E-10
Ce-144	8	3.790E+04	2.456E+07	2.773E-15	2.920E-10	1.010E-07
Pr-143	9	4.430E+04	1.172E+06	2.100E-17	1.680E-18	2.190E-09
Nd-147	9	1.850E+04	9.487E+05	6.190E-15	1.820E-11	1.850E-09
Np-239	8	5.370E+05	2.035E+05	7.690E-15	7.620E-12	6.780E-10
Pu-238	8	1.530E+02	2.769E+09	4.880E-18	3.860E-10	7.790E-05
Pu-239	8	1.340E+01	7.594E+11	4.240E-18	3.750E-10	8.330E-05
Pu-240	8	2.510E+01	2.063E+11	4.750E-18	3.760E-10	8.330E-05
Pu-241	8	5.410E+03	4.544E+08	7.250E-20	9.150E-12	1.340E-06
Am-241	9	9.060E+00	1.364E+10	8.180E-16	1.600E-09	1.200E-04
Cm-242	9	2.300E+03	1.407E+07	5.690E-18	9.410E-10	4.670E-06
Cm-244	9	1.520E+02	5.715E+08	4.910E-18	1.010E-09	6.700E-05

Nuclide	Daughter	Fraction	Daughter	Fraction	Daughter	Fraction
Kr-85m	Kr-85	0.21	none	0.00	none	0.00
Kr-87	Rb-87	1.00	none	0.00	none	0.00
Kr-88	Rb-88	1.00	none	0.00	none	0.00
Sr-90	Y-90	1.00	none	0.00	none	0.00
Sr-91	Y-91m	0.58	Y-91	0.42	none	0.00
Sr-92	Y-92	1.00	none	0.00	none	0.00
Y-93	Zr-93	1.00	none	0.00	none	0.00
Zr-95	Nb-95m	0.01	Nb-95	0.99	none	0.00
Zr-97	Nb-97m	0.95	Nb-97	0.05	none	0.00
Mo-99	Tc-99m	0.88	Tc-99	0.12	none	0.00
Tc-99m	Tc-99	1.00	none	0.00	none	0.00
Ru-103	Rh-103m	1.00	none	0.00	none	0.00
Ru-105	Rh-105	1.00	none	0.00	none	0.00
Ru-106	Rh-106	1.00	none	0.00	none	0.00
Sb-127	Te-127m	0.18	Te-127	0.82	none	0.00
Sb-129	Te-129m	0.22	Te-129	0.77	none	0.00
Te-127m	Te-127	0.98	none	0.00	none	0.00
Te-129	I-129	1.00	none	0.00	none	0.00
Te-129m	Te-129	0.65	I-129	0.35	none	0.00
Te-131m	Te-131	0.22	I-131	0.78	none	0.00
Te-132	I-132	1.00	none	0.00	none	0.00
I-131	Xe-131m	0.01	none	0.00	none	0.00
I-133	Xe-133m	0.03	Xe-133	0.97	none	0.00
I-135	Xe-135m	0.15	Xe-135	0.85	none	0.00
Xe-135	Cs-135	1.00	none	0.00	none	0.00
Cs-137	Ba-137m	0.95	none	0.00	none	0.00
Ba-140	La-140	1.00	none	0.00	none	0.00
La-141	Ce-141	1.00	none	0.00	none	0.00
Ce-143	Pr-143	1.00	none	0.00	none	0.00
Ce-144	Pr-144m	0.02	Pr-144	0.98	none	0.00
Nd-147	Pm-147	1.00	none	0.00	none	0.00
Np-239	Pu-239	1.00	none	0.00	none	0.00
Pu-238	U-234	1.00	none	0.00	none	0.00
Pu-239	U-235	1.00	none	0.00	none	0.00
Pu-240	U-236	1.00	none	0.00	none	0.00
Pu-241	U-237	0.00	Am-241	1.00	none	0.00
Am-241	Np-237	1.00	none	0.00	none	0.00
Cm-242	Pu-238	1.00	none	0.00	none	0.00
Cm-244	Pu-240	1.00	none	0.00	none	0.00

Iodine fractions
- Aerosol = 9.5000E-01
- Elemental = 4.8500E-02
- Organic = 1.5000E-03

COMPARTMENT DATA

Compartment number 1: DW

Sprays: Aerosal Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01

1.5000E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	3.0000E+00
2.3000E+00	3.0000E+00
2.4000E+00	3.0000E+00
3.0000E+00	3.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Sprays: Elemental Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01
1.5000E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	0.0000E+00
2.3000E+00	0.0000E+00
2.4000E+00	0.0000E+00
3.0000E+00	0.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Compartment number 2: RB

Compartment number 3: Environment

Compartment number 4: CR

Compartment number 5: MSL "B" Volume 1

Compartment number 6: MSL "B" Volume 2

Compartment number 7: MSL "C" Volume 3

Compartment number 8: MSL "C" Volume 4

PATHWAY DATA

Pathway number 1: DW to RB

Convection Data

Time (hr)	Flow Rate (% / day)
0.0000E+00	1.5000E+00
2.4000E+01	7.5000E-01
7.2000E+02	0.0000E+00

Pathway number 2: RB toEnvironment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
3.3330E-01	0.0000E+00	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 3: Environment to CR Unfiltered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	4.0000E+02	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 4: Environment to CR Filtered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic

0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	1.0000E+03	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 5: CR to Environment - Exhaust

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	1.0000E+02	1.0000E+02	1.0000E+02
5.0000E-01	1.4000E+03	1.0000E+02	1.0000E+02	1.0000E+02
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 6: DW to MSL "B" Volume 1

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.0000E+00	4.7800E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.4000E+01	2.3900E-01	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 7: MSL "B" Volume 1 to MSL "B" Volume 2

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	9.9940E+01	4.9200E+00	0.0000E+00
2.0000E+00	4.7800E-01	9.9940E+01	4.9200E+00	0.0000E+00
8.0000E+00	4.7800E-01	9.9940E+01	6.5700E+00	0.0000E+00
2.4000E+01	2.3900E-01	9.9940E+01	1.1440E+01	0.0000E+00
4.8000E+01	2.3900E-01	9.9940E+01	2.3680E+01	0.0000E+00
7.2000E+01	2.3900E-01	9.9940E+01	4.1310E+01	0.0000E+00
9.6000E+01	2.3900E-01	9.9940E+01	6.0070E+01	0.0000E+00
2.4000E+02	2.3900E-01	9.9940E+01	9.5290E+01	0.0000E+00
4.8000E+02	2.3900E-01	9.9940E+01	9.6640E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 8: MSL "B" Volume 2 to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.2500E+00	0.0000E+00	8.6800E+00	0.0000E+00
2.0000E+00	1.3030E+00	0.0000E+00	8.6800E+00	0.0000E+00
8.0000E+00	1.3030E+00	0.0000E+00	1.1520E+01	0.0000E+00
2.4000E+01	6.5200E-01	0.0000E+00	1.9630E+01	0.0000E+00
4.8000E+01	6.5200E-01	0.0000E+00	3.8400E+01	0.0000E+00
7.2000E+01	6.5200E-01	0.0000E+00	6.1300E+01	0.0000E+00
9.6000E+01	6.5200E-01	0.0000E+00	8.0030E+01	0.0000E+00
2.4000E+02	6.5200E-01	0.0000E+00	9.7710E+01	0.0000E+00
4.8000E+02	6.5200E-01	0.0000E+00	9.7880E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 9: DW to MSL "C" Volume 3

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.0000E+00	4.7800E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.4000E+01	2.3900E-01	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 10: MSL "C" Volume 3 to MSL "C" Volume 4

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	9.9910E+01	3.6500E+00	0.0000E+00
2.0000E+00	4.7800E-01	9.9910E+01	3.6500E+00	0.0000E+00
8.0000E+00	4.7800E-01	9.9910E+01	4.8900E+00	0.0000E+00
2.4000E+01	2.3900E-01	9.9910E+01	8.5700E+00	0.0000E+00
4.8000E+01	2.3900E-01	9.9910E+01	1.8070E+01	0.0000E+00
7.2000E+01	2.3900E-01	9.9910E+01	3.2550E+01	0.0000E+00
9.6000E+01	2.3900E-01	9.9910E+01	4.9360E+01	0.0000E+00
2.4000E+02	2.3900E-01	9.9910E+01	9.1170E+01	0.0000E+00
4.8000E+02	2.3900E-01	9.9910E+01	9.3910E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 11: MSL "C" Volume 4 to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.2500E+00	0.0000E+00	8.9700E+00	0.0000E+00
2.0000E+00	1.3030E+00	0.0000E+00	8.9700E+00	0.0000E+00
8.0000E+00	1.3030E+00	0.0000E+00	1.1900E+01	0.0000E+00
2.4000E+01	6.5200E-01	0.0000E+00	2.0250E+01	0.0000E+00
4.8000E+01	6.5200E-01	0.0000E+00	3.9440E+01	0.0000E+00
7.2000E+01	6.5200E-01	0.0000E+00	6.2550E+01	0.0000E+00
9.6000E+01	6.5200E-01	0.0000E+00	8.1060E+01	0.0000E+00
2.4000E+02	6.5200E-01	0.0000E+00	9.7730E+01	0.0000E+00
4.8000E+02	6.5200E-01	0.0000E+00	9.7890E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

LOCATION DATA

Location EAB is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	1.7900E-04
1.0000E+00	1.7900E-04
2.0000E+00	1.7900E-04
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
7.2000E+02	3.5000E-04

Location LPZ is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	2.0000E-05
4.0000E+00	2.0000E-05
8.0000E+00	1.3400E-05
2.4000E+01	5.5900E-06
9.6000E+01	1.6000E-06
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
8.0000E+00	1.8000E-04
2.4000E+01	2.3000E-04
7.2000E+02	2.3000E-04

Location CR is in compartment 4

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	4.5200E-03
3.3330E-01	4.5200E-03
2.0000E+00	3.3300E-03
8.0000E+00	1.1900E-03
2.4000E+01	8.2700E-04

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        9.6000E+01          6.4000E-04
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)          Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.5000E-04
        7.2000E+02                 3.5000E-04

      Location Occupancy Factor Data
       Time (hr)          Occupancy Factor
        0.0000E+00            1.0000E+00
        2.4000E+01            6.0000E-01
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time             Time step
       0.0000E+00       1.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       5.0000E-01
       8.0000E+00       1.0000E+00
       2.4000E+01       2.0000E+00
       9.6000E+01       5.0000E+00
       7.2000E+02       0.0000E+00
```

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######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 10:58:06
######################################################################




     ####   #    #  #####  #####   #    #  #####
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     ####    ####     #    #        ####     #


######################################################################
           Dose, Detailed model and Detailed Inventory Output
######################################################################

EAB Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0539E-05  4.4832E-04  2.4797E-05
Accumulated dose (rem)  1.0539E-05  4.4832E-04  2.4797E-05

LPZ Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1776E-06  5.0091E-05  2.7706E-06
Accumulated dose (rem)  1.1776E-06  5.0091E-05  2.7706E-06

CR Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.7313E-07  8.8969E-04  2.9165E-05
Accumulated dose (rem)  8.7313E-07  8.8969E-04  2.9165E-05

DW Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5339E+04  1.1556E-01  8.1875E+23  1.0363E+18
Kr-85m                 7.0976E+05  8.6246E-05  6.1104E+20  1.6510E+19
Kr-87                  1.2507E+06  4.4153E-05  3.0563E+20  3.0427E+19
Kr-88                  1.8753E+06  1.4955E-04  1.0235E+21  4.4068E+19
Rb-86                  5.6860E+03  6.9881E-05  4.8934E+20  1.2999E+17
I-131                  2.3333E+06  1.8821E-02  8.6521E+22  5.3353E+19
I-132                  3.2389E+06  3.1378E-04  1.4315E+21  7.5375E+19
I-133                  4.8078E+06  4.2441E-03  1.9217E+22  1.1030E+20
I-134                  4.2584E+06  1.5963E-04  7.1740E+20  1.0662E+20
I-135                  4.4365E+06  1.2633E-03  5.6353E+21  1.0261E+20
Xe-133                 4.8525E+06  2.5924E-02  1.1738E+23  1.1091E+20
Xe-135                 2.0375E+06  7.9785E-04  3.5591E+21  4.6188E+19
Cs-134                 6.2233E+05  4.8100E-01  2.1617E+24  1.4225E+19
Cs-136                 1.8605E+05  2.5385E-03  1.1240E+22  4.2535E+18
Cs-137                 5.0080E+05  5.7575E+00  2.5308E+25  1.1447E+19

DW Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4163E+23  0.0000E+00
Elemental I (atoms)    5.5058E+21  0.0000E+00
Organic I (atoms)      1.7028E+20  0.0000E+00
Aerosols (kg)          6.2647E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.7352E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.8338E-04
Total I (Ci)                                   1.9075E+07

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
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Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.7227E+00  1.2038E-05  8.5284E+19  7.3026E+13
Kr-85m                 7.3931E+01  8.9837E-09  6.3648E+16  1.1583E+15
Kr-87                  1.3027E+02  4.5991E-09  3.1835E+16  2.1109E+15
Kr-88                  1.9534E+02  1.5578E-08  1.0661E+17  3.0839E+15
Rb-86                  5.9228E-01  7.2790E-09  5.0971E+16  9.1594E+12
I-131                  2.4304E+02  1.9604E-06  9.0121E+18  3.7592E+15
I-132                  3.3187E+02  3.2151E-08  1.4668E+17  5.2232E+15
I-133                  5.0080E+02  4.4208E-07  2.0017E+18  7.7656E+15
I-134                  4.4357E+02  1.6628E-08  7.4727E+16  7.3438E+15
I-135                  4.6212E+02  1.3159E-07  5.8699E+17  7.2095E+15
Xe-133                 5.0546E+02  2.7004E-06  1.2227E+19  7.8157E+15
Xe-135                 2.1223E+02  8.3107E-08  3.7073E+17  3.2610E+15
Cs-134                 6.4824E+01  5.0103E-05  2.2517E+20  1.0024E+15
Cs-136                 1.9379E+01  2.6442E-07  1.1708E+18  2.9971E+14
Cs-137                 5.2165E+01  5.9972E-04  2.6362E+21  8.0662E+14

RB Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.8084E+19  0.0000E+00
Elemental I (atoms)    5.7338E+17  0.0000E+00
Organic I (atoms)      1.7733E+16  0.0000E+00
Aerosols (kg)          6.5255E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.0198E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2960E-08
Total I (Ci)                                    1.9814E+03

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  8.5071E-06  2.1683E-11  1.5362E+14  8.2563E+07
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Kr-85m	1.3317E-04	1.6182E-14	1.1465E+11	1.3040E+09
Kr-87	2.3466E-04	8.2845E-15	5.7345E+10	2.3506E+09
Kr-88	3.5187E-04	2.8061E-14	1.9203E+11	3.4633E+09
Rb-86	8.0566E-10	9.9015E-18	6.9335E+07	7.8198E+03
I-131	1.9503E-05	1.5731E-13	7.2318E+11	1.8932E+08
I-132	2.6292E-05	2.5472E-15	1.1621E+10	2.5880E+08
I-133	4.0188E-05	3.5476E-14	1.6063E+11	3.9077E+08
I-134	3.5596E-05	1.3343E-15	5.9967E+09	3.6175E+08
I-135	3.7084E-05	1.0560E-14	4.7105E+10	3.6208E+08
Xe-133	9.0987E-04	4.8609E-12	2.2010E+13	8.8316E+09
Xe-135	3.7532E-04	1.4697E-13	6.5561E+11	3.6407E+09
Cs-134	8.8179E-08	6.8154E-14	3.0629E+11	8.5580E+05
Cs-136	2.6361E-08	3.5968E-16	1.5927E+09	2.5588E+05
Cs-137	7.0959E-08	8.1579E-13	3.5860E+12	6.8868E+05

CR Transport Group Inventory:

Time (h) = 0.3333	Atmosphere	Sump	
Noble gases (atoms)	1.7665E+14	0.0000E+00	
Elemental I (atoms)	9.0132E+11	0.0000E+00	
Organic I (atoms)	3.1938E+10	0.0000E+00	
Aerosols (kg)	8.8765E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.6007E-15
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2198E-14
Total I (Ci)			1.5866E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9172E+14
Elemental I (atoms)	0.0000E+00	9.7969E+11
Organic I (atoms)	0.0000E+00	3.4715E+10
Aerosols (kg)	0.0000E+00	9.6328E-13

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	1.5049E+13	0.0000E+00
Elemental I (atoms)	7.6882E+10	0.0000E+00
Organic I (atoms)	2.7242E+09	0.0000E+00
Aerosols (kg)	7.5616E-14	0.0000E+00

EAB Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.9493E-05	1.6406E-03	9.1622E-05
Accumulated dose (rem)	5.0032E-05	2.0889E-03	1.1642E-04

LPZ Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.4126E-06	1.8331E-04	1.0237E-05
Accumulated dose (rem)	5.5901E-06	2.3340E-04	1.3008E-05

CR Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.1864E-06	5.3906E-03	1.7646E-04
Accumulated dose (rem)	6.0596E-06	6.2803E-03	2.0563E-04

DW Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	6.8009E+04	1.7334E-01	1.2281E+24	2.3096E+18
Kr-85m	1.0375E+06	1.2607E-04	8.9321E+20	3.6171E+19
Kr-87	1.7130E+06	6.0476E-05	4.1862E+20	6.3902E+19
Kr-88	2.7008E+06	2.1539E-04	1.4740E+21	9.5608E+19
Rb-86	6.0304E+02	7.4113E-06	5.1898E+19	1.6215E+17
I-131	2.5229E+05	2.0350E-03	9.3551E+21	6.6630E+19
I-132	3.6181E+05	3.5051E-05	1.5991E+20	9.3943E+19
I-133	5.1719E+05	4.5656E-04	2.0673E+21	1.3762E+20
I-134	4.0377E+05	1.5135E-05	6.8021E+19	1.2989E+20
I-135	4.7159E+05	1.3429E-04	5.9903E+20	1.2772E+20
Xe-133	7.2742E+06	3.8862E-02	1.7596E+23	2.4715E+20
Xe-135	3.0409E+06	1.1908E-03	5.3118E+21	1.0329E+20
Cs-134	6.6019E+04	5.1026E-02	2.2932E+23	1.7745E+19
Cs-136	1.9729E+04	2.6919E-04	1.1920E+21	5.3059E+18
Cs-137	5.3127E+04	6.1078E-01	2.6848E+24	1.4280E+19

DW Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	1.4122E+24	0.0000E+00	
Elemental I (atoms)	5.8262E+20	7.6685E+21	
Organic I (atoms)	2.5457E+20	0.0000E+00	
Aerosols (kg)	6.6457E-01	8.7318E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		8.3482E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.0587E-04
Total I (Ci)			2.0066E+06

DW to RB Transport Group Inventory:

Time (h) = 0.5000	Leakage Transport
Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1654E+20
Elemental I (atoms)	0.0000E+00	3.8790E+17
Organic I (atoms)	0.0000E+00	2.1078E+16
Aerosols (kg)	0.0000E+00	4.4060E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1654E+20
Elemental I (atoms)	0.0000E+00	3.8790E+17
Organic I (atoms)	0.0000E+00	2.1078E+16
Aerosols (kg)	0.0000E+00	4.4060E-04

RB Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	1.0628E+01	2.7088E-05	1.9191E+20	2.4298E+14
Kr-85m	1.6213E+02	1.9701E-08	1.3958E+17	3.7805E+15
Kr-87	2.6769E+02	9.4505E-09	6.5416E+16	6.5659E+15
Kr-88	4.2204E+02	3.3658E-08	2.3033E+17	9.9543E+15
Rb-86	7.5723E-01	9.3063E-09	6.5167E+16	2.4965E+13
I-131	3.1098E+02	2.5084E-06	1.1531E+19	1.0247E+16
I-132	4.0740E+02	3.9468E-08	1.8006E+17	1.3901E+16
I-133	6.3761E+02	5.6286E-07	2.5486E+18	2.1101E+16
I-134	4.9777E+02	1.8660E-08	8.3858E+16	1.8420E+16
I-135	5.8139E+02	1.6555E-07	7.3850E+17	1.9440E+16
Xe-133	1.1370E+03	6.0745E-06	2.7505E+19	2.6003E+16
Xe-135	4.7868E+02	1.8744E-07	8.3615E+17	1.0914E+16
Cs-134	8.2898E+01	6.4072E-05	2.8795E+20	2.7325E+15
Cs-136	2.4774E+01	3.3802E-07	1.4968E+18	8.1686E+14
Cs-137	6.6710E+01	7.6695E-04	3.3713E+21	2.1989E+15

RB Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	2.2069E+20	0.0000E+00	
Elemental I (atoms)	7.3066E+17	0.0000E+00	
Organic I (atoms)	3.9769E+16	0.0000E+00	
Aerosols (kg)	8.3449E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3019E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6479E-08
Total I (Ci)			2.4352E+03

DW to RB Transport Group Inventory:

Time (h) = 0.5000 Leakage Transport

Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

RB toEnvironment Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	4.0823E-05	1.0405E-10	7.3719E+14	5.8598E+08
Kr-85m	6.2278E-04	7.5677E-14	5.3616E+11	9.0597E+09
Kr-87	1.0283E-03	3.6301E-14	2.5128E+11	1.5479E+10
Kr-88	1.6212E-03	1.2929E-13	8.8476E+11	2.3767E+10
Rb-86	3.5862E-09	4.4074E-17	3.0863E+08	5.3931E+04
I-131	8.7014E-05	7.0187E-13	3.2265E+12	1.3066E+09
I-132	1.1257E-04	1.0906E-14	4.9755E+10	1.7284E+09
I-133	1.7841E-04	1.5749E-13	7.1312E+11	2.6860E+09
I-134	1.3928E-04	5.2211E-15	2.3464E+10	2.2442E+09
I-135	1.6268E-04	4.6323E-14	2.0664E+11	2.4646E+09
Xe-133	4.3645E-03	2.3317E-11	1.0558E+14	6.2663E+10
Xe-135	1.8042E-03	7.0651E-13	3.1516E+12	2.5888E+10
Cs-134	3.9261E-07	3.0344E-13	1.3637E+12	5.9034E+06
Cs-136	1.1733E-07	1.6009E-15	7.0887E+09	1.7645E+06
Cs-137	3.1594E-07	3.6322E-12	1.5966E+13	4.7506E+06

CR Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	8.4759E+14	0.0000E+00	
Elemental I (atoms)	3.9990E+12	0.0000E+00	
Organic I (atoms)	1.5272E+11	0.0000E+00	
Aerosols (kg)	3.9521E-12	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.2738E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.4081E-14
Total I (Ci)			6.7996E-04

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5700E+14
Elemental I (atoms)	0.0000E+00	4.5513E+12
Organic I (atoms)	0.0000E+00	1.7281E+11
Aerosols (kg)	0.0000E+00	4.4872E-12

Environment to CR Filtered Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00

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Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   0.5000      Filtered   Transported
Noble gases (atoms)    1.0928E+14  0.0000E+00
Elemental I (atoms)    5.4237E+11  0.0000E+00
Organic I (atoms)      1.9727E+10  0.0000E+00
Aerosols (kg)          5.3499E-13  0.0000E+00

EAB Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7565E-04  1.5340E-02  1.2624E-03
Accumulated dose (rem)  8.2568E-04  1.7429E-02  1.3789E-03

LPZ Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6665E-05  1.7140E-03  1.4105E-04
Accumulated dose (rem)  9.2255E-05  1.9474E-03  1.5406E-04

CR Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1241E-04  4.1590E-02  1.4319E-03
Accumulated dose (rem)  1.1847E-04  4.7871E-02  1.6375E-03

DW Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg          Atoms       Decay
Co-58                  2.1963E+01  6.9069E-07  7.1715E+18  1.3792E+15
Co-60                  2.6297E+01  2.3263E-05  2.3349E+20  1.6512E+15
Kr-85                  4.9869E+05  1.2711E+00  9.0055E+24  2.1469E+19
Kr-85m                 7.0415E+06  8.5564E-04  6.0621E+21  3.1473E+20
Kr-87                  9.5646E+06  3.3767E-04  2.3373E+21  4.7198E+20
Kr-88                  1.7529E+07  1.3979E-03  9.5665E+21  8.0098E+20
Rb-86                  7.5756E+02  9.3104E-06  6.5196E+19  2.1203E+17
Sr-89                  3.7226E+04  1.2813E-03  8.6701E+21  2.3378E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  3.0751E+17
Sr-91                  4.3069E+04  1.1881E-05  7.8626E+19  2.7517E+18
Sr-92                  3.7386E+04  2.9744E-06  1.9470E+19  2.4958E+18
Y-90                   5.2590E+01  9.6662E-08  6.4679E+17  3.2617E+15
Y-91                   4.7268E+02  1.9274E-05  1.2755E+20  2.9677E+16
Y-92                   7.5766E+02  7.8739E-08  5.1541E+17  4.2881E+16
Y-93                   4.9803E+02  1.4928E-07  9.6662E+17  3.1787E+16
Zr-95                  5.7684E+02  2.6851E-05  1.7021E+20  3.6225E+16
Zr-97                  5.3625E+02  2.8051E-07  1.7415E+18  3.4002E+16
Nb-95                  5.7824E+02  1.4788E-05  9.3740E+19  3.6309E+16
Mo-99                  7.3090E+03  1.5239E-05  9.2700E+19  4.6010E+17
Tc-99m                 6.5180E+03  1.2396E-06  7.5403E+18  4.0917E+17
Ru-103                 6.4043E+03  1.9844E-04  1.1602E+21  4.0221E+17
Ru-105                 3.9092E+03  5.8154E-07  3.3354E+18  2.5477E+17
Ru-106                 2.7875E+03  8.3320E-04  4.7337E+21  1.7504E+17
Rh-105                 4.2812E+03  5.0722E-06  2.9091E+19  2.6889E+17
Sb-127                 7.3024E+03  2.7345E-05  1.2966E+20  4.5936E+17
Sb-129                 1.9363E+04  3.4433E-06  1.6075E+19  1.2633E+18
Te-127                 7.2686E+03  2.7542E-06  1.3060E+19  4.5630E+17
Te-127m                1.2473E+03  1.3224E-04  6.2704E+20  7.8323E+16
Te-129                 2.0176E+04  9.6343E-07  4.4976E+18  1.2847E+18
Te-129m                4.1102E+03  1.3644E-04  6.3694E+20  2.5809E+17
Te-131m                1.5109E+04  1.8948E-05  8.7103E+19  9.5394E+17
Te-132                 1.0996E+05  3.6219E-04  1.6524E+21  6.9190E+18
I-131                  4.0160E+05  3.2394E-03  1.4892E+22  9.2575E+19
I-132                  5.7885E+05  5.6078E-05  2.5584E+20  1.3141E+20
I-133                  8.1089E+05  7.1582E-04  3.2412E+21  1.9039E+20
I-134                  4.3350E+05  1.6250E-05  7.3030E+19  1.6406E+20
I-135                  7.1342E+05  2.0315E-04  9.0620E+20  1.7498E+20
Xe-133                 5.3281E+07  2.8465E-01  1.2889E+24  2.2952E+21
Xe-135                 2.2407E+07  8.7742E-03  3.9140E+22  9.6498E+20
Cs-134                 8.2998E+04  6.4149E-02  2.8829E+23  2.3208E+19
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Cs-136	2.4777E+04	3.3806E-04	1.4969E+21	6.9376E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	1.8676E+19
Ba-139	3.5806E+04	2.1890E-06	9.4838E+18	2.5389E+18
Ba-140	5.7350E+04	7.8337E-04	3.3697E+21	3.6031E+18
La-140	6.3959E+02	1.1507E-06	4.9498E+18	3.9410E+16
La-141	4.5294E+02	8.0091E-08	3.4207E+17	2.9664E+16
La-142	3.3732E+02	2.3564E-08	9.9933E+16	2.3607E+16
Ce-141	1.3564E+03	4.7604E-05	2.0332E+20	8.5175E+16
Ce-143	1.2833E+03	1.9324E-06	8.1380E+18	8.0984E+16
Ce-144	1.0891E+03	3.4147E-04	1.4281E+21	6.8391E+16
Pr-143	5.0935E+02	7.5641E-06	3.1854E+19	3.1982E+16
Nd-147	2.1212E+02	2.6220E-06	1.0742E+19	1.3328E+16
Np-239	1.5245E+04	6.5714E-05	1.6558E+20	9.6008E+17
Pu-238	4.3973E+00	2.5685E-04	6.4992E+20	2.7612E+14
Pu-239	3.8516E-01	6.1967E-03	1.5614E+22	2.4185E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	4.5297E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	9.7632E+15
Am-241	1.0417E-01	3.0350E-05	7.5838E+19	6.5407E+12
Cm-242	2.6436E+01	7.9764E-06	1.9849E+19	1.6601E+15
Cm-244	1.7474E+00	2.1599E-05	5.3307E+19	1.0972E+14

DW Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.0351E+25	0.0000E+00	
Elemental I (atoms)	9.0808E+20	2.1014E+22	
Organic I (atoms)	6.7270E+20	0.0000E+00	
Aerosols (kg)	8.8772E-01	2.1825E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3210E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6621E-04
Total I (Ci)			2.9383E+06

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	6.4058E-03	2.0145E-10	2.0917E+15	2.0440E+11
Co-60	7.6699E-03	6.7852E-09	6.8102E+16	2.4472E+11
Kr-85	9.9182E+01	2.5280E-04	1.7911E+21	3.2119E+15
Kr-85m	1.4004E+03	1.7017E-07	1.2057E+18	4.6801E+16
Kr-87	1.9023E+03	6.7157E-08	4.6486E+17	6.9051E+16
Kr-88	3.4862E+03	2.7803E-07	1.9026E+18	1.1868E+17
Rb-86	9.9015E-01	1.2169E-08	8.5212E+16	8.3217E+13
Sr-89	1.0857E+01	3.7372E-07	2.5288E+18	3.4646E+14
Sr-90	1.4284E+00	1.0471E-05	7.0067E+19	4.5575E+13
Sr-91	1.2562E+01	3.4653E-09	2.2933E+16	4.0549E+14
Sr-92	1.0904E+01	8.6753E-10	5.6787E+15	3.6249E+14
Y-90	1.8883E-02	3.4707E-11	2.3223E+14	5.5968E+11

Y-91	1.3847E-01	5.6465E-09	3.7367E+16	4.4113E+12
Y-92	7.1730E-01	7.4546E-11	4.8796E+14	1.7291E+13
Y-93	1.4526E-01	4.3539E-11	2.8193E+14	4.6857E+12
Zr-95	1.6824E-01	7.8316E-09	4.9645E+16	5.3686E+12
Zr-97	1.5641E-01	8.1817E-11	5.0795E+14	5.0231E+12
Nb-95	1.6865E-01	4.3131E-09	2.7341E+16	5.3812E+12
Mo-99	2.1318E+00	4.4448E-09	2.7038E+16	6.8133E+13
Tc-99m	1.9011E+00	3.6154E-10	2.1993E+15	6.0636E+13
Ru-103	1.8679E+00	5.7877E-08	3.3839E+17	5.9607E+13
Ru-105	1.1402E+00	1.6962E-10	9.7282E+14	3.7298E+13
Ru-106	8.1304E-01	2.4302E-07	1.3807E+18	2.5942E+13
Rh-105	1.2487E+00	1.4794E-09	8.4849E+15	3.9847E+13
Sb-127	2.1299E+00	7.9755E-09	3.7819E+16	6.8039E+13
Sb-129	5.6476E+00	1.0043E-09	4.6884E+15	1.8488E+14
Te-127	2.1200E+00	8.0331E-10	3.8092E+15	6.7624E+13
Te-127m	3.6381E-01	3.8569E-08	1.8289E+17	1.1608E+13
Te-129	5.8848E+00	2.8100E-10	1.3118E+15	1.8941E+14
Te-129m	1.1988E+00	3.9795E-08	1.8577E+17	3.8250E+13
Te-131m	4.4068E+00	5.5264E-09	2.5405E+16	1.4112E+14
Te-132	3.2071E+01	1.0564E-07	4.8194E+17	1.0247E+15
I-131	4.3161E+02	3.4815E-06	1.6004E+19	3.4959E+16
I-132	5.1533E+02	4.9925E-08	2.2777E+17	4.4666E+16
I-133	8.7180E+02	7.6959E-07	3.4846E+18	7.1369E+16
I-134	4.6606E+02	1.7471E-08	7.8515E+16	5.0764E+16
I-135	7.6700E+02	2.1840E-07	9.7426E+17	6.4424E+16
Xe-133	1.0592E+04	5.6588E-05	2.5622E+20	3.4327E+17
Xe-135	4.4075E+03	1.7259E-06	7.6990E+18	1.4348E+17
Cs-134	1.0848E+02	8.3844E-05	3.7681E+20	9.1123E+15
Cs-136	3.2384E+01	4.4185E-07	1.9565E+18	2.7223E+15
Cs-137	8.7298E+01	1.0036E-03	4.4117E+21	7.3329E+15
Ba-139	1.0443E+01	6.3846E-10	2.7661E+15	3.6149E+14
Ba-140	1.6727E+01	2.2848E-07	9.8283E+17	5.3390E+14
La-140	2.5245E-01	4.5419E-10	1.9537E+15	7.2597E+12
La-141	1.3211E-01	2.3360E-11	9.9771E+13	4.3357E+12
La-142	9.8385E-02	6.8728E-12	2.9147E+13	3.3757E+12
Ce-141	3.9557E-01	1.3883E-08	5.9294E+16	1.2622E+13
Ce-143	3.7430E-01	5.6363E-10	2.3736E+15	1.1983E+13
Ce-144	3.1766E-01	9.9597E-08	4.1652E+17	1.0136E+13
Pr-143	1.4867E-01	2.2078E-09	9.2979E+15	4.7423E+12
Nd-147	6.1867E-02	7.6475E-10	3.1330E+15	1.9748E+12
Np-239	4.4465E+00	1.9167E-08	4.8295E+16	1.4215E+14
Pu-238	1.2825E-03	7.4916E-08	1.8956E+17	4.0922E+10
Pu-239	1.1234E-04	1.8074E-06	4.5541E+18	3.5844E+09
Pu-240	2.1040E-04	9.2335E-07	2.3169E+18	6.7133E+09
Pu-241	4.5349E-02	4.4023E-07	1.1000E+18	1.4470E+12
Am-241	3.0383E-05	8.8524E-09	2.2120E+16	9.6939E+08
Cm-242	7.7105E-03	2.3264E-09	5.7893E+15	2.4603E+11
Cm-244	5.0965E-04	6.2996E-09	1.5548E+16	1.6262E+10

RB Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	2.0585E+21	0.0000E+00	
Elemental I (atoms)	9.9991E+17	0.0000E+00	
Organic I (atoms)	1.8384E+17	0.0000E+00	
Aerosols (kg)	1.1072E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7954E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2499E-08
Total I (Ci)			3.0518E+03

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00

Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	6.8009E-12	2.1388E-19	2.2207E+06	1.1482E+02
Co-60	8.1429E-12	7.2037E-18	7.2303E+07	1.3748E+02
Kr-85	5.5766E-04	1.4214E-09	1.0070E+16	1.4357E+10
Kr-85m	7.8741E-03	9.5681E-13	6.7789E+12	2.0816E+11
Kr-87	1.0696E-02	3.7759E-13	2.6137E+12	3.0301E+11
Kr-88	1.9602E-02	1.5632E-12	1.0698E+13	5.2629E+11
Rb-86	7.2979E-09	8.9691E-17	6.2806E+08	3.9430E+05
Sr-89	1.1527E-08	3.9678E-16	2.6848E+09	1.9462E+05
Sr-90	1.5165E-09	1.1117E-14	7.4389E+10	2.5603E+04
Sr-91	1.3337E-08	3.6791E-18	2.4347E+07	2.2678E+05
Sr-92	1.1577E-08	9.2104E-19	6.0290E+06	2.0045E+05
Y-90	2.1876E-11	4.0209E-20	2.6905E+05	3.4775E+02
Y-91	1.4733E-10	6.0076E-18	3.9757E+07	2.4838E+03
Y-92	1.0193E-09	1.0593E-19	6.9337E+05	1.4417E+04
Y-93	1.5422E-10	4.6225E-20	2.9932E+05	2.6213E+03
Zr-95	1.7862E-10	8.3146E-18	5.2707E+07	3.0158E+03
Zr-97	1.6605E-10	8.6864E-20	5.3928E+05	2.8148E+03
Nb-95	1.7906E-10	4.5791E-18	2.9027E+07	3.0230E+03
Mo-99	2.2633E-09	4.7190E-18	2.8705E+07	3.8250E+04
Tc-99m	2.0183E-09	3.8384E-19	2.3349E+06	3.4061E+04
Ru-103	1.9831E-09	6.1447E-17	3.5926E+08	3.3484E+04
Ru-105	1.2105E-09	1.8008E-19	1.0328E+06	2.0753E+04
Ru-106	8.6319E-10	2.5801E-16	1.4658E+09	1.4573E+04
Rh-105	1.3257E-09	1.5707E-18	9.0083E+06	2.2383E+04
Sb-127	2.2613E-09	8.4675E-18	4.0151E+07	3.8205E+04
Sb-129	5.9960E-09	1.0663E-18	4.9776E+06	1.0284E+05
Te-127	2.2508E-09	8.5286E-19	4.0441E+06	3.7988E+04
Te-127m	3.8625E-10	4.0948E-17	1.9417E+08	6.5210E+03
Te-129	6.2478E-09	2.9833E-19	1.3927E+06	1.0596E+05
Te-129m	1.2728E-09	4.2249E-17	1.9723E+08	2.1488E+04
Te-131m	4.6786E-09	5.8673E-18	2.6972E+07	7.9167E+04
Te-132	3.4049E-08	1.1215E-16	5.1167E+08	5.7535E+05
I-131	1.8340E-04	1.4793E-12	6.8005E+12	9.6851E+09
I-132	2.0734E-04	2.0087E-14	9.1641E+10	1.1765E+10
I-133	3.7047E-04	3.2704E-13	1.4808E+12	1.9721E+10
I-134	1.9805E-04	7.4242E-15	3.3365E+10	1.3052E+10
I-135	3.2594E-04	9.2811E-14	4.1401E+11	1.7689E+10
Xe-133	5.9516E-02	3.1796E-10	1.4397E+15	1.5332E+12
Xe-135	2.4362E-02	9.5398E-12	4.2555E+13	6.3007E+11
Cs-134	7.9955E-07	6.1797E-13	2.7773E+12	4.3182E+07
Cs-136	2.3868E-07	3.2567E-15	1.4421E+10	1.2898E+07
Cs-137	6.4343E-07	7.3973E-12	3.2516E+13	3.4750E+07
Ba-139	1.1087E-08	6.7784E-19	2.9367E+06	1.9679E+05
Ba-140	1.7759E-08	2.4258E-16	1.0435E+09	2.9989E+05
La-140	3.0202E-10	5.4336E-19	2.3373E+06	4.6982E+03
La-141	1.4026E-10	2.4801E-20	1.0592E+05	2.4094E+03
La-142	1.0445E-10	7.2967E-21	3.0945E+04	1.8440E+03
Ce-141	4.1995E-10	1.4739E-17	6.2949E+07	7.0903E+03
Ce-143	3.9738E-10	5.9840E-19	2.5200E+06	6.7228E+03
Ce-144	3.3726E-10	1.0574E-16	4.4221E+08	5.6940E+03
Pr-143	1.5790E-10	2.3449E-18	9.8750E+06	2.6651E+03
Nd-147	6.5684E-11	8.1192E-19	3.3262E+06	1.1092E+03
Np-239	4.7208E-09	2.0349E-17	5.1274E+07	7.9797E+04
Pu-238	1.3616E-12	7.9537E-17	2.0125E+08	2.2989E+01
Pu-239	1.1927E-13	1.9189E-15	4.8350E+09	2.0136E+00
Pu-240	2.2338E-13	9.8030E-16	2.4598E+09	3.7713E+00
Pu-241	4.8146E-11	4.6738E-16	1.1679E+09	8.1285E+02
Am-241	3.2257E-14	9.3986E-18	2.3485E+07	5.4459E-01
Cm-242	8.1861E-12	2.4699E-18	6.1464E+06	1.3821E+02
Cm-244	5.4109E-13	6.6882E-18	1.6507E+07	9.1352E+00

CR Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump
Noble gases (atoms)	1.1573E+16	0.0000E+00
Elemental I (atoms)	8.1284E+12	0.0000E+00

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Organic I (atoms)      5.5416E+11  0.0000E+00
Aerosols (kg)          8.0646E-12  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         8.9487E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.1202E-13
Total I (Ci)                                   1.2852E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.5192E+15
Elemental I (atoms)    0.0000E+00  1.0629E+13
Organic I (atoms)      0.0000E+00  6.5944E+11
Aerosols (kg)          0.0000E+00  1.0478E-11

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.9056E+15
Elemental I (atoms)    1.4740E+13  4.5586E+11
Organic I (atoms)      1.1801E+12  3.6497E+10
Aerosols (kg)          1.4528E-11  4.4933E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    1.8490E+15  0.0000E+00
Elemental I (atoms)    2.8894E+12  0.0000E+00
Organic I (atoms)      1.3850E+11  0.0000E+00
Aerosols (kg)          2.8626E-12  0.0000E+00

EAB Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.5584E-03  3.5186E-02  5.6741E-03
Accumulated dose (rem)  5.3841E-03  5.2615E-02  7.0530E-03

LPZ Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.0932E-04  3.9314E-03  6.3398E-04
Accumulated dose (rem)  6.0158E-04  5.8788E-03  7.8804E-04

CR Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.8684E-04  9.4331E-02  3.8759E-03
Accumulated dose (rem)  1.0053E-03  1.4220E-01  5.5134E-03

DW Compartment Nuclide Inventory:

Time (h) =   1.5000       Ci           kg         Atoms      Decay
Co-58                  2.1958E+01  6.9055E-07  7.1700E+18  2.8418E+15
Co-60                  2.6296E+01  2.3263E-05  2.3349E+20  3.4026E+15
Kr-85                  9.2911E+05  2.3681E+00  1.6778E+25  7.1883E+19
Kr-85m                 1.2142E+07  1.4754E-03  1.0453E+22  9.9731E+20
Kr-87                  1.3569E+07  4.7902E-04  3.3158E+21  1.3078E+21
Kr-88                  2.8906E+07  2.3052E-03  1.5776E+22  2.4599E+21
Rb-86                  7.5697E+02  9.3032E-06  6.5145E+19  2.6247E+17
Sr-89                  3.7215E+04  1.2810E-03  8.6676E+21  4.8167E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  6.3367E+17
Sr-91                  4.1526E+04  1.1455E-05  7.5809E+19  5.5684E+18
Sr-92                  3.2898E+04  2.6173E-06  1.7132E+19  4.8331E+18
Y-90                   5.6082E+01  1.0308E-07  6.8974E+17  6.6431E+15
Y-91                   4.7317E+02  1.9294E-05  1.2768E+20  6.1135E+16
Y-92                   1.1457E+03  1.1907E-07  7.7940E+17  7.6140E+16
Y-93                   4.8123E+02  1.4424E-07  9.3402E+17  6.4393E+16
Zr-95                  5.7671E+02  2.6845E-05  1.7017E+20  7.4638E+16
Zr-97                  5.2537E+02  2.7482E-07  1.7062E+18  6.9353E+16
Nb-95                  5.7824E+02  1.4787E-05  9.3739E+19  7.4819E+16
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Mo-99	7.2707E+03	1.5159E-05	9.2214E+19	9.4560E+17
Tc-99m	6.5143E+03	1.2389E-06	7.5360E+18	8.4069E+17
Ru-103	6.4019E+03	1.9836E-04	1.1598E+21	8.2866E+17
Ru-105	3.6156E+03	5.3788E-07	3.0849E+18	5.0522E+17
Ru-106	2.7874E+03	8.3317E-04	4.7335E+21	3.6069E+17
Rh-105	4.2762E+03	5.0662E-06	2.9057E+19	5.5362E+17
Sb-127	7.2751E+03	2.7242E-05	1.2918E+20	9.4479E+17
Sb-129	1.7871E+04	3.1779E-06	1.4835E+19	2.5025E+18
Te-127	7.2671E+03	2.7536E-06	1.3057E+19	9.3857E+17
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	1.6139E+17
Te-129	1.9481E+04	9.3022E-07	4.3426E+18	2.5719E+18
Te-129m	4.1102E+03	1.3644E-04	6.3694E+20	5.3182E+17
Te-131m	1.4935E+04	1.8730E-05	8.6102E+19	1.9544E+18
Te-132	1.0947E+05	3.6058E-04	1.6451E+21	1.4226E+19
I-131	4.0967E+05	3.3045E-03	1.5191E+22	1.1965E+20
I-132	5.8016E+05	5.6206E-05	2.5642E+20	1.7014E+20
I-133	8.1478E+05	7.1925E-04	3.2567E+21	2.4465E+20
I-134	2.9827E+05	1.1181E-05	5.0248E+19	1.8820E+20
I-135	6.9164E+05	1.9695E-04	8.7854E+20	2.2187E+20
Xe-133	9.9114E+07	5.2951E-01	2.3976E+24	7.6776E+21
Xe-135	4.1427E+07	1.6222E-02	7.2365E+22	3.2270E+21
Cs-134	8.2996E+04	6.4148E-02	2.8829E+23	2.8736E+19
Cs-136	2.4749E+04	3.3769E-04	1.4953E+21	8.5868E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	2.3124E+19
Ba-139	2.7845E+04	1.7023E-06	7.3754E+18	4.6473E+18
Ba-140	5.7285E+04	7.8248E-04	3.3659E+21	7.4204E+18
La-140	7.0439E+02	1.2673E-06	5.4513E+18	7.9751E+16
La-141	4.1471E+02	7.3331E-08	3.1320E+17	5.8538E+16
La-142	2.6941E+02	1.8820E-08	7.9814E+16	4.3726E+16
Ce-141	1.3562E+03	4.7598E-05	2.0329E+20	1.7550E+17
Ce-143	1.2699E+03	1.9123E-06	8.0530E+18	1.6600E+17
Ce-144	1.0891E+03	3.4146E-04	1.4280E+21	1.4093E+17
Pr-143	5.0946E+02	7.5657E-06	3.1861E+19	6.5898E+16
Nd-147	2.1184E+02	2.6186E-06	1.0727E+19	2.7445E+16
Np-239	1.5152E+04	6.5313E-05	1.6457E+20	1.9723E+18
Pu-238	4.3973E+00	2.5686E-04	6.4992E+20	5.6897E+14
Pu-239	3.8519E-01	6.1971E-03	1.5615E+22	4.9838E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	9.3340E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	2.0118E+16
Am-241	1.0417E-01	3.0352E-05	7.5843E+19	1.3478E+13
Cm-242	2.6434E+01	7.9757E-06	1.9847E+19	3.4206E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	2.2610E+14

DW Transport Group Inventory:

Time (h) = 1.5000	Atmosphere	Sump	
Noble gases (atoms)	1.9277E+25	0.0000E+00	
Elemental I (atoms)	9.0098E+20	3.4595E+22	
Organic I (atoms)	1.0836E+21	0.0000E+00	
Aerosols (kg)	8.8768E-01	3.5140E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3398E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6739E-04
Total I (Ci)			2.7945E+06

DW to RB Transport Group Inventory:

Time (h) = 1.5000 Leakage Transport

Noble gases (atoms)	6.6893E+21
Elemental I (atoms)	1.2956E+18
Organic I (atoms)	4.5988E+17
Aerosols (kg)	1.3847E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5320E+21
Elemental I (atoms)	0.0000E+00	6.8409E+17
Organic I (atoms)	0.0000E+00	2.4282E+17
Aerosols (kg)	0.0000E+00	7.3110E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 1.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5320E+21
Elemental I (atoms)	0.0000E+00	6.8409E+17
Organic I (atoms)	0.0000E+00	2.4282E+17
Aerosols (kg)	0.0000E+00	7.3110E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.5000	Ci	kg	Atoms	Decay
Co-58	1.3266E-02	4.1721E-10	4.3319E+15	9.0521E+11
Co-60	1.5887E-02	1.4055E-08	1.4107E+17	1.0839E+12
Kr-85	3.2228E+02	8.2145E-04	5.8199E+21	1.8016E+16
Kr-85m	4.2118E+03	5.1179E-07	3.6260E+18	2.4663E+17
Kr-87	4.7066E+03	1.6616E-07	1.1502E+18	3.1183E+17
Kr-88	1.0027E+04	7.9963E-07	5.4721E+18	6.0346E+17
Rb-86	1.2259E+00	1.5067E-08	1.0550E+17	1.5859E+14
Sr-89	2.2484E+01	7.7392E-07	5.2367E+18	1.5342E+15
Sr-90	2.9588E+00	2.1691E-05	1.4514E+20	2.0186E+14
Sr-91	2.5089E+01	6.9210E-09	4.5801E+16	1.7526E+15
Sr-92	1.9876E+01	1.5813E-09	1.0351E+16	1.4750E+15
Y-90	4.7686E-02	8.7648E-11	5.8648E+14	2.7550E+12
Y-91	2.8819E-01	1.1751E-08	7.7768E+16	1.9582E+13
Y-92	2.4287E+00	2.5240E-10	1.6521E+15	1.0861E+14
Y-93	2.9075E-01	8.7146E-11	5.6430E+14	2.0282E+13
Zr-95	3.4843E-01	1.6219E-08	1.0281E+17	2.3775E+13
Zr-97	3.1741E-01	1.6604E-10	1.0308E+15	2.1944E+13
Nb-95	3.4935E-01	8.9341E-09	5.6634E+16	2.3834E+13
Mo-99	4.3927E+00	9.1589E-09	5.5713E+16	3.0071E+14
Tc-99m	3.9357E+00	7.4848E-10	4.5530E+15	2.6740E+14
Ru-103	3.8678E+00	1.1984E-07	7.0070E+17	2.6394E+14
Ru-105	2.1844E+00	3.2497E-10	1.8638E+15	1.5682E+14
Ru-106	1.6841E+00	5.0338E-07	2.8598E+18	1.1490E+14
Rh-105	2.5835E+00	3.0609E-09	1.7555E+16	1.7627E+14
Sb-127	4.3954E+00	1.6459E-08	7.8045E+16	3.0060E+14
Sb-129	1.0797E+01	1.9200E-09	8.9631E+15	7.7619E+14
Te-127	4.3905E+00	1.6636E-09	7.8887E+15	2.9871E+14
Te-127m	7.5360E-01	7.9893E-08	3.7884E+17	5.1413E+13
Te-129	1.1770E+01	5.6201E-10	2.6236E+15	8.0507E+14
Te-129m	2.4833E+00	8.2431E-08	3.8482E+17	1.6941E+14
Te-131m	9.0235E+00	1.1316E-08	5.2020E+16	6.2022E+14
Te-132	6.6139E+01	2.1785E-07	9.9390E+17	4.5252E+15
I-131	5.5750E+02	4.4969E-06	2.0672E+19	6.8728E+16
I-132	6.1814E+02	5.9884E-08	2.7321E+17	8.3616E+16
I-133	1.1093E+03	9.7926E-07	4.4340E+18	1.3905E+17
I-134	4.0609E+02	1.5223E-08	6.8413E+16	8.0672E+16
I-135	9.4167E+02	2.6814E-07	1.1961E+18	1.2288E+17
Xe-133	3.4352E+04	1.8352E-04	8.3098E+20	1.9226E+18
Xe-135	1.4083E+04	5.5146E-06	2.4600E+19	7.9601E+17
Cs-134	1.3441E+02	1.0389E-04	4.6689E+20	1.7373E+16
Cs-136	4.0082E+01	5.4689E-07	2.4216E+18	5.1871E+15
Cs-137	1.0817E+02	1.2436E-03	5.4665E+21	1.3981E+16
Ba-139	1.6823E+01	1.0285E-09	4.4560E+15	1.3586E+15
Ba-140	3.4610E+01	4.7275E-07	2.0336E+18	2.3629E+15
La-140	6.8180E-01	1.2266E-09	5.2764E+15	3.7272E+13
La-141	2.5056E-01	4.4304E-11	1.8922E+14	1.8108E+13
La-142	1.6277E-01	1.1370E-11	4.8221E+13	1.2903E+13
Ce-141	8.1924E-01	2.8752E-08	1.2280E+17	5.5899E+13
Ce-143	7.6723E-01	1.1553E-09	4.8654E+15	5.2699E+13
Ce-144	6.5798E-01	2.0630E-07	8.6274E+17	4.4892E+13
Pr-143	3.0823E-01	4.5773E-09	1.9277E+16	2.1012E+13
Nd-147	1.2799E-01	1.5820E-09	6.4812E+15	8.7391E+12
Np-239	9.1543E+00	3.9460E-08	9.9428E+16	6.2702E+14
Pu-238	2.6567E-03	1.5518E-07	3.9266E+17	1.8125E+11
Pu-239	2.3272E-04	3.7441E-06	9.4341E+18	1.5876E+10
Pu-240	4.3583E-04	1.9126E-06	4.7993E+18	2.9734E+10
Pu-241	9.3937E-02	9.1190E-07	2.2787E+18	6.4088E+12
Am-241	6.2942E-05	1.8339E-08	4.5825E+16	4.2938E+09
Cm-242	1.5970E-02	4.8186E-09	1.1991E+16	1.0896E+12
Cm-244	1.0557E-03	1.3049E-08	3.2206E+16	7.2025E+10

RB Transport Group Inventory:

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Time (h) =   1.5000    Atmosphere     Sump
Noble gases (atoms)    6.6857E+21  0.0000E+00
Elemental I (atoms)    1.2720E+18  0.0000E+00
Organic I (atoms)      4.5559E+17  0.0000E+00
Aerosols (kg)          1.3846E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.3051E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.8656E-08
Total I (Ci)                                   3.6327E+03

DW to  RB Transport Group Inventory:
Time (h) =   1.5000  Leakage Transport

Noble gases (atoms)      6.6893E+21
Elemental I (atoms)      1.2956E+18
Organic I (atoms)        4.5988E+17
Aerosols (kg)            1.3847E-03

RB toEnvironment Transport Group Inventory:

                        Pathway
Time (h) =   1.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   1.5000       Ci           kg         Atoms      Decay
Co-58                  5.1409E-11  1.6167E-18  1.6787E+07  2.0753E+03
Co-60                  6.1566E-11  5.4464E-17  5.4665E+08  2.4851E+03
Kr-85                  3.9305E-03  1.0018E-08  7.0978E+16  1.6052E+11
Kr-85m                 5.1367E-02  6.2418E-12  4.4222E+13  2.1729E+12
Kr-87                  5.7401E-02  2.0265E-12  1.4027E+13  2.6650E+12
Kr-88                  1.2228E-01  9.7522E-12  6.6737E+13  5.2814E+12
Rb-86                  1.4864E-08  1.8268E-16  1.2792E+09  1.1651E+06
Sr-89                  8.7129E-08  2.9990E-15  2.0293E+10  3.5174E+06
Sr-90                  1.1466E-08  8.4054E-14  5.6243E+11  4.6281E+05
Sr-91                  9.7221E-08  2.6820E-17  1.7749E+08  3.9840E+06
Sr-92                  7.7022E-08  6.1277E-18  4.0111E+07  3.2798E+06
Y-90                   2.1056E-10  3.8702E-19  2.5896E+06  7.4500E+03
Y-91                   1.1212E-09  4.5717E-17  3.0254E+08  4.5087E+04
Y-92                   1.2683E-08  1.3181E-18  8.6278E+06  3.9417E+05
Y-93                   1.1267E-09  3.3770E-19  2.1867E+06  4.6128E+04
Zr-95                  1.3502E-09  6.2850E-17  3.9841E+08  5.4507E+04
Zr-97                  1.2300E-09  6.4342E-19  3.9946E+06  5.0071E+04
Nb-95                  1.3538E-09  3.4621E-17  2.1946E+08  5.4644E+04
Mo-99                  1.7022E-08  3.5492E-17  2.1589E+08  6.8860E+05
Tc-99m                 1.5251E-08  2.9005E-18  1.7643E+07  6.1247E+05
Ru-103                 1.4988E-08  4.6441E-16  2.7153E+09  6.0511E+05
Ru-105                 8.4650E-09  1.2593E-18  7.2225E+06  3.5296E+05
Ru-106                 6.5260E-09  1.9506E-15  1.1082E+10  2.6343E+05
Rh-105                 1.0012E-08  1.1861E-17  6.8028E+07  4.0401E+05
Sb-127                 1.7033E-08  6.3780E-17  3.0243E+08  6.8859E+05
Sb-129                 4.1839E-08  7.4402E-18  3.4733E+07  1.7461E+06
Te-127                 1.7014E-08  6.4468E-18  3.0570E+07  6.8444E+05
Te-127m                2.9203E-09  3.0960E-16  1.4681E+09  1.1788E+05
Te-129                 4.5609E-08  2.1778E-18  1.0167E+07  1.8234E+06
Te-129m                9.6230E-09  3.1943E-16  1.4912E+09  3.8842E+05
Te-131m                3.4967E-08  4.3851E-17  2.0159E+08  1.4182E+06
Te-132                 2.5630E-07  8.4421E-16  3.8515E+09  1.0364E+07
I-131                  4.0712E-04  3.2839E-12  1.5096E+13  3.0141E+10
I-132                  4.0958E-04  3.9680E-14  1.8103E+11  3.3483E+10
I-133                  8.1022E-04  7.1523E-13  3.2385E+12  6.0699E+10
I-134                  2.9660E-04  1.1118E-14  4.9967E+10  3.0873E+10
I-135                  6.8778E-04  1.9584E-13  8.7363E+11  5.3027E+10
Xe-133                 4.1863E-01  2.2365E-09  1.0127E+16  1.7113E+13
Xe-135                 1.6834E-01  6.5921E-11  2.9406E+14  6.9489E+12
Cs-134                 1.6298E-06  1.2596E-12  5.6610E+12  1.2766E+08
Cs-136                 4.8599E-07  6.6310E-15  2.9362E+10  3.8102E+07
Cs-137                 1.3116E-06  1.5079E-11  6.6281E+13  1.0273E+08
Ba-139                 6.5192E-08  3.9856E-18  1.7267E+07  2.9281E+06
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Ba-140	1.3412E-07	1.8320E-15	7.8803E+09	5.4162E+06
La-140	3.1201E-09	5.6134E-18	2.4146E+07	1.0649E+05
La-141	9.7093E-10	1.7168E-19	7.3326E+05	4.0657E+04
La-142	6.3074E-10	4.4061E-20	1.8686E+05	2.8002E+04
Ce-141	3.1743E-09	1.1141E-16	4.7582E+08	1.2815E+05
Ce-143	2.9731E-09	4.4770E-18	1.8854E+07	1.2053E+05
Ce-144	2.5498E-09	7.9943E-16	3.3432E+09	1.0293E+05
Pr-143	1.1953E-09	1.7750E-17	7.4750E+07	4.8210E+04
Nd-147	4.9596E-10	6.1306E-18	2.5115E+07	2.0031E+04
Np-239	3.5474E-08	1.5291E-16	3.8530E+08	1.4356E+06
Pu-238	1.0295E-11	6.0135E-16	1.5216E+09	4.1556E+02
Pu-239	9.0182E-13	1.4509E-14	3.6558E+10	3.6401E+01
Pu-240	1.6889E-12	7.4118E-15	1.8598E+10	6.8173E+01
Pu-241	3.6402E-10	3.5337E-15	8.8301E+09	1.4694E+04
Am-241	2.4392E-13	7.1068E-17	1.7758E+08	9.8452E+00
Cm-242	6.1887E-11	1.8673E-17	4.6467E+07	2.4982E+03
Cm-244	4.0910E-12	5.0567E-17	1.2480E+08	1.6514E+02

CR Transport Group Inventory:

Time (h) = 1.5000	Atmosphere	Sump	
Noble gases (atoms)	8.1524E+16	0.0000E+00	
Elemental I (atoms)	1.6777E+13	0.0000E+00	
Organic I (atoms)	2.3779E+12	0.0000E+00	
Aerosols (kg)	1.6528E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.9742E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.4501E-13
Total I (Ci)			2.6113E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.9052E+16
Elemental I (atoms)	0.0000E+00	2.3479E+13
Organic I (atoms)	0.0000E+00	2.8690E+12
Aerosols (kg)	0.0000E+00	2.2985E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.0238E+16
Elemental I (atoms)	4.5900E+13	1.4196E+12
Organic I (atoms)	6.5382E+12	2.0221E+11
Aerosols (kg)	4.4858E-11	1.3873E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	1.7738E+16	0.0000E+00
Elemental I (atoms)	7.9334E+12	0.0000E+00
Organic I (atoms)	6.7640E+11	0.0000E+00
Aerosols (kg)	7.8441E-12	0.0000E+00

EAB Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3731E-02	6.1618E-02	1.5683E-02
Accumulated dose (rem)	1.9115E-02	1.1423E-01	2.2736E-02

LPZ Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5342E-03	6.8847E-03	1.7523E-03
Accumulated dose (rem)	2.1358E-03	1.2763E-02	2.5403E-03

CR Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.5673E-03	1.8993E-01	9.5797E-03
Accumulated dose (rem)	4.5726E-03	3.3214E-01	1.5093E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.1954E+01	6.9041E-07	7.1686E+18	4.3041E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	5.1539E+15
Kr-85	1.3592E+06	3.4645E+00	2.4546E+25	1.5095E+20
Kr-85m	1.6441E+07	1.9978E-03	1.4154E+22	1.9894E+21
Kr-87	1.5115E+07	5.3361E-04	3.6937E+21	2.3106E+21
Kr-88	3.7430E+07	2.9850E-03	2.0428E+22	4.7675E+21
Rb-86	7.5639E+02	9.2960E-06	6.5095E+19	3.1286E+17
Sr-89	3.7204E+04	1.2806E-03	8.6651E+21	7.2949E+18
Sr-90	4.8972E+03	3.5902E-02	2.4023E+23	9.5983E+17
Sr-91	4.0038E+04	1.1045E-05	7.3093E+19	8.2842E+18
Sr-92	2.8949E+04	2.3031E-06	1.5076E+19	6.8898E+18
Y-90	5.6074E+01	1.0306E-07	6.8963E+17	1.0026E+16
Y-91	4.7306E+02	1.9290E-05	1.2766E+20	9.2588E+16
Y-92	1.0497E+03	1.0909E-07	7.1409E+17	1.0861E+17
Y-93	4.6500E+02	1.3938E-07	9.0251E+17	9.5900E+16
Zr-95	5.7658E+02	2.6839E-05	1.7013E+20	1.1304E+17
Zr-97	5.1470E+02	2.6924E-07	1.6716E+18	1.0399E+17
Nb-95	5.7823E+02	1.4787E-05	9.3739E+19	1.1333E+17
Mo-99	7.2326E+03	1.5080E-05	9.1732E+19	1.4286E+18
Tc-99m	6.5089E+03	1.2378E-06	7.5298E+18	1.2719E+18
Ru-103	6.3996E+03	1.9829E-04	1.1593E+21	1.2550E+18
Ru-105	3.3441E+03	4.9749E-07	2.8533E+18	7.3686E+17
Ru-106	2.7873E+03	8.3314E-04	4.7333E+21	5.4633E+17
Rh-105	4.2684E+03	5.0571E-06	2.9004E+19	8.3794E+17
Sb-127	7.2478E+03	2.7140E-05	1.2869E+20	1.4284E+18
Sb-129	1.6493E+04	2.9329E-06	1.3692E+19	3.6462E+18
Te-127	7.2647E+03	2.7527E-06	1.3053E+19	1.4207E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.4447E+17
Te-129	1.8672E+04	8.9158E-07	4.1622E+18	3.8108E+18
Te-129m	4.1101E+03	1.3643E-04	6.3691E+20	8.0555E+17
Te-131m	1.4764E+04	1.8515E-05	8.5114E+19	2.9434E+18
Te-132	1.0899E+05	3.5899E-04	1.6378E+21	2.1501E+19
I-131	4.1769E+05	3.3692E-03	1.5488E+22	1.4726E+20
I-132	5.9069E+05	5.7225E-05	2.6108E+20	2.0957E+20
I-133	8.1826E+05	7.2233E-04	3.2706E+21	2.9914E+20
I-134	2.0512E+05	7.6891E-06	3.4556E+19	2.0481E+20
I-135	6.7019E+05	1.9084E-04	8.5130E+20	2.6731E+20
Xe-133	1.4478E+08	7.7348E-01	3.5023E+24	1.6107E+22
Xe-135	6.0150E+07	2.3554E-02	1.0507E+23	6.7491E+21
Cs-134	8.2994E+04	6.4146E-02	2.8828E+23	3.4263E+19
Cs-136	2.4722E+04	3.3731E-04	1.4936E+21	1.0234E+19
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.7573E+19
Ba-139	2.1655E+04	1.3239E-06	5.7356E+18	6.2871E+18
Ba-140	5.7220E+04	7.8160E-04	3.3621E+21	1.1233E+19
La-140	7.0403E+02	1.2666E-06	5.4485E+18	1.2012E+17
La-141	3.7971E+02	6.7141E-08	2.8676E+17	8.4975E+16
La-142	2.1517E+02	1.5031E-08	6.3745E+16	5.9795E+16
Ce-141	1.3561E+03	4.7593E-05	2.0327E+20	2.6583E+17
Ce-143	1.2566E+03	1.8923E-06	7.9689E+18	2.5014E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	2.1346E+17
Pr-143	5.0946E+02	7.5656E-06	3.1861E+19	9.9814E+16
Nd-147	2.1156E+02	2.6151E-06	1.0713E+19	4.1544E+16
Np-239	1.5059E+04	6.4914E-05	1.6356E+20	2.9783E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	8.6183E+14
Pu-239	3.8521E-01	6.1975E-03	1.5616E+22	7.5492E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.4138E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	3.0473E+16
Am-241	1.0418E-01	3.0353E-05	7.5847E+19	2.0416E+13
Cm-242	2.6431E+01	7.9749E-06	1.9846E+19	5.1810E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.4247E+14

DW Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8191E+25	0.0000E+00	
Elemental I (atoms)	8.9461E+20	4.8075E+22	
Organic I (atoms)	1.4880E+21	0.0000E+00	
Aerosols (kg)	8.8765E-01	4.8455E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3585E-04

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 1.6879E-04
Total I (Ci) 2.7020E+06

DW to RB Transport Group Inventory:
Time (h) = 2.0000 Leakage Transport

Noble gases (atoms) 1.4107E+22
Elemental I (atoms) 1.5765E+18
Organic I (atoms) 8.6220E+17
Aerosols (kg) 1.6620E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3237E+17
Organic I (atoms)	0.0000E+00	4.5524E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3237E+17
Organic I (atoms)	0.0000E+00	4.5524E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.0124E-02	6.3288E-10	6.5712E+15	2.0628E+12
Co-60	2.4105E-02	2.1324E-08	2.1403E+17	2.4704E+12
Kr-85	6.7985E+02	1.7328E-03	1.2277E+22	5.3052E+16
Kr-85m	8.2233E+03	9.9924E-07	7.0795E+18	6.8532E+17
Kr-87	7.5600E+03	2.6690E-07	1.8475E+18	7.5283E+17
Kr-88	1.8721E+04	1.4930E-06	1.0217E+19	1.6225E+18
Rb-86	1.4614E+00	1.7960E-08	1.2576E+17	2.4966E+14
Sr-89	3.4104E+01	1.1739E-06	7.9430E+18	3.4961E+15
Sr-90	4.4891E+00	3.2910E-05	2.2021E+20	4.6007E+14
Sr-91	3.6702E+01	1.0125E-08	6.7002E+16	3.9001E+15
Sr-92	2.6537E+01	2.1112E-09	1.3819E+16	3.0966E+15
Y-90	8.4673E-02	1.5563E-10	1.0414E+15	7.0885E+12
Y-91	4.3910E-01	1.7905E-08	1.1849E+17	4.4756E+13
Y-92	4.6961E+00	4.8804E-10	3.1946E+15	3.2918E+14
Y-93	4.2625E-01	1.2776E-10	8.2730E+14	4.5197E+13
Zr-95	5.2853E-01	2.4602E-08	1.5596E+17	5.4178E+13
Zr-97	4.7181E-01	2.4681E-10	1.5323E+15	4.9344E+13
Nb-95	5.3005E-01	1.3555E-08	8.5927E+16	5.4320E+13
Mo-99	6.6299E+00	1.3823E-08	8.4087E+16	6.8299E+14
Tc-99m	5.9665E+00	1.1347E-09	6.9023E+15	6.0878E+14
Ru-103	5.8663E+00	1.8177E-07	1.0627E+18	6.0142E+14
Ru-105	3.0655E+00	4.5603E-10	2.6155E+15	3.3975E+14
Ru-106	2.5551E+00	7.6371E-07	4.3388E+18	2.6186E+14
Rh-105	3.9127E+00	4.6356E-09	2.6587E+16	4.0135E+14
Sb-127	6.6439E+00	2.4879E-08	1.1797E+17	6.8341E+14
Sb-129	1.5118E+01	2.6885E-09	1.2551E+16	1.6793E+15
Te-127	6.6594E+00	2.5233E-09	1.1965E+16	6.8040E+14
Te-127m	1.1434E+00	1.2122E-07	5.7480E+17	1.1718E+14
Te-129	1.7116E+01	8.1728E-10	3.8153E+15	1.7846E+15
Te-129m	3.7676E+00	1.2506E-07	5.8384E+17	3.8611E+14
Te-131m	1.3534E+01	1.6972E-08	7.8021E+16	1.4029E+15
Te-132	9.9905E+01	3.2907E-07	1.5013E+18	1.0283E+16
I-131	6.8567E+02	5.5308E-06	2.5425E+19	1.1097E+17
I-132	7.1430E+02	6.9200E-08	3.1571E+17	1.2917E+17
I-133	1.3440E+03	1.1865E-06	5.3722E+18	2.2246E+17
I-134	3.3692E+02	1.2630E-08	5.6760E+16	1.0595E+17
I-135	1.1008E+03	3.1346E-07	1.3983E+18	1.9240E+17
Xe-133	7.2325E+04	3.8639E-04	1.7495E+21	5.6534E+18
Xe-135	2.9189E+04	1.1430E-05	5.0987E+19	2.3148E+18
Cs-134	1.6035E+02	1.2393E-04	5.5697E+20	2.7362E+16

Cs-136	4.7764E+01	6.5170E-07	2.8857E+18	8.1639E+15
Cs-137	1.2904E+02	1.4836E-03	6.5213E+21	2.2019E+16
Ba-139	1.9850E+01	1.2136E-09	5.2577E+15	2.6464E+15
Ba-140	5.2451E+01	7.1646E-07	3.0819E+18	5.3814E+15
La-140	1.2619E+00	2.2703E-09	9.7658E+15	9.9928E+13
La-141	3.4806E-01	6.1546E-11	2.6286E+14	3.8979E+13
La-142	1.9724E-01	1.3778E-11	5.8433E+13	2.5534E+13
Ce-141	1.2427E+00	4.3614E-08	1.8628E+17	1.2738E+14
Ce-143	1.1519E+00	1.7346E-09	7.3048E+15	1.1928E+14
Ce-144	9.9827E-01	3.1299E-07	1.3089E+18	1.0231E+14
Pr-143	4.6804E-01	6.9505E-09	2.9271E+16	4.7913E+13
Nd-147	1.9393E-01	2.3972E-09	9.8206E+15	1.9900E+13
Np-239	1.3804E+01	5.9504E-08	1.4993E+17	1.4233E+15
Pu-238	4.0308E-03	2.3545E-07	5.9576E+17	4.1310E+11
Pu-239	3.5311E-04	5.6810E-06	1.4315E+19	3.6186E+10
Pu-240	6.6126E-04	2.9019E-06	7.2816E+18	6.7768E+10
Pu-241	1.4252E-01	1.3836E-06	3.4573E+18	1.4607E+13
Am-241	9.5507E-05	2.7827E-08	6.9535E+16	9.7869E+09
Cm-242	2.4229E-02	7.3104E-09	1.8192E+16	2.4833E+12
Cm-244	1.6018E-03	1.9799E-08	4.8865E+16	1.6415E+11

RB Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	1.4097E+22	0.0000E+00	
Elemental I (atoms)	1.5405E+18	0.0000E+00	
Organic I (atoms)	8.5205E+17	0.0000E+00	
Aerosols (kg)	1.6619E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8188E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.4808E-08
Total I (Ci)			4.1818E+03

DW to RB Transport Group Inventory:

Time (h) = 2.0000	Leakage Transport
Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5765E+18
Organic I (atoms)	8.6220E+17
Aerosols (kg)	1.6620E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.5469E-10	4.8647E-18	5.0510E+07	9.2861E+03
Co-60	1.8529E-10	1.6391E-16	1.6452E+09	1.1121E+04
Kr-85	1.4648E-02	3.7336E-08	2.6452E+17	7.9750E+11
Kr-85m	1.7718E-01	2.1530E-11	1.5254E+14	1.0123E+13
Kr-87	1.6289E-01	5.7507E-12	3.9806E+13	1.0592E+13
Kr-88	4.0338E-01	3.2169E-11	2.2014E+14	2.3716E+13
Rb-86	2.5309E-08	3.1104E-16	2.1781E+09	2.5594E+06
Sr-89	2.6215E-07	9.0232E-15	6.1055E+10	1.5738E+07
Sr-90	3.4507E-08	2.5297E-13	1.6927E+12	2.0712E+06
Sr-91	2.8211E-07	7.7825E-17	5.1502E+08	1.7337E+07
Sr-92	2.0398E-07	1.6228E-17	1.0623E+08	1.3317E+07
Y-90	7.6728E-10	1.4103E-18	9.4365E+06	3.9517E+04
Y-91	3.3947E-09	1.3843E-16	9.1607E+08	2.0275E+05
Y-92	4.9375E-08	5.1313E-18	3.3588E+07	2.3637E+06
Y-93	3.2764E-09	9.8205E-19	6.3592E+06	2.0106E+05
Zr-95	4.0626E-09	1.8911E-16	1.1988E+09	2.4389E+05
Zr-97	3.6266E-09	1.8971E-18	1.1778E+07	2.2057E+05
Nb-95	4.0743E-09	1.0419E-16	6.6049E+08	2.4454E+05
Mo-99	5.0962E-08	1.0626E-16	6.4635E+08	3.0692E+06
Tc-99m	4.5862E-08	8.7220E-18	5.3056E+07	2.7388E+06
Ru-103	4.5092E-08	1.3972E-15	8.1689E+09	2.7072E+06

Ru-105	2.3563E-08	3.5054E-18	2.0105E+07	1.4880E+06
Ru-106	1.9640E-08	5.8704E-15	3.3351E+10	1.1789E+06
Rh-105	3.0076E-08	3.5633E-17	2.0437E+08	1.8059E+06
Sb-127	5.1069E-08	1.9123E-16	9.0679E+08	3.0727E+06
Sb-129	1.1621E-07	2.0666E-17	9.6473E+07	7.3493E+06
Te-127	5.1188E-08	1.9396E-17	9.1973E+07	3.0620E+06
Te-127m	8.7889E-09	9.3176E-16	4.4183E+09	5.2753E+05
Te-129	1.3156E-07	6.2822E-18	2.9327E+07	7.9122E+06
Te-129m	2.8960E-08	9.6132E-16	4.4878E+09	1.7382E+06
Te-131m	1.0403E-07	1.3046E-16	5.9972E+08	6.2905E+06
Te-132	7.6793E-07	2.5295E-15	1.1540E+10	4.6225E+07
I-131	7.6971E-04	6.2086E-12	2.8541E+13	7.0971E+10
I-132	6.9795E-04	6.7617E-14	3.0848E+11	7.2439E+10
I-133	1.5091E-03	1.3322E-12	6.0320E+12	1.4129E+11
I-134	3.7830E-04	1.4181E-14	6.3731E+10	5.4989E+10
I-135	1.2360E-03	3.5196E-13	1.5700E+12	1.2012E+11
Xe-133	1.5568E+00	8.3169E-09	3.7658E+16	8.4872E+13
Xe-135	6.1326E-01	2.4014E-10	1.0712E+15	3.3906E+13
Cs-134	2.7770E-06	2.1463E-12	9.6460E+12	2.8060E+08
Cs-136	8.2720E-07	1.1287E-14	4.9977E+10	8.3682E+07
Cs-137	2.2348E-06	2.5693E-11	1.1294E+14	2.2581E+08
Ba-139	1.5258E-07	9.3281E-18	4.0414E+07	1.0850E+07
Ba-140	4.0318E-07	5.5072E-15	2.3689E+10	2.4217E+07
La-140	1.1855E-08	2.1328E-17	9.1743E+07	5.9075E+05
La-141	2.6754E-09	4.7308E-19	2.0205E+06	1.7009E+05
La-142	1.5161E-09	1.0591E-19	4.4915E+05	1.0580E+05
Ce-141	9.5510E-09	3.3520E-16	1.4316E+09	5.7337E+05
Ce-143	8.8543E-09	1.3333E-17	5.6150E+07	5.3506E+05
Ce-144	7.6733E-09	2.4058E-15	1.0061E+10	4.6059E+05
Pr-143	3.6013E-09	5.3480E-17	2.2522E+08	2.1594E+05
Nd-147	1.4907E-09	1.8426E-17	7.5487E+07	8.9550E+04
Np-239	1.0611E-07	4.5739E-16	1.1525E+09	6.3942E+06
Pu-238	3.0984E-11	1.8098E-15	4.5794E+09	1.8597E+03
Pu-239	2.7143E-12	4.3668E-14	1.1003E+11	1.6291E+02
Pu-240	5.0829E-12	2.2306E-14	5.5971E+10	3.0509E+02
Pu-241	1.0955E-09	1.0635E-14	2.6575E+10	6.5758E+04
Am-241	7.3417E-13	2.1391E-16	5.3452E+08	4.4063E+01
Cm-242	1.8624E-10	5.6192E-17	1.3983E+08	1.1179E+04
Cm-244	1.2312E-11	1.5218E-16	3.7561E+08	7.3901E+02

CR Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	3.0367E+17	0.0000E+00	
Elemental I (atoms)	2.8985E+13	0.0000E+00	
Organic I (atoms)	7.0399E+12	0.0000E+00	
Aerosols (kg)	2.8321E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7106E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.5718E-13
Total I (Ci)			4.5911E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1340E+17
Elemental I (atoms)	0.0000E+00	4.3785E+13
Organic I (atoms)	0.0000E+00	8.9519E+12
Aerosols (kg)	0.0000E+00	4.2538E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.8110E+17
Elemental I (atoms)	9.5141E+13	2.9425E+12
Organic I (atoms)	2.1289E+13	6.5843E+11
Aerosols (kg)	9.2273E-11	2.8538E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported

Noble gases (atoms)	9.0686E+16	0.0000E+00
Elemental I (atoms)	1.7348E+13	0.0000E+00
Organic I (atoms)	2.5115E+12	0.0000E+00
Aerosols (kg)	1.7069E-11	0.0000E+00

EAB Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.4448E-03	9.1791E-03	2.7353E-03
Accumulated dose (rem)	2.1560E-02	1.2341E-01	2.5471E-02

LPZ Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.7316E-04	1.0256E-03	3.0562E-04
Accumulated dose (rem)	2.4089E-03	1.3789E-02	2.8459E-03

CR Doses:

Time (h) = 2.1000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.1845E-03	5.0606E-02	2.7855E-03
Accumulated dose (rem)	5.7570E-03	3.8274E-01	1.7879E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.0928E+00	3.4368E-08	3.5684E+17	4.3186E+15
Co-60	1.3091E+00	1.1581E-06	1.1623E+19	5.1714E+15
Kr-85	1.3591E+06	3.4642E+00	2.4543E+25	1.6905E+20
Kr-85m	1.6187E+07	1.9669E-03	1.3936E+22	2.2067E+21
Kr-87	1.4312E+07	5.0526E-04	3.4974E+21	2.5065E+21
Kr-88	3.6524E+07	2.9128E-03	1.9933E+22	5.2599E+21
Rb-86	3.7648E+01	4.6269E-07	3.2400E+18	3.1336E+17
Sr-89	1.8520E+03	6.3746E-05	4.3133E+20	7.3195E+18
Sr-90	2.4379E+02	1.7872E-03	1.1959E+22	9.6308E+17
Sr-91	1.9787E+03	5.4584E-07	3.6122E+18	8.3106E+18
Sr-92	1.4047E+03	1.1176E-07	7.3154E+17	6.9087E+18
Y-90	3.0524E+00	5.6104E-09	3.7541E+16	1.0064E+16
Y-91	2.3590E+01	9.6191E-07	6.3656E+18	9.2902E+16
Y-92	7.9102E+01	8.2207E-09	5.3811E+16	1.0930E+17
Y-93	2.2990E+01	6.8908E-09	4.4621E+16	9.6207E+16
Zr-95	2.8701E+01	1.3360E-06	8.4691E+18	1.1342E+17
Zr-97	2.5518E+01	1.3348E-08	8.2871E+16	1.0433E+17
Nb-95	2.8785E+01	7.3613E-07	4.6664E+18	1.1371E+17
Mo-99	3.5967E+02	7.4991E-07	4.5617E+18	1.4334E+18
Tc-99m	3.2396E+02	6.1609E-08	3.7477E+17	1.2762E+18
Ru-103	3.1855E+02	9.8703E-06	5.7709E+19	1.2592E+18
Ru-105	1.6390E+02	2.4382E-08	1.3984E+17	7.3906E+17
Ru-106	1.3876E+02	4.1474E-05	2.3563E+20	5.4818E+17
Rh-105	2.1239E+02	2.5164E-07	1.4432E+18	8.4077E+17
Sb-127	3.6054E+02	1.3501E-06	6.4017E+18	1.4332E+18
Sb-129	8.0796E+02	1.4368E-07	6.7074E+17	3.6570E+18
Te-127	3.6162E+02	1.3702E-07	6.4974E+17	1.4255E+18
Te-127m	6.2094E+01	6.5830E-06	3.1215E+19	2.4529E+17
Te-129	9.2100E+02	4.3978E-08	2.0530E+17	3.8228E+18
Te-129m	2.0460E+02	6.7917E-06	3.1706E+19	8.0827E+17
Te-131m	7.3326E+02	9.1956E-07	4.2273E+18	2.9532E+18
Te-132	5.4207E+03	1.7855E-05	8.1459E+19	2.1573E+19
I-131	5.0440E+04	4.0686E-04	1.8704E+21	1.4793E+20
I-132	6.9402E+04	6.7236E-06	3.0674E+19	2.1050E+20
I-133	9.8518E+04	8.6968E-05	3.9379E+20	3.0046E+20
I-134	2.2895E+04	8.5824E-07	3.8571E+18	2.0512E+20
I-135	8.0116E+04	2.2813E-05	1.0177E+20	2.6838E+20
Xe-133	1.4469E+08	7.7298E-01	3.5000E+24	1.8034E+22
Xe-135	5.9688E+07	2.3373E-02	1.0426E+23	7.5472E+21
Cs-134	4.1315E+03	3.1933E-03	1.4351E+22	3.4318E+19
Cs-136	1.2304E+03	1.6788E-05	7.4338E+19	1.0251E+19
Cs-137	3.3249E+03	3.8226E-02	1.6803E+23	2.7617E+19
Ba-139	1.0251E+03	6.2672E-08	2.7152E+17	6.3011E+18
Ba-140	2.8478E+03	3.8900E-05	1.6733E+20	1.1271E+19
La-140	3.9889E+01	7.1765E-08	3.0870E+17	1.2059E+17
La-141	1.8572E+01	3.2839E-09	1.4026E+16	8.5225E+16

La-142	1.0240E+01	7.1536E-10	3.0338E+15	5.9934E+16
Ce-141	6.7503E+01	2.3691E-06	1.0118E+19	2.6672E+17
Ce-143	6.2425E+01	9.4002E-08	3.9587E+17	2.5097E+17
Ce-144	5.4212E+01	1.6997E-05	7.1082E+19	2.1418E+17
Pr-143	2.5369E+01	3.7674E-07	1.5866E+18	1.0015E+17
Nd-147	1.0529E+01	1.3015E-07	5.3318E+17	4.1685E+16
Np-239	7.4875E+02	3.2275E-06	8.1324E+18	2.9883E+18
Pu-238	2.1890E-01	1.2787E-05	3.2354E+19	8.6475E+14
Pu-239	1.9177E-02	3.0852E-04	7.7739E+20	7.5747E+13
Pu-240	3.5911E-02	1.5759E-04	3.9544E+20	1.4186E+14
Pu-241	7.7400E+00	7.5136E-05	1.8775E+20	3.0576E+16
Am-241	5.1862E-03	1.5111E-06	3.7759E+18	2.0485E+13
Cm-242	1.3158E+00	3.9699E-07	9.8792E+17	5.1986E+15
Cm-244	8.6986E-02	1.0752E-06	2.6537E+18	3.4363E+14

DW Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	2.8185E+25	0.0000E+00	
Elemental I (atoms)	4.4456E+19	4.8566E+22	
Organic I (atoms)	1.4852E+21	0.0000E+00	
Aerosols (kg)	4.4188E-02	4.8943E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.6385E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.0325E-05
Total I (Ci)			3.2137E+05

DW to RB Transport Group Inventory:

Time (h) = 2.1000	Leakage Transport
Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5520E+17
Aerosols (kg)	1.6722E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3550E+17
Organic I (atoms)	0.0000E+00	4.8369E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3550E+17
Organic I (atoms)	0.0000E+00	4.8369E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	2.0558E-02	6.4652E-10	6.7128E+15	2.3367E+12
Co-60	2.4625E-02	2.1785E-08	2.1865E+17	2.7984E+12
Kr-85	7.6480E+02	1.9494E-03	1.3811E+22	6.3239E+16
Kr-85m	9.1088E+03	1.1068E-06	7.8418E+18	8.0759E+17
Kr-87	8.0535E+03	2.8432E-07	1.9680E+18	8.6308E+17
Kr-88	2.0553E+04	1.6391E-06	1.1217E+19	1.8997E+18
Rb-86	1.4761E+00	1.8141E-08	1.2703E+17	2.6932E+14
Sr-89	3.4838E+01	1.1992E-06	8.1141E+18	3.9602E+15
Sr-90	4.5861E+00	3.3621E-05	2.2496E+20	5.2115E+14
Sr-91	3.7222E+01	1.0268E-08	6.7952E+16	4.3977E+15
Sr-92	2.6425E+01	2.1023E-09	1.3761E+16	3.4531E+15
Y-90	9.0657E-02	1.6663E-10	1.1150E+15	8.2305E+12
Y-91	4.4922E-01	1.8318E-08	1.2122E+17	5.0729E+13
Y-92	5.1495E+00	5.3516E-10	3.5030E+15	3.9139E+14
Y-93	4.3248E-01	1.2963E-10	8.3939E+14	5.0978E+13
Zr-95	5.3992E-01	2.5132E-08	1.5932E+17	6.1370E+13
Zr-97	4.8003E-01	2.5110E-10	1.5589E+15	5.5751E+13
Nb-95	5.4149E-01	1.3848E-08	8.7783E+16	6.1532E+13

Mo-99	6.7660E+00	1.4107E-08	8.5813E+16	7.7316E+14
Tc-99m	6.0941E+00	1.1590E-09	7.0500E+15	6.8950E+14
Ru-103	5.9925E+00	1.8568E-07	1.0856E+18	6.8124E+14
Ru-105	3.0831E+00	4.5866E-10	2.6306E+15	3.8114E+14
Ru-106	2.6102E+00	7.8020E-07	4.4325E+18	2.9663E+14
Rh-105	3.9955E+00	4.7337E-09	2.7149E+16	4.5454E+14
Sb-127	6.7823E+00	2.5397E-08	1.2043E+17	7.7379E+14
Sb-129	1.5199E+01	2.7028E-09	1.2618E+16	1.8834E+15
Te-127	6.8026E+00	2.5776E-09	1.2223E+16	7.7068E+14
Te-127m	1.1681E+00	1.2384E-07	5.8721E+17	1.3274E+14
Te-129	1.7326E+01	8.2730E-10	3.8621E+15	2.0107E+15
Te-129m	3.8489E+00	1.2776E-07	5.9644E+17	4.3738E+14
Te-131m	1.3794E+01	1.7298E-08	7.9522E+16	1.5868E+15
Te-132	1.0197E+02	3.3588E-07	1.5324E+18	1.1642E+16
I-131	6.9503E+02	5.6062E-06	2.5772E+19	1.2023E+17
I-132	7.0934E+02	6.8720E-08	3.1352E+17	1.3872E+17
I-133	1.3583E+03	1.1991E-06	5.4293E+18	2.4059E+17
I-134	3.1567E+02	1.1833E-08	5.3179E+16	1.1032E+17
I-135	1.1046E+03	3.1453E-07	1.4031E+18	2.0719E+17
Xe-133	8.1329E+04	4.3449E-04	1.9674E+21	6.7369E+18
Xe-135	3.2705E+04	1.2807E-05	5.7129E+19	2.7520E+18
Cs-134	1.6199E+02	1.2520E-04	5.6267E+20	2.9519E+16
Cs-136	4.8242E+01	6.5823E-07	2.9147E+18	8.8066E+15
Cs-137	1.3036E+02	1.4988E-03	6.5881E+21	2.3756E+16
Ba-139	1.9284E+01	1.1790E-09	5.1078E+15	2.9098E+15
Ba-140	5.3572E+01	7.3177E-07	3.1477E+18	6.0951E+15
La-140	1.3659E+00	2.4573E-09	1.0570E+16	1.1691E+14
La-141	3.4936E-01	6.1776E-11	2.6385E+14	4.3673E+13
La-142	1.9264E-01	1.3457E-11	5.7070E+13	2.8159E+13
Ce-141	1.2695E+00	4.4553E-08	1.9029E+17	1.4429E+14
Ce-143	1.1743E+00	1.7683E-09	7.4469E+15	1.3494E+14
Ce-144	1.0198E+00	3.1974E-07	1.3372E+18	1.1590E+14
Pr-143	4.7827E-01	7.1025E-09	2.9911E+16	5.4281E+13
Nd-147	1.9807E-01	2.4483E-09	1.0030E+16	2.2539E+13
Np-239	1.4085E+01	6.0715E-08	1.5298E+17	1.6110E+15
Pu-238	4.1179E-03	2.4054E-07	6.0863E+17	4.6795E+11
Pu-239	3.6074E-04	5.8038E-06	1.4624E+19	4.0991E+10
Pu-240	6.7554E-04	2.9646E-06	7.4389E+18	7.6767E+10
Pu-241	1.4560E-01	1.4134E-06	3.5319E+18	1.6546E+13
Am-241	9.7572E-05	2.8429E-08	7.1038E+16	1.1087E+10
Cm-242	2.4752E-02	7.4681E-09	1.8584E+16	2.8130E+12
Cm-244	1.6363E-03	2.0226E-08	4.9920E+16	1.8595E+11

RB Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	1.5856E+22	0.0000E+00	
Elemental I (atoms)	1.5557E+18	0.0000E+00	
Organic I (atoms)	9.4348E+17	0.0000E+00	
Aerosols (kg)	1.6795E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8539E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5194E-08
Total I (Ci)			4.1829E+03

DW to RB Transport Group Inventory:
Time (h) = 2.1000 Leakage Transport

Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5520E+17
Aerosols (kg)	1.6722E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.5930E-10	5.0097E-18	5.2015E+07	1.1408E+04
Co-60	1.9081E-10	1.6880E-16	1.6943E+09	1.3663E+04
Kr-85	1.5396E-02	3.9243E-08	2.7803E+17	1.0026E+12
Kr-85m	1.8337E-01	2.2282E-11	1.5787E+14	1.2585E+13
Kr-87	1.6213E-01	5.7237E-12	3.9619E+13	1.2812E+13
Kr-88	4.1375E-01	3.2996E-11	2.2581E+14	2.9295E+13
Rb-86	2.5133E-08	3.0888E-16	2.1629E+09	2.8942E+06
Sr-89	2.6995E-07	9.2919E-15	6.2873E+10	1.9334E+07
Sr-90	3.5536E-08	2.6052E-13	1.7432E+12	2.5445E+06
Sr-91	2.8842E-07	7.9564E-17	5.2653E+08	2.1193E+07
Sr-92	2.0476E-07	1.6290E-17	1.0663E+08	1.6080E+07
Y-90	8.2303E-10	1.5128E-18	1.0122E+07	4.9972E+04
Y-91	3.5011E-09	1.4276E-16	9.4475E+08	2.4930E+05
Y-92	5.3387E-08	5.5482E-18	3.6318E+07	3.0272E+06
Y-93	3.3511E-09	1.0044E-18	6.5041E+06	2.4585E+05
Zr-95	4.1836E-09	1.9474E-16	1.2345E+09	2.9961E+05
Zr-97	3.7196E-09	1.9457E-18	1.2080E+07	2.7022E+05
Nb-95	4.1959E-09	1.0730E-16	6.8020E+08	3.0043E+05
Mo-99	5.2427E-08	1.0931E-16	6.6494E+08	3.7679E+06
Tc-99m	4.7221E-08	8.9805E-18	5.4628E+07	3.3643E+06
Ru-103	4.6434E-08	1.4387E-15	8.4120E+09	3.3257E+06
Ru-105	2.3890E-08	3.5540E-18	2.0384E+07	1.8088E+06
Ru-106	2.0226E-08	6.0455E-15	3.4346E+10	1.4483E+06
Rh-105	3.0960E-08	3.6680E-17	2.1037E+08	2.2180E+06
Sb-127	5.2553E-08	1.9679E-16	9.3315E+08	3.7730E+06
Sb-129	1.1777E-07	2.0943E-17	9.7770E+07	8.9307E+06
Te-127	5.2711E-08	1.9973E-17	9.4710E+07	3.7615E+06
Te-127m	9.0512E-09	9.5957E-16	4.5501E+09	6.4809E+05
Te-129	1.3425E-07	6.4105E-18	2.9926E+07	9.6641E+06
Te-129m	2.9824E-08	9.8999E-16	4.6216E+09	2.1355E+06
Te-131m	1.0688E-07	1.3404E-16	6.1619E+08	7.7159E+06
Te-132	7.9014E-07	2.6026E-15	1.1874E+10	5.6754E+07
I-131	7.7177E-04	6.2253E-12	2.8618E+13	8.1252E+10
I-132	6.8242E-04	6.6113E-14	3.0162E+11	8.1667E+10
I-133	1.5087E-03	1.3318E-12	6.0302E+12	1.6142E+11
I-134	3.5060E-04	1.3143E-14	5.9065E+10	5.9849E+10
I-135	1.2269E-03	3.4935E-13	1.5584E+12	1.3654E+11
Xe-133	1.6355E+00	8.7373E-09	3.9562E+16	1.0666E+14
Xe-135	6.4055E-01	2.5083E-10	1.1189E+15	4.2470E+13
Cs-134	2.7581E-06	2.1317E-12	9.5803E+12	3.1734E+08
Cs-136	8.2139E-07	1.1207E-14	4.9626E+10	9.4624E+07
Cs-137	2.2196E-06	2.5518E-11	1.1217E+14	2.5538E+08
Ba-139	1.4943E-07	9.1353E-18	3.9579E+07	1.2891E+07
Ba-140	4.1511E-07	5.6702E-15	2.4391E+10	2.9747E+07
La-140	1.2814E-08	2.3054E-17	9.9166E+07	7.5205E+05
La-141	2.7071E-09	4.7868E-19	2.0444E+06	2.0647E+05
La-142	1.4927E-09	1.0427E-19	4.4222E+05	1.2614E+05
Ce-141	9.8354E-09	3.4518E-16	1.4743E+09	7.0438E+05
Ce-143	9.0994E-09	1.3702E-17	5.7704E+07	6.5639E+05
Ce-144	7.9022E-09	2.4776E-15	1.0361E+10	5.6585E+05
Pr-143	3.7097E-09	5.5091E-17	2.3200E+08	2.6533E+05
Nd-147	1.5347E-09	1.8971E-17	7.7719E+07	1.1000E+05
Np-239	1.0914E-07	4.7046E-16	1.1854E+09	7.8488E+06
Pu-238	3.1908E-11	1.8638E-15	4.7161E+09	2.2847E+03
Pu-239	2.7953E-12	4.4972E-14	1.1332E+11	2.0014E+02
Pu-240	5.2345E-12	2.2972E-14	5.7641E+10	3.7481E+02
Pu-241	1.1282E-09	1.0952E-14	2.7368E+10	8.0786E+04
Am-241	7.5609E-13	2.2030E-16	5.5048E+08	5.4134E+01
Cm-242	1.9179E-10	5.7868E-17	1.4400E+08	1.3734E+04
Cm-244	1.2679E-11	1.5673E-16	3.8681E+08	9.0791E+02

CR Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	3.1913E+17	0.0000E+00	
Elemental I (atoms)	2.8794E+13	0.0000E+00	
Organic I (atoms)	7.2855E+12	0.0000E+00	
Aerosols (kg)	2.8141E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7162E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.5723E-13
Total I (Ci)			4.5403E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2522E+17
Elemental I (atoms)	0.0000E+00	4.5888E+13
Organic I (atoms)	0.0000E+00	9.7459E+12
Aerosols (kg)	0.0000E+00	4.4555E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.1067E+17
Elemental I (atoms)	1.0024E+14	3.1003E+12
Organic I (atoms)	2.3215E+13	7.1798E+11
Aerosols (kg)	9.7164E-11	3.0051E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	1.1657E+17	0.0000E+00
Elemental I (atoms)	1.9752E+13	0.0000E+00
Organic I (atoms)	3.1074E+12	0.0000E+00
Aerosols (kg)	1.9416E-11	0.0000E+00

EAB Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.4472E-03	1.9727E-02	6.0713E-03
Accumulated dose (rem)	2.7007E-02	1.4314E-01	3.1542E-02

LPZ Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.0862E-04	2.2042E-03	6.7835E-04
Accumulated dose (rem)	3.0176E-03	1.5993E-02	3.5243E-03

CR Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.4794E-03	1.0194E-01	5.7032E-03
Accumulated dose (rem)	8.2364E-03	4.8468E-01	2.3582E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	5.9959E-01	1.8856E-08	1.9578E+17	4.3374E+15
Co-60	7.1828E-01	6.3543E-07	6.3777E+18	5.1938E+15
Kr-85	1.3588E+06	3.4635E+00	2.4538E+25	2.0526E+20
Kr-85m	1.5691E+07	1.9066E-03	1.3508E+22	2.6313E+21
Kr-87	1.2831E+07	4.5298E-04	3.1355E+21	2.8677E+21
Kr-88	3.4777E+07	2.7734E-03	1.8980E+22	6.2094E+21
Rb-86	2.0651E+01	2.5380E-07	1.7772E+18	3.1401E+17
Sr-89	1.0161E+03	3.4974E-05	2.3665E+20	7.3513E+18
Sr-90	1.3377E+02	9.8065E-04	6.5618E+21	9.6726E+17
Sr-91	1.0700E+03	2.9516E-07	1.9533E+18	8.3444E+18
Sr-92	7.3233E+02	5.8263E-08	3.8138E+17	6.9323E+18
Y-90	1.9608E+00	3.6041E-09	2.4116E+16	1.0118E+16
Y-91	1.2987E+01	5.2957E-07	3.5045E+18	9.3307E+16
Y-92	7.0873E+01	7.3654E-09	4.8213E+16	1.1083E+17
Y-93	1.2443E+01	3.7294E-09	2.4150E+16	9.6599E+16
Zr-95	1.5747E+01	7.3300E-07	4.6466E+18	1.1392E+17
Zr-97	1.3887E+01	7.2644E-09	4.5100E+16	1.0476E+17
Nb-95	1.5794E+01	4.0392E-07	2.5605E+18	1.1421E+17
Mo-99	1.9694E+02	4.1062E-07	2.4978E+18	1.4395E+18
Tc-99m	1.7768E+02	3.3791E-08	2.0555E+17	1.2817E+18
Ru-103	1.7477E+02	5.4151E-06	3.1660E+19	1.2647E+18
Ru-105	8.7165E+01	1.2967E-08	7.4371E+16	7.4184E+17
Ru-106	7.6134E+01	2.2757E-05	1.2929E+20	5.5056E+17
Rh-105	1.1643E+02	1.3794E-07	7.9116E+17	8.4441E+17

Sb-127	1.9753E+02	7.3967E-07	3.5074E+18	1.4394E+18
Sb-129	4.2933E+02	7.6347E-08	3.5641E+17	3.6707E+18
Te-127	1.9839E+02	7.5173E-08	3.5646E+17	1.4317E+18
Te-127m	3.4071E+01	3.6121E-06	1.7128E+19	2.4636E+17
Te-129	4.9587E+02	2.3678E-08	1.1054E+17	3.8381E+18
Te-129m	1.1226E+02	3.7265E-06	1.7397E+19	8.1179E+17
Te-131m	4.0049E+02	5.0224E-07	2.3088E+18	2.9657E+18
Te-132	2.9691E+03	9.7797E-06	4.4617E+19	2.1666E+19
I-131	4.2146E+04	3.3996E-04	1.5628E+21	1.4910E+20
I-132	5.4834E+04	5.3123E-06	2.4236E+19	2.1207E+20
I-133	8.1830E+04	7.2236E-05	3.2708E+20	3.0274E+20
I-134	1.6344E+04	6.1266E-07	2.7534E+18	2.0562E+20
I-135	6.5599E+04	1.8679E-05	8.3326E+19	2.7022E+20
Xe-133	1.4450E+08	7.7197E-01	3.4954E+24	2.1886E+22
Xe-135	5.8773E+07	2.3015E-02	1.0267E+23	9.1250E+21
Cs-134	2.2670E+03	1.7521E-03	7.8743E+21	3.4389E+19
Cs-136	6.7483E+02	9.2076E-06	4.0772E+19	1.0272E+19
Cs-137	1.8244E+03	2.0974E-02	9.2198E+22	2.7674E+19
Ba-139	5.0866E+02	3.1098E-08	1.3473E+17	6.3179E+18
Ba-140	1.5619E+03	2.1335E-05	9.1772E+19	1.1320E+19
La-140	2.7185E+01	4.8909E-08	2.1038E+17	1.2131E+17
La-141	9.8371E+00	1.7394E-09	7.4291E+15	8.5538E+16
La-142	5.1357E+00	3.5876E-10	1.5215E+15	6.0103E+16
Ce-141	3.7034E+01	1.2997E-06	5.5512E+18	2.6788E+17
Ce-143	3.4109E+01	5.1363E-08	2.1630E+17	2.5204E+17
Ce-144	2.9746E+01	9.3261E-06	3.9002E+19	2.1511E+17
Pr-143	1.3929E+01	2.0685E-07	8.7109E+17	1.0059E+17
Nd-147	5.7742E+00	7.1375E-08	2.9240E+17	4.1866E+16
Np-239	4.0984E+02	1.7666E-06	4.4513E+18	3.0012E+18
Pu-238	1.2011E-01	7.0160E-06	1.7753E+19	8.6851E+14
Pu-239	1.0523E-02	1.6929E-04	4.2657E+20	7.6077E+13
Pu-240	1.9704E-02	8.6473E-05	2.1698E+20	1.4248E+14
Pu-241	4.2469E+00	4.1227E-05	1.0302E+20	3.0709E+16
Am-241	2.8458E-03	8.2917E-07	2.0719E+18	2.0574E+13
Cm-242	7.2193E-01	2.1782E-07	5.4205E+17	5.2212E+15
Cm-244	4.7729E-02	5.8996E-07	1.4561E+18	3.4513E+14

DW Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	2.8172E+25	0.0000E+00	
Elemental I (atoms)	4.4293E+19	4.8566E+22	
Organic I (atoms)	1.4797E+21	0.0000E+00	
Aerosols (kg)	2.4245E-02	4.8963E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3657E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6888E-05
Total I (Ci)			2.6075E+05

DW to RB Transport Group Inventory:

Time (h) = 2.3000	Leakage Transport
Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5922E+18
Organic I (atoms)	1.1407E+18
Aerosols (kg)	1.6764E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3720E+17
Organic I (atoms)	0.0000E+00	5.4043E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3720E+17
Organic I (atoms)	0.0000E+00	5.4043E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	2.0659E-02	6.4970E-10	6.7458E+15	2.8865E+12
Co-60	2.4748E-02	2.1894E-08	2.1975E+17	3.4570E+12
Kr-85	9.3467E+02	2.3823E-03	1.6879E+22	8.7008E+16
Kr-85m	1.0793E+04	1.3115E-06	9.2916E+18	1.0862E+18
Kr-87	8.8257E+03	3.1158E-07	2.1568E+18	1.0999E+18
Kr-88	2.3921E+04	1.9077E-06	1.3055E+19	2.5227E+18
Rb-86	1.4792E+00	1.8179E-08	1.2730E+17	3.0871E+14
Sr-89	3.5009E+01	1.2050E-06	8.1537E+18	4.8919E+15
Sr-90	4.6090E+00	3.3789E-05	2.2609E+20	6.4381E+14
Sr-91	3.6866E+01	1.0170E-08	6.7302E+16	5.3860E+15
Sr-92	2.5233E+01	2.0075E-09	1.3140E+16	4.1421E+15
Y-90	1.0073E-01	1.8514E-10	1.2388E+15	1.0715E+13
Y-91	4.5293E-01	1.8469E-08	1.2222E+17	6.2753E+13
Y-92	5.9627E+00	6.1968E-10	4.0563E+15	5.3285E+14
Y-93	4.2871E-01	1.2850E-10	8.3208E+14	6.2465E+13
Zr-95	5.4257E-01	2.5256E-08	1.6010E+17	7.5809E+13
Zr-97	4.7848E-01	2.5030E-10	1.5539E+15	6.8537E+13
Nb-95	5.4420E-01	1.3917E-08	8.8221E+16	7.6014E+13
Mo-99	6.7855E+00	1.4148E-08	8.6061E+16	9.5392E+14
Tc-99m	6.1220E+00	1.1643E-09	7.0822E+15	8.5154E+14
Ru-103	6.0216E+00	1.8658E-07	1.0909E+18	8.4150E+14
Ru-105	3.0033E+00	4.4679E-10	2.5625E+15	4.6232E+14
Ru-106	2.6232E+00	7.8408E-07	4.4546E+18	3.6644E+14
Rh-105	4.0117E+00	4.7529E-09	2.7260E+16	5.6127E+14
Sb-127	6.8059E+00	2.5485E-08	1.2085E+17	9.5504E+14
Sb-129	1.4793E+01	2.6306E-09	1.2280E+16	2.2834E+15
Te-127	6.8355E+00	2.5901E-09	1.2282E+16	9.5194E+14
Te-127m	1.1739E+00	1.2446E-07	5.9015E+17	1.6398E+14
Te-129	1.7085E+01	8.1583E-10	3.8086E+15	2.4584E+15
Te-129m	3.8680E+00	1.2840E-07	5.9941E+17	5.4031E+14
Te-131m	1.3799E+01	1.7305E-08	7.9551E+16	1.9549E+15
Te-132	1.0230E+02	3.3696E-07	1.5373E+18	1.4367E+16
I-131	7.0027E+02	5.6485E-06	2.5966E+19	1.3886E+17
I-132	6.8136E+02	6.6010E-08	3.0115E+17	1.5725E+17
I-133	1.3604E+03	1.2009E-06	5.4377E+18	2.7688E+17
I-134	2.7172E+02	1.0186E-08	4.5775E+16	1.1815E+17
I-135	1.0906E+03	3.1055E-07	1.3853E+18	2.3649E+17
Xe-133	9.9306E+04	5.3053E-04	2.4022E+21	9.2635E+18
Xe-135	3.9572E+04	1.5496E-05	6.9124E+19	3.7645E+18
Cs-134	1.6238E+02	1.2550E-04	5.6402E+20	3.3843E+16
Cs-136	4.8337E+01	6.5952E-07	2.9204E+18	1.0094E+16
Cs-137	1.3068E+02	1.5023E-03	6.6039E+21	2.7235E+16
Ba-139	1.7526E+01	1.0715E-09	4.6421E+15	3.4004E+15
Ba-140	5.3815E+01	7.3509E-07	3.1620E+18	7.5276E+15
La-140	1.5500E+00	2.7887E-09	1.1996E+16	1.5454E+14
La-141	3.3894E-01	5.9933E-11	2.5597E+14	5.2854E+13
La-142	1.7695E-01	1.2361E-11	5.2423E+13	3.3086E+13
Ce-141	1.2757E+00	4.4770E-08	1.9121E+17	1.7824E+14
Ce-143	1.1752E+00	1.7697E-09	7.4528E+15	1.6628E+14
Ce-144	1.0249E+00	3.2133E-07	1.3438E+18	1.4317E+14
Pr-143	4.8095E-01	7.1423E-09	3.0078E+16	6.7073E+13
Nd-147	1.9895E-01	2.4593E-09	1.0075E+16	2.7835E+13
Np-239	1.4121E+01	6.0868E-08	1.5337E+17	1.9873E+15
Pu-238	4.1385E-03	2.4174E-07	6.1167E+17	5.7808E+11
Pu-239	3.6256E-04	5.8329E-06	1.4697E+19	5.0639E+10
Pu-240	6.7891E-04	2.9794E-06	7.4761E+18	9.4834E+10
Pu-241	1.4633E-01	1.4205E-06	3.5496E+18	2.0440E+13
Am-241	9.8065E-05	2.8572E-08	7.1397E+16	1.3696E+10
Cm-242	2.4874E-02	7.5052E-09	1.8676E+16	3.4749E+12
Cm-244	1.6445E-03	2.0327E-08	5.0169E+16	2.2971E+11

RB Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	1.9374E+22	0.0000E+00	
Elemental I (atoms)	1.5562E+18	0.0000E+00	
Organic I (atoms)	1.1254E+18	0.0000E+00	
Aerosols (kg)	1.6836E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8688E-08

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 3.5280E-08
Total I (Ci) 4.1044E+03

DW to RB Transport Group Inventory:
Time (h) = 2.3000 Leakage Transport

Noble gases (atoms) 1.9391E+22
Elemental I (atoms) 1.5922E+18
Organic I (atoms) 1.1407E+18
Aerosols (kg) 1.6764E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	1.7076E-10	5.3701E-18	5.5758E+07	1.5876E+04
Co-60	2.0456E-10	1.8096E-16	1.8163E+09	1.9016E+04
Kr-85	1.7302E-02	4.4101E-08	3.1245E+17	1.4499E+12
Kr-85m	1.9979E-01	2.4277E-11	1.7200E+14	1.7830E+13
Kr-87	1.6338E-01	5.7678E-12	3.9925E+13	1.7271E+13
Kr-88	4.4281E-01	3.5314E-11	2.4167E+14	4.1023E+13
Rb-86	2.5008E-08	3.0734E-16	2.1521E+09	3.5608E+06
Sr-89	2.8936E-07	9.9602E-15	6.7395E+10	2.6905E+07
Sr-90	3.8096E-08	2.7928E-13	1.8687E+12	3.5413E+06
Sr-91	3.0472E-07	8.4060E-17	5.5629E+08	2.9224E+07
Sr-92	2.0856E-07	1.6593E-17	1.0861E+08	2.1678E+07
Y-90	9.5161E-10	1.7491E-18	1.1704E+07	7.3362E+04
Y-91	3.7637E-09	1.5347E-16	1.0156E+09	3.4755E+05
Y-92	6.2112E-08	6.4549E-18	4.2253E+07	4.5272E+06
Y-93	3.5435E-09	1.0621E-18	6.8776E+06	3.3921E+05
Zr-95	4.4846E-09	2.0875E-16	1.3233E+09	4.1696E+05
Zr-97	3.9549E-09	2.0688E-18	1.2844E+07	3.7413E+05
Nb-95	4.4981E-09	1.1503E-16	7.2920E+08	4.1812E+05
Mo-99	5.6086E-08	1.1694E-16	7.1134E+08	5.2370E+06
Tc-99m	5.0602E-08	9.6234E-18	5.8539E+07	4.6812E+06
Ru-103	4.9772E-08	1.5422E-15	9.0166E+09	4.6281E+06
Ru-105	2.4824E-08	3.6929E-18	2.1180E+07	2.4684E+06
Ru-106	2.1682E-08	6.4809E-15	3.6820E+10	2.0156E+06
Rh-105	3.3159E-08	3.9285E-17	2.2531E+08	3.0854E+06
Sb-127	5.6255E-08	2.1065E-16	9.9887E+08	5.2460E+06
Sb-129	1.2227E-07	2.1743E-17	1.0150E+08	1.2181E+07
Te-127	5.6499E-08	2.1408E-17	1.0152E+08	5.2346E+06
Te-127m	9.7032E-09	1.0287E-15	4.8779E+09	9.0198E+05
Te-129	1.4122E-07	6.7433E-18	3.1480E+07	1.3302E+07
Te-129m	3.1971E-08	1.0613E-15	4.9544E+09	2.9720E+06
Te-131m	1.1406E-07	1.4303E-16	6.5753E+08	1.0707E+07
Te-132	8.4556E-07	2.7852E-15	1.2707E+10	7.8898E+07
I-131	7.8490E-04	6.3312E-12	2.9105E+13	1.0206E+11
I-132	6.6083E-04	6.4020E-14	2.9208E+11	9.9665E+10
I-133	1.5252E-03	1.3464E-12	6.0964E+12	2.0197E+11
I-134	3.0463E-04	1.1419E-14	5.1320E+10	6.8593E+10
I-135	1.2227E-03	3.4816E-13	1.5531E+12	1.6929E+11
Xe-133	1.8361E+00	9.8092E-09	4.4415E+16	1.5416E+14
Xe-135	7.1114E-01	2.7847E-10	1.2422E+15	6.0980E+13
Cs-134	2.7452E-06	2.1218E-12	9.5354E+12	3.9050E+08
Cs-136	8.1719E-07	1.1150E-14	4.9373E+10	1.1641E+08
Cs-137	2.2093E-06	2.5399E-11	1.1165E+14	3.1426E+08
Ba-139	1.4486E-07	8.8563E-18	3.8370E+07	1.6877E+07
Ba-140	4.4481E-07	6.0759E-15	2.6136E+10	4.1389E+07
La-140	1.5012E-08	2.7008E-17	1.1617E+08	1.1170E+06
La-141	2.8015E-09	4.9537E-19	2.1158E+06	2.8107E+05
La-142	1.4626E-09	1.0217E-19	4.3331E+05	1.6617E+05
Ce-141	1.0543E-08	3.7000E-16	1.5803E+09	9.8025E+05
Ce-143	9.7139E-09	1.4628E-17	6.1601E+07	9.1109E+05

Ce-144	8.4713E-09	2.6560E-15	1.1107E+10	7.8751E+05
Pr-143	3.9791E-09	5.9090E-17	2.4885E+08	3.6939E+05
Nd-147	1.6444E-09	2.0327E-17	8.3274E+07	1.5303E+05
Np-239	1.1672E-07	5.0311E-16	1.2677E+09	1.0907E+07
Pu-238	3.4207E-11	1.9981E-15	5.0558E+09	3.1798E+03
Pu-239	2.9967E-12	4.8212E-14	1.2148E+11	2.7855E+02
Pu-240	5.6116E-12	2.4627E-14	6.1794E+10	5.2164E+02
Pu-241	1.2095E-09	1.1741E-14	2.9339E+10	1.1243E+05
Am-241	8.1060E-13	2.3618E-16	5.9016E+08	7.5343E+01
Cm-242	2.0560E-10	6.2034E-17	1.5437E+08	1.9114E+04
Cm-244	1.3593E-11	1.6802E-16	4.1468E+08	1.2636E+03

CR Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump		
Noble gases (atoms)	3.5856E+17	0.0000E+00		
Elemental I (atoms)	2.8683E+13	0.0000E+00		
Organic I (atoms)	7.9288E+12	0.0000E+00		
Aerosols (kg)	2.8039E-11	0.0000E+00		
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7707E-13	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6270E-13	
Total I (Ci)			4.4983E-03	

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5257E+17
Elemental I (atoms)	0.0000E+00	5.0318E+13
Organic I (atoms)	0.0000E+00	1.1543E+13
Aerosols (kg)	0.0000E+00	4.8802E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.7904E+17
Elemental I (atoms)	1.1098E+14	3.4325E+12
Organic I (atoms)	2.7574E+13	8.5280E+11
Aerosols (kg)	1.0746E-10	3.3236E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	1.7278E+17	0.0000E+00
Elemental I (atoms)	2.4532E+13	0.0000E+00
Organic I (atoms)	4.3710E+12	0.0000E+00
Aerosols (kg)	2.4084E-11	0.0000E+00

EAB Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.0094E-03	1.0554E-02	3.3432E-03
Accumulated dose (rem)	3.0017E-02	1.5369E-01	3.4885E-02

LPZ Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.3625E-04	1.1792E-03	3.7354E-04
Accumulated dose (rem)	3.3538E-03	1.7172E-02	3.8978E-03

CR Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3106E-03	5.1706E-02	2.9453E-03
Accumulated dose (rem)	9.5470E-03	5.3639E-01	2.6527E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	4.4412E-01	1.3967E-08	1.4502E+17	4.3433E+15
Co-60	5.3206E-01	4.7069E-07	4.7242E+18	5.2009E+15

Kr-85	1.3587E+06	3.4631E+00	2.4536E+25	2.2335E+20
Kr-85m	1.5448E+07	1.8772E-03	1.3299E+22	2.8387E+21
Kr-87	1.2149E+07	4.2891E-04	2.9689E+21	3.0340E+21
Kr-88	3.3935E+07	2.7063E-03	1.8520E+22	6.6670E+21
Rb-86	1.5295E+01	1.8797E-07	1.3163E+18	3.1422E+17
Sr-89	7.5260E+02	2.5905E-05	1.7528E+20	7.3614E+18
Sr-90	9.9088E+01	7.2641E-04	4.8606E+21	9.6858E+17
Sr-91	7.8681E+02	2.1705E-07	1.4364E+18	8.3549E+18
Sr-92	5.2877E+02	4.2068E-08	2.7537E+17	6.9394E+18
Y-90	1.5582E+00	2.8640E-09	1.9164E+16	1.0137E+16
Y-91	9.6360E+00	3.9292E-07	2.6003E+18	9.3435E+16
Y-92	6.1968E+01	6.4400E-09	4.2155E+16	1.1153E+17
Y-93	9.1537E+00	2.7437E-09	1.7766E+16	9.6722E+16
Zr-95	1.1664E+01	5.4294E-07	3.4418E+18	1.1407E+17
Zr-97	1.0245E+01	5.3590E-09	3.3271E+16	1.0490E+17
Nb-95	1.1700E+01	2.9920E-07	1.8966E+18	1.1436E+17
Mo-99	1.4573E+02	3.0384E-07	1.8483E+18	1.4415E+18
Tc-99m	1.3159E+02	2.5025E-08	1.5223E+17	1.2835E+18
Ru-103	1.2945E+02	4.0109E-06	2.3451E+19	1.2664E+18
Ru-105	6.3567E+01	9.4565E-09	5.4237E+16	7.4269E+17
Ru-106	5.6395E+01	1.6857E-05	9.5767E+19	5.5131E+17
Rh-105	8.6203E+01	1.0213E-07	5.8575E+17	8.4556E+17
Sb-127	1.4621E+02	5.4749E-07	2.5961E+18	1.4413E+18
Sb-129	3.1296E+02	5.5653E-08	2.5981E+17	3.6749E+18
Te-127	1.4694E+02	5.5679E-08	2.6402E+17	1.4336E+18
Te-127m	2.5238E+01	2.6756E-06	1.2687E+19	2.4670E+17
Te-129	3.6375E+02	1.7369E-08	8.1086E+16	3.8429E+18
Te-129m	8.3157E+01	2.7604E-06	1.2886E+19	8.1289E+17
Te-131m	2.9597E+02	3.7117E-07	1.7063E+18	2.9697E+18
Te-132	2.1974E+03	7.2379E-06	3.3021E+19	2.1695E+19
I-131	3.9528E+04	3.1884E-04	1.4657E+21	1.4963E+20
I-132	4.9985E+04	4.8425E-06	2.2092E+19	2.1275E+20
I-133	7.6518E+04	6.7547E-05	3.0585E+20	3.0376E+20
I-134	1.4168E+04	5.3111E-07	2.3869E+18	2.0581E+20
I-135	6.0904E+04	1.7342E-05	7.7361E+19	2.7104E+20
Xe-133	1.4441E+08	7.7147E-01	3.4932E+24	2.3810E+22
Xe-135	5.8321E+07	2.2838E-02	1.0188E+23	9.9048E+21
Cs-134	1.6792E+03	1.2979E-03	5.8328E+21	3.4412E+19
Cs-136	4.9977E+02	6.8190E-06	3.0195E+19	1.0278E+19
Cs-137	1.3514E+03	1.5537E-02	6.8295E+22	2.7692E+19
Ba-139	3.5831E+02	2.1906E-08	9.4905E+16	6.3228E+18
Ba-140	1.1567E+03	1.5800E-05	6.7964E+19	1.1336E+19
La-140	2.2094E+01	3.9749E-08	1.7098E+17	1.2158E+17
La-141	7.1594E+00	1.2659E-09	5.4069E+15	8.5635E+16
La-142	3.6370E+00	2.5407E-10	1.0775E+15	6.0153E+16
Ce-141	2.7431E+01	9.6271E-07	4.1118E+18	2.6825E+17
Ce-143	2.5213E+01	3.7967E-08	1.5989E+17	2.5238E+17
Ce-144	2.2034E+01	6.9082E-06	2.8890E+19	2.1540E+17
Pr-143	1.0321E+01	1.5327E-07	6.4545E+17	1.0072E+17
Nd-147	4.2761E+00	5.2857E-08	2.1654E+17	4.1923E+16
Np-239	3.0321E+02	1.3070E-06	3.2933E+18	3.0052E+18
Pu-238	8.8972E-02	5.1971E-06	1.3150E+19	8.6969E+14
Pu-239	7.7946E-03	1.2540E-04	3.1598E+20	7.6180E+13
Pu-240	1.4596E-02	6.4054E-05	1.6073E+20	1.4267E+14
Pu-241	3.1459E+00	3.0539E-05	7.6311E+19	3.0751E+16
Am-241	2.1081E-03	6.1422E-07	1.5348E+18	2.0602E+13
Cm-242	5.3476E-01	1.6135E-07	4.0151E+17	5.2283E+15
Cm-244	3.5355E-02	4.3701E-07	1.0786E+18	3.4560E+14

DW Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.8166E+25	0.0000E+00	
Elemental I (atoms)	4.4213E+19	4.8566E+22	
Organic I (atoms)	1.4771E+21	0.0000E+00	
Aerosols (kg)	1.7959E-02	4.8970E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.2793E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5795E-05
Total I (Ci)			2.4110E+05

DW to RB Transport Group Inventory:

Time (h) = 2.4000 Leakage Transport

```
Noble gases (atoms)      2.1152E+22
Elemental I (atoms)      1.5950E+18
Organic I (atoms)        1.2331E+18
Aerosols (kg)            1.6777E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.6038E+21
Elemental I (atoms)    0.0000E+00  8.3805E+17
Organic I (atoms)      0.0000E+00  5.6872E+17
Aerosols (kg)          0.0000E+00  8.8234E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =   2.4000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.6038E+21
Elemental I (atoms)    0.0000E+00  8.3805E+17
Organic I (atoms)      0.0000E+00  5.6872E+17
Aerosols (kg)          0.0000E+00  8.8234E-04

RB Compartment Nuclide Inventory:

Time (h) =   2.4000       Ci           kg         Atoms      Decay
Co-58                  2.0691E-02  6.5069E-10  6.7561E+15  3.1621E+12
Co-60                  2.4787E-02  2.1928E-08  2.2009E+17  3.7872E+12
Kr-85                  1.0196E+03  2.5988E-03  1.8412E+22  1.0059E+17
Kr-85m                 1.1593E+04  1.4087E-06  9.9802E+18  1.2418E+18
Kr-87                  9.1169E+03  3.2186E-07  2.2279E+18  1.2247E+18
Kr-88                  2.5465E+04  2.0308E-06  1.3898E+19  2.8661E+18
Rb-86                  1.4801E+00  1.8190E-08  1.2738E+17  3.2843E+14
Sr-89                  3.5061E+01  1.2068E-06  8.1660E+18  5.3589E+15
Sr-90                  4.6162E+00  3.3842E-05  2.2644E+20  7.0530E+14
Sr-91                  3.6655E+01  1.0112E-08  6.6917E+16  5.8760E+15
Sr-92                  2.4634E+01  1.9598E-09  1.2829E+16  4.4745E+15
Y-90                   1.0572E-01  1.9432E-10  1.3002E+15  1.2058E+13
Y-91                   4.5437E-01  1.8528E-08  1.2261E+17  6.8795E+13
Y-92                   6.3394E+00  6.5883E-10  4.3125E+15  6.1155E+14
Y-93                   4.2645E-01  1.2782E-10  8.2769E+14  6.8165E+13
Zr-95                  5.4339E-01  2.5294E-08  1.6034E+17  8.3047E+13
Zr-97                  4.7727E-01  2.4966E-10  1.5500E+15  7.4907E+13
Nb-95                  5.4505E-01  1.3939E-08  8.8359E+16  8.3274E+13
Mo-99                  6.7890E+00  1.4155E-08  8.6105E+16  1.0444E+15
Tc-99m                 6.1302E+00  1.1658E-09  7.0918E+15  9.3274E+14
Ru-103                 6.0306E+00  1.8686E-07  1.0925E+18  9.2183E+14
Ru-105                 2.9614E+00  4.4055E-10  2.5267E+15  5.0208E+14
Ru-106                 2.6273E+00  7.8531E-07  4.4615E+18  4.0144E+14
Rh-105                 4.0160E+00  4.7579E-09  2.7289E+16  6.1474E+14
Sb-127                 6.8115E+00  2.5506E-08  1.2095E+17  1.0458E+15
Sb-129                 1.4580E+01  2.5927E-09  1.2104E+16  2.4792E+15
Te-127                 6.8456E+00  2.5939E-09  1.2300E+16  1.0428E+15
Te-127m                1.1758E+00  1.2465E-07  5.9107E+17  1.7964E+14
Te-129                 1.6946E+01  8.0919E-10  3.7776E+15  2.6796E+15
Te-129m                3.8740E+00  1.2860E-07  6.0034E+17  5.9191E+14
Te-131m                1.3789E+01  1.7292E-08  7.9491E+16  2.1388E+15
Te-132                 1.0237E+02  3.3719E-07  1.5383E+18  1.5731E+16
I-131                  7.0257E+02  5.6671E-06  2.6052E+19  1.4822E+17
I-132                  6.6744E+02  6.4661E-08  2.9500E+17  1.6624E+17
I-133                  1.3608E+03  1.2013E-06  5.4393E+18  2.9503E+17
I-134                  2.5197E+02  9.4455E-09  4.2449E+16  1.2164E+17
I-135                  1.0831E+03  3.0843E-07  1.3758E+18  2.5099E+17
Xe-133                 1.0828E+05  5.7846E-04  2.6192E+21  1.0706E+19
Xe-135                 4.2923E+04  1.6808E-05  7.4979E+19  4.3383E+18
Cs-134                 1.6250E+02  1.2559E-04  5.6444E+20  3.6007E+16
Cs-136                 4.8362E+01  6.5987E-07  2.9219E+18  1.0738E+16
Cs-137                 1.3078E+02  1.5035E-03  6.6089E+21  2.8977E+16
Ba-139                 1.6693E+01  1.0205E-09  4.4214E+15  3.6285E+15
Ba-140                 5.3887E+01  7.3608E-07  3.1663E+18  8.2454E+15
La-140                 1.6416E+00  2.9534E-09  1.2704E+16  1.7519E+14
La-141                 3.3354E-01  5.8977E-11  2.5189E+14  5.7336E+13
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La-142	1.6944E-01	1.1836E-11	5.0197E+13	3.5394E+13
Ce-141	1.2776E+00	4.4838E-08	1.9150E+17	1.9526E+14
Ce-143	1.1746E+00	1.7688E-09	7.4488E+15	1.8194E+14
Ce-144	1.0265E+00	3.2183E-07	1.3459E+18	1.5684E+14
Pr-143	4.8185E-01	7.1557E-09	3.0134E+16	7.3488E+13
Nd-147	1.9921E-01	2.4625E-09	1.0088E+16	3.0489E+13
Np-239	1.4126E+01	6.0889E-08	1.5342E+17	2.1756E+15
Pu-238	4.1450E-03	2.4212E-07	6.1263E+17	6.3329E+11
Pu-239	3.6313E-04	5.8422E-06	1.4721E+19	5.5476E+10
Pu-240	6.7998E-04	2.9841E-06	7.4878E+18	1.0389E+11
Pu-241	1.4656E-01	1.4227E-06	3.5551E+18	2.2392E+13
Am-241	9.8221E-05	2.8618E-08	7.1511E+16	1.5004E+10
Cm-242	2.4913E-02	7.5168E-09	1.8705E+16	3.8068E+12
Cm-244	1.6471E-03	2.0359E-08	5.0248E+16	2.5165E+11

RB Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.1132E+22	0.0000E+00	
Elemental I (atoms)	1.5565E+18	0.0000E+00	
Organic I (atoms)	1.2160E+18	0.0000E+00	
Aerosols (kg)	1.6849E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8749E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5308E-08
Total I (Ci)			4.0660E+03

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport
Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5950E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6777E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	1.7744E-10	5.5801E-18	5.7938E+07	1.8240E+04
Co-60	2.1257E-10	1.8805E-16	1.8874E+09	2.1847E+04
Kr-85	1.8461E-02	4.7054E-08	3.3337E+17	1.6958E+12
Kr-85m	2.0990E-01	2.5505E-11	1.8070E+14	2.0647E+13
Kr-87	1.6507E-01	5.8276E-12	4.0339E+13	1.9531E+13
Kr-88	4.6107E-01	3.6770E-11	2.5163E+14	4.7240E+13
Rb-86	2.5043E-08	3.0778E-16	2.1552E+09	3.8944E+06
Sr-89	3.0068E-07	1.0350E-14	7.0029E+10	3.0910E+07
Sr-90	3.9587E-08	2.9022E-13	1.9419E+12	4.0686E+06
Sr-91	3.1434E-07	8.6716E-17	5.7386E+08	3.3426E+07
Sr-92	2.1125E-07	1.6807E-17	1.1002E+08	2.4528E+07
Y-90	1.0246E-09	1.8832E-18	1.2601E+07	8.6445E+04
Y-91	3.9164E-09	1.5970E-16	1.0568E+09	3.9963E+05
Y-92	6.6838E-08	6.9461E-18	4.5468E+07	5.3699E+06
Y-93	3.6571E-09	1.0961E-18	7.0980E+06	3.8809E+05
Zr-95	4.6600E-09	2.1692E-16	1.3750E+09	4.7903E+05
Zr-97	4.0930E-09	2.1410E-18	1.3292E+07	4.2876E+05
Nb-95	4.6742E-09	1.1954E-16	7.5775E+08	4.8038E+05
Mo-99	5.8221E-08	1.2139E-16	7.3841E+08	6.0129E+06
Tc-99m	5.2571E-08	9.9979E-18	6.0817E+07	5.3776E+06
Ru-103	5.1716E-08	1.6024E-15	9.3689E+09	5.3170E+06
Ru-105	2.5396E-08	3.7781E-18	2.1669E+07	2.8094E+06
Ru-106	2.2531E-08	6.7346E-15	3.8261E+10	2.3157E+06
Rh-105	3.4440E-08	4.0803E-17	2.3402E+08	3.5439E+06
Sb-127	5.8413E-08	2.1873E-16	1.0372E+09	6.0244E+06
Sb-129	1.2503E-07	2.2235E-17	1.0380E+08	1.3860E+07
Te-127	5.8706E-08	2.2245E-17	1.0548E+08	6.0137E+06

Te-127m	1.0083E-08	1.0690E-15	5.0689E+09	1.0363E+06
Te-129	1.4533E-07	6.9394E-18	3.2395E+07	1.5200E+07
Te-129m	3.3223E-08	1.1028E-15	5.1483E+09	3.4145E+06
Te-131m	1.1825E-07	1.4829E-16	6.8170E+08	1.2284E+07
Te-132	8.7789E-07	2.8917E-15	1.3192E+10	9.0597E+07
I-131	7.9555E-04	6.4170E-12	2.9499E+13	1.1266E+11
I-132	6.5391E-04	6.3350E-14	2.8902E+11	1.0851E+11
I-133	1.5413E-03	1.3606E-12	6.1606E+12	2.2254E+11
I-134	2.8539E-04	1.0698E-14	4.8078E+10	7.2548E+10
I-135	1.2268E-03	3.4932E-13	1.5583E+12	1.8571E+11
Xe-133	1.9581E+00	1.0461E-08	4.7366E+16	1.8025E+14
Xe-135	7.5425E-01	2.9535E-10	1.3175E+15	7.1065E+13
Cs-134	2.7495E-06	2.1251E-12	9.5504E+12	4.2713E+08
Cs-136	8.1830E-07	1.1165E-14	4.9440E+10	1.2731E+08
Cs-137	2.2127E-06	2.5439E-11	1.1182E+14	3.4373E+08
Ba-139	1.4315E-07	8.7517E-18	3.7916E+07	1.8832E+07
Ba-140	4.6212E-07	6.3124E-15	2.7153E+10	4.7545E+07
La-140	1.6256E-08	2.9246E-17	1.2580E+08	1.3231E+06
La-141	2.8603E-09	5.0577E-19	2.1602E+06	3.1951E+05
La-142	1.4530E-09	1.0150E-19	4.3047E+05	1.8596E+05
Ce-141	1.0955E-08	3.8447E-16	1.6421E+09	1.1262E+06
Ce-143	1.0073E-08	1.5168E-17	6.3879E+07	1.0454E+06
Ce-144	8.8029E-09	2.7600E-15	1.1542E+10	9.0477E+05
Pr-143	4.1359E-09	6.1420E-17	2.5866E+08	4.2446E+05
Nd-147	1.7084E-09	2.1117E-17	8.6511E+07	1.7579E+05
Np-239	1.2114E-07	5.2217E-16	1.3157E+09	1.2521E+07
Pu-238	3.5546E-11	2.0763E-15	5.2537E+09	3.6533E+03
Pu-239	3.1141E-12	5.0101E-14	1.2624E+11	3.2003E+02
Pu-240	5.8313E-12	2.5591E-14	6.4213E+10	5.9932E+02
Pu-241	1.2568E-09	1.2201E-14	3.0488E+10	1.2917E+05
Am-241	8.4236E-13	2.4543E-16	6.1328E+08	8.6563E+01
Cm-242	2.1365E-10	6.4462E-17	1.6041E+08	2.1959E+04
Cm-244	1.4125E-11	1.7459E-16	4.3091E+08	1.4517E+03

CR Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	3.8253E+17	0.0000E+00	
Elemental I (atoms)	2.8743E+13	0.0000E+00	
Organic I (atoms)	8.3251E+12	0.0000E+00	
Aerosols (kg)	2.8098E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8175E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6784E-13
Total I (Ci)			4.5029E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6823E+17
Elemental I (atoms)	0.0000E+00	5.2640E+13
Organic I (atoms)	0.0000E+00	1.2553E+13
Aerosols (kg)	0.0000E+00	5.1028E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.1819E+17
Elemental I (atoms)	1.1662E+14	3.6067E+12
Organic I (atoms)	3.0023E+13	9.2855E+11
Aerosols (kg)	1.1286E-10	3.4906E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	2.0358E+17	0.0000E+00
Elemental I (atoms)	2.6921E+13	0.0000E+00
Organic I (atoms)	5.0471E+12	0.0000E+00
Aerosols (kg)	2.6418E-11	0.0000E+00

EAB Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.2159E-02	7.3132E-02	2.4470E-02
Accumulated dose (rem)	5.2176E-02	2.2683E-01	5.9355E-02

LPZ Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.4759E-03	8.1711E-03	2.7340E-03
Accumulated dose (rem)	5.8297E-03	2.5344E-02	6.6318E-03

CR Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	9.2600E-03	3.3031E-01	1.9694E-02
Accumulated dose (rem)	1.8807E-02	8.6669E-01	4.6221E-02

DW Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	7.3351E-02	2.3068E-09	2.3951E+16	4.3574E+15
Co-60	8.7895E-02	7.7756E-08	7.8043E+17	5.2178E+15
Kr-85	1.3579E+06	3.4611E+00	2.4521E+25	3.3190E+20
Kr-85m	1.4070E+07	1.7097E-03	1.2113E+22	4.0173E+21
Kr-87	8.7549E+06	3.0908E-04	2.1394E+21	3.8619E+21
Kr-88	2.9294E+07	2.3362E-03	1.5988E+22	9.1890E+21
Rb-86	2.5243E+00	3.1024E-08	2.1724E+17	3.1470E+17
Sr-89	1.2429E+02	4.2780E-06	2.8947E+19	7.3853E+18
Sr-90	1.6369E+01	1.2000E-04	8.0297E+20	9.7173E+17
Sr-91	1.2441E+02	3.4321E-08	2.2713E+17	8.3795E+18
Sr-92	7.4925E+01	5.9609E-09	3.9019E+16	6.9553E+18
Y-90	3.6183E-01	6.6506E-10	4.4501E+15	1.0192E+16
Y-91	1.6072E+00	6.5536E-08	4.3370E+17	9.3742E+16
Y-92	1.8153E+01	1.8866E-09	1.2349E+16	1.1392E+17
Y-93	1.4512E+00	4.3497E-10	2.8166E+15	9.7008E+16
Zr-95	1.9264E+00	8.9669E-08	5.6842E+17	1.1444E+17
Zr-97	1.6513E+00	8.6379E-10	5.3627E+15	1.0522E+17
Nb-95	1.9327E+00	4.9427E-08	3.1332E+17	1.1473E+17
Mo-99	2.3923E+01	4.9879E-08	3.0341E+17	1.4461E+18
Tc-99m	2.1705E+01	4.1277E-09	2.5109E+16	1.2876E+18
Ru-103	2.1375E+01	6.6230E-07	3.8723E+18	1.2705E+18
Ru-105	9.5622E+00	1.4225E-09	8.1587E+15	7.4464E+17
Ru-106	9.3160E+00	2.7846E-06	1.5820E+19	5.5310E+17
Rh-105	1.4191E+01	1.6813E-08	9.6431E+16	8.4829E+17
Sb-127	2.4045E+01	9.0039E-08	4.2695E+17	1.4460E+18
Sb-129	4.6956E+01	8.3501E-09	3.8981E+16	3.6845E+18
Te-127	2.4260E+01	9.1925E-09	4.3589E+16	1.4383E+18
Te-127m	4.1693E+00	4.4201E-07	2.0960E+18	2.4750E+17
Te-129	5.6505E+01	2.6981E-09	1.2596E+16	3.8539E+18
Te-129m	1.3736E+01	4.5596E-07	2.1286E+18	8.1554E+17
Te-131m	4.8221E+01	6.0473E-08	2.7800E+17	2.9790E+18
Te-132	3.6108E+02	1.1893E-06	5.4261E+18	2.1765E+19
I-131	3.3235E+04	2.6808E-04	1.2324E+21	1.5242E+20
I-132	3.5284E+04	3.4183E-06	1.5595E+19	2.1600E+20
I-133	6.3198E+04	5.5789E-05	2.5261E+20	3.0913E+20
I-134	7.4287E+03	2.7847E-07	1.2515E+18	2.0662E+20
I-135	4.8189E+04	1.3722E-05	6.1210E+19	2.7522E+20
Xe-133	1.4384E+08	7.6846E-01	3.4795E+24	3.5328E+22
Xe-135	5.5682E+07	2.1804E-02	9.7264E+22	1.4459E+22
Cs-134	2.7740E+02	2.1440E-04	9.6355E+20	3.4465E+19
Cs-136	8.2452E+01	1.1250E-06	4.9815E+18	1.0294E+19
Cs-137	2.2325E+02	2.5666E-03	1.1282E+22	2.7735E+19
Ba-139	4.3775E+01	2.6762E-09	1.1595E+16	6.3330E+18
Ba-140	1.9083E+02	2.6066E-06	1.1212E+19	1.1372E+19
La-140	5.5759E+00	1.0032E-08	4.3152E+16	1.2238E+17
La-141	1.0640E+00	1.8813E-10	8.0352E+14	8.5854E+16
La-142	4.5876E-01	3.2048E-11	1.3591E+14	6.0258E+16
Ce-141	4.5297E+00	1.5898E-07	6.7899E+17	2.6912E+17
Ce-143	4.1130E+00	6.1935E-09	2.6083E+16	2.5317E+17
Ce-144	3.6397E+00	1.1412E-06	4.7724E+18	2.1610E+17
Pr-143	1.7081E+00	2.5366E-08	1.0682E+17	1.0105E+17
Nd-147	7.0529E-01	8.7181E-09	3.5716E+16	4.2058E+16

Np-239	4.9723E+01	2.1433E-07	5.4005E+17	3.0148E+18
Pu-238	1.4698E-02	8.5856E-07	2.1724E+18	8.7252E+14
Pu-239	1.2878E-03	2.0718E-05	5.2203E+19	7.6428E+13
Pu-240	2.4112E-03	1.0582E-05	2.6552E+19	1.4314E+14
Pu-241	5.1970E-01	5.0450E-06	1.2606E+19	3.0851E+16
Am-241	3.4831E-04	1.0148E-07	2.5359E+17	2.0669E+13
Cm-242	8.8332E-02	2.6652E-08	6.6323E+16	5.2453E+15
Cm-244	5.8406E-03	7.2193E-08	1.7818E+17	3.4672E+14

DW Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8128E+25	0.0000E+00	
Elemental I (atoms)	4.3752E+19	4.8566E+22	
Organic I (atoms)	1.4617E+21	0.0000E+00	
Aerosols (kg)	2.9667E-03	4.8985E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0681E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3075E-05
Total I (Ci)			1.8733E+05

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4310E+17
Organic I (atoms)	0.0000E+00	7.3742E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4310E+17
Organic I (atoms)	0.0000E+00	7.3742E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

RB Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.0763E-02	6.5296E-10	6.7796E+15	4.8199E+12
Co-60	2.4879E-02	2.2010E-08	2.2091E+17	5.7735E+12
Kr-85	1.5290E+03	3.8971E-03	2.7610E+22	2.0582E+17
Kr-85m	1.5843E+04	1.9251E-06	1.3639E+19	2.3812E+18
Kr-87	9.8578E+03	3.4802E-07	2.4090E+18	2.0191E+18
Kr-88	3.2985E+04	2.6305E-06	1.8002E+19	5.2998E+18
Rb-86	1.4814E+00	1.8206E-08	1.2749E+17	4.4681E+14
Sr-89	3.5180E+01	1.2109E-06	8.1937E+18	8.1681E+15
Sr-90	4.6334E+00	3.3968E-05	2.2729E+20	1.0752E+15
Sr-91	3.5216E+01	9.7148E-09	6.4290E+16	8.7500E+15
Sr-92	2.1208E+01	1.6873E-09	1.1045E+16	6.3044E+15
Y-90	1.3533E-01	2.4875E-10	1.6644E+15	2.1495E+13
Y-91	4.6039E-01	1.8773E-08	1.2424E+17	1.0535E+14
Y-92	8.2083E+00	8.5305E-10	5.5839E+15	1.1792E+15
Y-93	4.1077E-01	1.2312E-10	7.9726E+14	1.0164E+14
Zr-95	5.4527E-01	2.5382E-08	1.6090E+17	1.2659E+14
Zr-97	4.6741E-01	2.4450E-10	1.5180E+15	1.1269E+14
Nb-95	5.4708E-01	1.3991E-08	8.8689E+16	1.2695E+14
Mo-99	6.7715E+00	1.4119E-08	8.5884E+16	1.5867E+15
Tc-99m	6.1437E+00	1.1684E-09	7.1073E+15	1.4209E+15
Ru-103	6.0504E+00	1.8747E-07	1.0961E+18	1.4050E+15
Ru-105	2.7067E+00	4.0266E-10	2.3094E+15	7.2861E+14
Ru-106	2.6370E+00	7.8820E-07	4.4780E+18	6.1197E+14
Rh-105	4.0170E+00	4.7592E-09	2.7296E+16	9.3580E+14

Sb-127	6.8062E+00	2.5486E-08	1.2085E+17	1.5904E+15
Sb-129	1.3291E+01	2.3636E-09	1.1034E+16	3.5931E+15
Te-127	6.8670E+00	2.6020E-09	1.2338E+16	1.5892E+15
Te-127m	1.1802E+00	1.2512E-07	5.9328E+17	2.7386E+14
Te-129	1.5994E+01	7.6373E-10	3.5654E+15	3.9652E+15
Te-129m	3.8881E+00	1.2906E-07	6.0251E+17	9.0234E+14
Te-131m	1.3650E+01	1.7117E-08	7.8690E+16	3.2361E+15
Te-132	1.0221E+02	3.3666E-07	1.5359E+18	2.3913E+16
I-131	7.1438E+02	5.7623E-06	2.6490E+19	2.0494E+17
I-132	5.8831E+02	5.6995E-08	2.6003E+17	2.1634E+17
I-133	1.3592E+03	1.1998E-06	5.4327E+18	4.0393E+17
I-134	1.5977E+02	5.9890E-09	2.6915E+16	1.3785E+17
I-135	1.0364E+03	2.9511E-07	1.3164E+18	3.3583E+17
Xe-133	1.6188E+05	8.6484E-04	3.9159E+21	2.1864E+19
Xe-135	6.1931E+04	2.4251E-05	1.0818E+20	8.6829E+18
Cs-134	1.6279E+02	1.2582E-04	5.6544E+20	4.9011E+16
Cs-136	4.8385E+01	6.6018E-07	2.9233E+18	1.4606E+16
Cs-137	1.3101E+02	1.5062E-03	6.6207E+21	3.9442E+16
Ba-139	1.2391E+01	7.5753E-10	3.2820E+15	4.7831E+15
Ba-140	5.4015E+01	7.3782E-07	3.1738E+18	1.2561E+16
La-140	2.1843E+00	3.9299E-09	1.6904E+16	3.2446E+14
La-141	3.0116E-01	5.3253E-11	2.2744E+14	8.2698E+13
La-142	1.2986E-01	9.0714E-12	3.8471E+13	4.7294E+13
Ce-141	1.2818E+00	4.4987E-08	1.9214E+17	2.9762E+14
Ce-143	1.1642E+00	1.7531E-09	7.3829E+15	2.7548E+14
Ce-144	1.0303E+00	3.2302E-07	1.3509E+18	2.3910E+14
Pr-143	4.8453E-01	7.1953E-09	3.0302E+16	1.1213E+14
Nd-147	1.9964E-01	2.4678E-09	1.0110E+16	4.6440E+13
Np-239	1.4075E+01	6.0668E-08	1.5287E+17	3.3034E+15
Pu-238	4.1604E-03	2.4302E-07	6.1492E+17	9.6545E+11
Pu-239	3.6451E-04	5.8644E-06	1.4777E+19	8.4576E+10
Pu-240	6.8251E-04	2.9952E-06	7.5157E+18	1.5838E+11
Pu-241	1.4711E-01	1.4280E-06	3.5684E+18	3.4137E+13
Am-241	9.8604E-05	2.8729E-08	7.1789E+16	2.2876E+10
Cm-242	2.5003E-02	7.5440E-09	1.8773E+16	5.8031E+12
Cm-244	1.6532E-03	2.0435E-08	5.0435E+16	3.8364E+11

RB Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	3.1669E+22	0.0000E+00	
Elemental I (atoms)	1.5586E+18	0.0000E+00	
Organic I (atoms)	1.7533E+18	0.0000E+00	
Aerosols (kg)	1.6879E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.9035E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5399E-08
Total I (Ci)			3.8580E+03

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.2629E-10	7.1165E-18	7.3891E+07	3.4620E+04
Co-60	2.7116E-10	2.3988E-16	2.4077E+09	4.1473E+04
Kr-85	2.8264E-02	7.2040E-08	5.1039E+17	3.5968E+12
Kr-85m	2.9286E-01	3.5587E-11	2.5213E+14	4.1222E+13
Kr-87	1.8223E-01	6.4333E-12	4.4531E+13	3.3865E+13

Kr-88	6.0974E-01	4.8627E-11	3.3277E+14	9.1182E+13
Rb-86	2.6233E-08	3.2240E-16	2.2576E+09	5.9423E+06
Sr-89	3.8343E-07	1.3198E-14	8.9302E+10	5.8667E+07
Sr-90	5.0500E-08	3.7021E-13	2.4772E+12	7.7237E+06
Sr-91	3.8382E-07	1.0588E-16	7.0069E+08	6.1798E+07
Sr-92	2.3115E-07	1.8390E-17	1.2037E+08	4.2555E+07
Y-90	1.5838E-09	2.9110E-18	1.9478E+07	1.8917E+05
Y-91	5.0361E-09	2.0536E-16	1.3590E+09	7.6240E+05
Y-92	9.9742E-08	1.0366E-17	6.7852E+07	1.1911E+07
Y-93	4.4770E-09	1.3419E-18	8.6893E+06	7.1861E+05
Zr-95	5.9429E-09	2.7663E-16	1.7536E+09	9.0922E+05
Zr-97	5.0943E-09	2.6648E-18	1.6544E+07	8.0186E+05
Nb-95	5.9626E-09	1.5248E-16	9.6661E+08	9.1192E+05
Mo-99	7.3803E-08	1.5388E-16	9.3604E+08	1.1371E+07
Tc-99m	6.6960E-08	1.2734E-17	7.7462E+07	1.0200E+07
Ru-103	6.5943E-08	2.0432E-15	1.1946E+10	1.0091E+07
Ru-105	2.9500E-08	4.3885E-18	2.5170E+07	5.0435E+06
Ru-106	2.8740E-08	8.5905E-15	4.8805E+10	4.3959E+06
Rh-105	4.3781E-08	5.1870E-17	2.9749E+08	6.7160E+06
Sb-127	7.4180E-08	2.7777E-16	1.3172E+09	1.1405E+07
Sb-129	1.4486E-07	2.5760E-17	1.2026E+08	2.4845E+07
Te-127	7.4843E-08	2.8359E-17	1.3447E+08	1.1413E+07
Te-127m	1.2863E-08	1.3636E-15	6.4661E+09	1.9672E+06
Te-129	1.7432E-07	8.3239E-18	3.8859E+07	2.7886E+07
Te-129m	4.2376E-08	1.4067E-15	6.5667E+09	6.4817E+06
Te-131m	1.4877E-07	1.8656E-16	8.5763E+08	2.3123E+07
Te-132	1.1139E-06	3.6692E-15	1.6740E+10	1.7143E+08
I-131	9.0548E-04	7.3038E-12	3.3576E+13	1.8091E+11
I-132	6.4654E-04	6.2637E-14	2.8576E+11	1.6091E+11
I-133	1.7231E-03	1.5211E-12	6.8875E+12	3.5357E+11
I-134	2.0255E-04	7.5927E-15	3.4123E+10	9.1963E+10
I-135	1.3139E-03	3.7413E-13	1.6690E+12	2.8776E+11
Xe-133	2.9892E+00	1.5969E-08	7.2308E+16	3.8158E+14
Xe-135	1.1143E+00	4.3635E-10	1.9465E+15	1.4734E+14
Cs-134	2.8828E-06	2.2281E-12	1.0013E+13	6.5208E+08
Cs-136	8.5685E-07	1.1691E-14	5.1768E+10	1.9421E+08
Cs-137	2.3200E-06	2.6673E-11	1.1725E+14	5.2477E+08
Ba-139	1.3505E-07	8.2562E-18	3.5770E+07	3.0174E+07
Ba-140	5.8871E-07	8.0415E-15	3.4591E+10	9.0182E+07
La-140	2.5807E-08	4.6430E-17	1.9972E+08	2.9726E+06
La-141	3.2824E-09	5.8040E-19	2.4789E+06	5.6958E+05
La-142	1.4153E-09	9.8869E-20	4.1930E+05	3.0292E+05
Ce-141	1.3969E-08	4.9027E-16	2.0939E+09	2.1374E+06
Ce-143	1.2689E-08	1.9107E-17	8.0466E+07	1.9694E+06
Ce-144	1.1229E-08	3.5205E-15	1.4723E+10	1.7175E+06
Pr-143	5.2842E-09	7.8473E-17	3.3047E+08	8.0652E+05
Nd-147	2.1758E-09	2.6896E-17	1.1018E+08	3.3339E+05
Np-239	1.5340E-07	6.6122E-16	1.6661E+09	2.3663E+07
Pu-238	4.5344E-11	2.6487E-15	6.7019E+09	6.9352E+03
Pu-239	3.9728E-12	6.3916E-14	1.6105E+11	6.0756E+02
Pu-240	7.4387E-12	3.2645E-14	8.1913E+10	1.1377E+03
Pu-241	1.6033E-09	1.5564E-14	3.8891E+10	2.4522E+05
Am-241	1.0747E-12	3.1313E-16	7.8245E+08	1.6434E+02
Cm-242	2.7251E-10	8.2222E-17	2.0461E+08	4.1684E+04
Cm-244	1.8019E-11	2.2272E-16	5.4969E+08	2.7559E+03

CR Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump		
Noble gases (atoms)	5.8528E+17	0.0000E+00		
Elemental I (atoms)	3.0247E+13	0.0000E+00		
Organic I (atoms)	1.1692E+13	0.0000E+00		
Aerosols (kg)	2.9555E-11	0.0000E+00		
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.3161E-13	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.2522E-13	
Total I (Ci)			4.7916E-03	

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.9407E+17
Elemental I (atoms)	0.0000E+00	6.7933E+13

Organic I (atoms)	0.0000E+00	2.0359E+13
Aerosols (kg)	0.0000E+00	6.5704E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.3278E+17
Elemental I (atoms)	1.5370E+14	4.7536E+12
Organic I (atoms)	4.8952E+13	1.5140E+12
Aerosols (kg)	1.4845E-10	4.5913E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	4.4089E+17	0.0000E+00
Elemental I (atoms)	4.1583E+13	0.0000E+00
Organic I (atoms)	9.9767E+12	0.0000E+00
Aerosols (kg)	4.0737E-11	0.0000E+00

EAB Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2126E-02	1.5996E-01	5.7168E-02
Accumulated dose (rem)	1.0430E-01	3.8678E-01	1.1652E-01

LPZ Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.8242E-03	1.7872E-02	6.3875E-03
Accumulated dose (rem)	1.1654E-02	4.3216E-02	1.3019E-02

CR Doses:

Time (h) = 4.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.2574E-02	6.7646E-01	4.3903E-02
Accumulated dose (rem)	4.1381E-02	1.5432E+00	9.0124E-02

DW Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	3.6468E-03	1.1469E-10	1.1908E+15	4.3601E+15
Co-60	4.3715E-03	3.8673E-09	3.8816E+16	5.2210E+15
Kr-85	1.3565E+06	3.4576E+00	2.4497E+25	5.1267E+20
Kr-85m	1.2041E+07	1.4632E-03	1.0366E+22	5.7527E+21
Kr-87	5.0710E+06	1.7902E-04	1.2392E+21	4.7604E+21
Kr-88	2.2927E+07	1.8284E-03	1.2513E+22	1.2649E+22
Rb-86	1.2536E-01	1.5406E-09	1.0788E+16	3.1479E+17
Sr-89	6.1780E+00	2.1265E-07	1.4389E+18	7.3898E+18
Sr-90	8.1415E-01	5.9685E-06	3.9937E+19	9.7232E+17
Sr-91	5.7525E+00	1.5869E-09	1.0502E+16	8.3839E+18
Sr-92	2.8855E+00	2.2957E-10	1.5027E+15	6.9579E+18
Y-90	2.6577E-02	4.8850E-11	3.2687E+14	1.0207E+16
Y-91	8.1135E-02	3.3084E-09	2.1894E+16	9.3801E+16
Y-92	1.3304E+00	1.3826E-10	9.0500E+14	1.1466E+17
Y-93	6.7390E-02	2.0199E-11	1.3080E+14	9.7060E+16
Zr-95	9.5768E-02	4.4579E-09	2.8259E+16	1.1451E+17
Zr-97	7.8829E-02	4.1236E-11	2.5601E+14	1.0528E+17
Nb-95	9.6128E-02	2.4583E-09	1.5583E+16	1.1480E+17
Mo-99	1.1774E+00	2.4549E-09	1.4933E+16	1.4469E+18
Tc-99m	1.0760E+00	2.0464E-10	1.2448E+15	1.2884E+18
Ru-103	1.0623E+00	3.2917E-08	1.9245E+17	1.2713E+18
Ru-105	4.0685E-01	6.0526E-11	3.4714E+14	7.4498E+17
Ru-106	4.6331E-01	1.3849E-07	7.8677E+17	5.5344E+17
Rh-105	7.0069E-01	8.3015E-10	4.7612E+15	8.4880E+17
Sb-127	1.1870E+00	4.4448E-09	2.1076E+16	1.4468E+18
Sb-129	1.9892E+00	3.5374E-10	1.6514E+15	3.6861E+18
Te-127	1.2050E+00	4.5661E-10	2.1652E+15	1.4392E+18
Te-127m	2.0737E-01	2.1985E-08	1.0425E+17	2.4765E+17
Te-129	2.5158E+00	1.2013E-10	5.6081E+14	3.8558E+18
Te-129m	6.8300E-01	2.2672E-08	1.0584E+17	8.1603E+17

Te-131m	2.3436E+00	2.9390E-09	1.3511E+16	2.9808E+18
Te-132	1.7800E+01	5.8632E-08	2.6749E+17	2.1778E+19
I-131	3.1924E+04	2.5750E-04	1.1838E+21	1.5672E+20
I-132	2.5188E+04	2.4402E-06	1.1133E+19	2.1995E+20
I-133	5.8927E+04	5.2019E-05	2.3554E+20	3.1718E+20
I-134	3.2480E+03	1.2175E-07	5.4718E+17	2.0728E+20
I-135	4.1830E+04	1.1911E-05	5.3133E+19	2.8115E+20
Xe-133	1.4291E+08	7.6348E-01	3.4570E+24	5.4425E+22
Xe-135	5.1544E+07	2.0184E-02	9.0037E+22	2.1597E+22
Cs-134	1.3797E+01	1.0663E-05	4.7922E+19	3.4475E+19
Cs-136	4.0919E+00	5.5831E-08	2.4722E+17	1.0297E+19
Cs-137	1.1104E+01	1.2766E-04	5.6114E+20	2.7743E+19
Ba-139	1.3167E+00	8.0500E-11	3.4877E+14	6.3344E+18
Ba-140	9.4696E+00	1.2935E-07	5.5640E+17	1.1379E+19
La-140	4.3451E-01	7.8173E-10	3.3626E+15	1.2261E+17
La-141	4.4361E-02	7.8441E-12	3.3502E+13	8.5890E+16
La-142	1.4555E-02	1.0167E-12	4.3120E+12	6.0273E+16
Ce-141	2.2514E-01	7.9014E-09	3.3747E+16	2.6928E+17
Ce-143	2.0032E-01	3.0164E-10	1.2703E+15	2.5332E+17
Ce-144	1.8101E-01	5.6752E-08	2.3734E+17	2.1623E+17
Pr-143	8.5206E-02	1.2653E-09	5.3287E+15	1.0111E+17
Nd-147	3.4987E-02	4.3247E-10	1.7717E+15	4.2084E+16
Np-239	2.4429E+00	1.0530E-08	2.6533E+16	3.0166E+18
Pu-238	7.3105E-04	4.2702E-08	1.0805E+17	8.7305E+14
Pu-239	6.4057E-05	1.0306E-06	2.5968E+18	7.6475E+13
Pu-240	1.1993E-04	5.2630E-07	1.3206E+18	1.4322E+14
Pu-241	2.5848E-02	2.5092E-07	6.2700E+17	3.0870E+16
Am-241	1.7329E-05	5.0489E-09	1.2616E+16	2.0682E+13
Cm-242	4.3926E-03	1.3253E-09	3.2981E+15	5.2485E+15
Cm-244	2.9049E-04	3.5906E-09	8.8620E+15	3.4693E+14

DW Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8068E+25	0.0000E+00	
Elemental I (atoms)	4.3051E+19	4.8566E+22	
Organic I (atoms)	1.4382E+21	0.0000E+00	
Aerosols (kg)	1.4754E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0146E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2270E-05
Total I (Ci)			1.6112E+05

DW to RB Transport Group Inventory:

Time (h) = 4.0000 Leakage Transport

Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.6387E+18
Organic I (atoms)	2.6914E+18
Aerosols (kg)	1.6814E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5140E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5140E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

RB Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	2.0769E-02	6.5315E-10	6.7816E+15	7.5864E+12
Co-60	2.4896E-02	2.2025E-08	2.2106E+17	9.0892E+12

Kr-85	2.3772E+03	6.0592E-03	4.2929E+22	4.7163E+17
Kr-85m	2.1101E+04	2.5641E-06	1.8166E+19	4.9191E+18
Kr-87	8.8865E+03	3.1373E-07	2.1716E+18	3.3151E+18
Kr-88	4.0178E+04	3.2042E-06	2.1928E+19	1.0345E+19
Rb-86	1.4796E+00	1.8184E-08	1.2733E+17	6.4403E+14
Sr-89	3.5185E+01	1.2111E-06	8.1947E+18	1.2855E+16
Sr-90	4.6367E+00	3.3991E-05	2.2745E+20	1.6927E+15
Sr-91	3.2761E+01	9.0375E-09	5.9808E+16	1.3276E+16
Sr-92	1.6433E+01	1.3074E-09	8.5580E+15	8.7983E+15
Y-90	1.8392E-01	3.3805E-10	2.2620E+15	4.2432E+13
Y-91	4.6753E-01	1.9064E-08	1.2616E+17	1.6712E+14
Y-92	1.0100E+01	1.0497E-09	6.8711E+15	2.3887E+15
Y-93	3.8380E-01	1.1504E-10	7.4490E+14	1.5455E+14
Zr-95	5.4541E-01	2.5388E-08	1.6094E+17	1.9924E+14
Zr-97	4.4894E-01	2.3484E-10	1.4580E+15	1.7372E+14
Nb-95	5.4746E-01	1.4000E-08	8.8750E+16	1.9986E+14
Mo-99	6.7055E+00	1.3981E-08	8.5046E+16	2.4845E+15
Tc-99m	6.1282E+00	1.1654E-09	7.0893E+15	2.2338E+15
Ru-103	6.0502E+00	1.8746E-07	1.0961E+18	2.2110E+15
Ru-105	2.3171E+00	3.4470E-10	1.9770E+15	1.0626E+15
Ru-106	2.6386E+00	7.8869E-07	4.4807E+18	9.6339E+14
Rh-105	3.9905E+00	4.7278E-09	2.7116E+16	1.4690E+15
Sb-127	6.7600E+00	2.5314E-08	1.2003E+17	2.4941E+15
Sb-129	1.1329E+01	2.0146E-09	9.4048E+15	5.2296E+15
Te-127	6.8628E+00	2.6004E-09	1.2331E+16	2.5005E+15
Te-127m	1.1810E+00	1.2521E-07	5.9370E+17	4.3114E+14
Te-129	1.4328E+01	6.8416E-10	3.1939E+15	5.9360E+15
Te-129m	3.8898E+00	1.2912E-07	6.0277E+17	1.4204E+15
Te-131m	1.3347E+01	1.6738E-08	7.6946E+16	5.0343E+15
Te-132	1.0137E+02	3.3392E-07	1.5234E+18	3.7474E+16
I-131	7.3202E+02	5.9046E-06	2.7144E+19	3.0142E+17
I-132	4.7803E+02	4.6311E-08	2.1128E+17	2.8698E+17
I-133	1.3519E+03	1.1934E-06	5.4034E+18	5.8476E+17
I-134	7.4513E+01	2.7932E-09	1.2553E+16	1.5276E+17
I-135	9.5962E+02	2.7325E-07	1.2189E+18	4.6890E+17
Xe-133	2.5036E+05	1.3375E-03	6.0563E+21	4.9928E+19
Xe-135	8.9677E+04	3.5116E-05	1.5665E+20	1.9055E+19
Cs-134	1.6284E+02	1.2586E-04	5.6561E+20	7.0699E+16
Cs-136	4.8295E+01	6.5895E-07	2.9179E+18	2.1045E+16
Cs-137	1.3105E+02	1.5067E-03	6.6229E+21	5.6897E+16
Ba-139	7.4990E+00	4.5846E-10	1.9863E+15	6.0809E+15
Ba-140	5.3930E+01	7.3667E-07	3.1688E+18	1.9751E+16
La-140	3.0703E+00	5.5238E-09	2.3761E+16	6.6845E+14
La-141	2.5264E-01	4.4673E-11	1.9080E+14	1.1949E+14
La-142	8.2891E-02	5.7905E-12	2.4557E+13	6.1232E+13
Ce-141	1.2818E+00	4.4987E-08	1.9214E+17	4.6839E+14
Ce-143	1.1408E+00	1.7179E-09	7.2345E+15	4.2902E+14
Ce-144	1.0309E+00	3.2321E-07	1.3517E+18	3.7640E+14
Pr-143	4.8629E-01	7.2215E-09	3.0412E+16	1.7678E+14
Nd-147	1.9925E-01	2.4630E-09	1.0090E+16	7.3011E+13
Np-239	1.3913E+01	5.9971E-08	1.5111E+17	5.1677E+15
Pu-238	4.1634E-03	2.4319E-07	6.1535E+17	1.5199E+12
Pu-239	3.6481E-04	5.8693E-06	1.4789E+19	1.3316E+11
Pu-240	6.8299E-04	2.9973E-06	7.5210E+18	2.4934E+11
Pu-241	1.4721E-01	1.4290E-06	3.5709E+18	5.3742E+13
Am-241	9.8700E-05	2.8757E-08	7.1859E+16	3.6019E+10
Cm-242	2.5016E-02	7.5480E-09	1.8783E+16	9.1350E+12
Cm-244	1.6544E-03	2.0449E-08	5.0470E+16	6.0397E+11

RB Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	4.9184E+22	0.0000E+00	
Elemental I (atoms)	1.5635E+18	0.0000E+00	
Organic I (atoms)	2.6284E+18	0.0000E+00	
Aerosols (kg)	1.6884E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.9436E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5514E-08
Total I (Ci)			3.5960E+03

DW to RB Transport Group Inventory:

Time (h) = 4.0000 Leakage Transport

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Noble gases (atoms)      4.9270E+22
Elemental I (atoms)      1.6387E+18
Organic I (atoms)        2.6914E+18
Aerosols (kg)            1.6814E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   4.0000       Ci           kg          Atoms       Decay
Co-58                  3.1963E-10  1.0052E-17  1.0437E+08  7.1579E+04
Co-60                  3.8315E-10  3.3896E-16  3.4021E+09  8.5769E+04
Kr-85                  5.4832E-02  1.3976E-07  9.9016E+17  9.1748E+12
Kr-85m                 4.8671E-01  5.9141E-11  4.1901E+14  9.4327E+13
Kr-87                  2.0497E-01  7.2362E-12  5.0089E+13  6.0786E+13
Kr-88                  9.2672E-01  7.3906E-11  5.0576E+14  1.9657E+14
Rb-86                  3.0020E-08  3.6895E-16  2.5835E+09  9.7023E+06
Sr-89                  5.4149E-07  1.8638E-14  1.2612E+11  1.2128E+08
Sr-90                  7.1358E-08  5.2313E-13  3.5004E+12  1.5973E+07
Sr-91                  5.0419E-07  1.3909E-16  9.2044E+08  1.2214E+08
Sr-92                  2.5291E-07  2.0121E-17  1.3171E+08  7.5635E+07
Y-90                   2.9203E-09  5.3676E-18  3.5916E+07  4.8439E+05
Y-91                   7.2105E-09  2.9402E-16  1.9457E+09  1.5902E+06
Y-92                   1.6249E-07  1.6887E-17  1.1054E+08  2.9299E+07
Y-93                   5.9066E-09  1.7704E-18  1.1464E+07  1.4241E+06
Zr-95                  8.3938E-09  3.9072E-16  2.4768E+09  1.8798E+06
Zr-97                  6.9091E-09  3.6142E-18  2.2438E+07  1.6163E+06
Nb-95                  8.4253E-09  2.1546E-16  1.3658E+09  1.8859E+06
Mo-99                  1.0320E-07  2.1517E-16  1.3088E+09  2.3361E+07
Tc-99m                 9.4312E-08  1.7936E-17  1.0910E+08  2.1060E+07
Ru-103                 9.3112E-08  2.8850E-15  1.6868E+10  2.0859E+07
Ru-105                 3.5660E-08  5.3049E-18  3.0426E+07  9.4859E+06
Ru-106                 4.0608E-08  1.2138E-14  6.8958E+10  9.0908E+06
Rh-105                 6.1414E-08  7.2760E-17  4.1731E+08  1.3837E+07
Sb-127                 1.0404E-07  3.8957E-16  1.8473E+09  2.3475E+07
Sb-129                 1.7435E-07  3.1004E-17  1.4474E+08  4.6611E+07
Te-127                 1.0562E-07  4.0020E-17  1.8977E+08  2.3586E+07
Te-127m                1.8176E-08  1.9269E-15  9.1370E+09  4.0685E+06
Te-129                 2.2050E-07  1.0529E-17  4.9153E+07  5.4134E+07
Te-129m                5.9863E-08  1.9871E-15  9.2766E+09  1.3403E+07
Te-131m                2.0541E-07  2.5760E-16  1.1842E+09  4.7131E+07
Te-132                 1.5602E-06  5.1390E-15  2.3445E+10  3.5255E+08
I-131                  1.2075E-03  9.7398E-12  4.4774E+13  3.2244E+11
I-132                  6.8050E-04  6.5926E-14  3.0077E+11  2.5071E+11
I-133                  2.2303E-03  1.9689E-12  8.9149E+12  6.1873E+11
I-134                  1.2293E-04  4.6083E-15  2.0710E+10  1.1347E+11
I-135                  1.5832E-03  4.5083E-13  2.0111E+12  4.8258E+11
Xe-133                 5.7701E+00  3.0826E-08  1.3958E+17  9.6990E+14
Xe-135                 2.0286E+00  7.9437E-10  3.5436E+15  3.5992E+14
Cs-134                 3.3039E-06  2.5536E-12  1.1476E+13  1.0656E+09
Cs-136                 9.7990E-07  1.3370E-14  5.9203E+10  3.1698E+08
Cs-137                 2.6591E-06  3.0570E-11  1.3438E+14  8.5756E+08
Ba-139                 1.1541E-07  7.0556E-18  3.0568E+07  4.7269E+07
Ba-140                 8.2998E-07  1.1337E-14  4.8767E+10  1.8624E+08
La-140                 4.8892E-08  8.7962E-17  3.7837E+08  7.8526E+06
La-141                 3.8882E-09  6.8752E-19  2.9364E+06  1.0587E+06
La-142                 1.2757E-09  8.9115E-20  3.7793E+05  4.8681E+05
Ce-141                 1.9726E-08  6.9231E-16  2.9569E+09  4.4187E+06
Ce-143                 1.7557E-08  2.6438E-17  1.1134E+08  4.0194E+06
Ce-144                 1.5865E-08  4.9742E-15  2.0802E+10  3.5517E+06
Pr-143                 7.4867E-09  1.1118E-16  4.6821E+08  1.6707E+06
Nd-147                 3.0665E-09  3.7905E-17  1.5529E+08  6.8835E+05
Np-239                 2.1412E-07  9.2294E-16  2.3256E+09  4.8560E+07
Pu-238                 6.4074E-11  3.7427E-15  9.4702E+09  1.4343E+04
Pu-239                 5.6144E-12  9.0327E-14  2.2760E+11  1.2566E+03
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Pu-240	1.0511E-11	4.6129E-14	1.1575E+11	2.3529E+03
Pu-241	2.2655E-09	2.1992E-14	5.4955E+10	5.0713E+05
Am-241	1.5190E-12	4.4258E-16	1.1059E+09	3.3993E+02
Cm-242	3.8500E-10	1.1616E-16	2.8907E+08	8.6197E+04
Cm-244	2.5461E-11	3.1471E-16	7.7673E+08	5.6994E+03

CR Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1343E+18	0.0000E+00	
Elemental I (atoms)	3.4803E+13	0.0000E+00	
Organic I (atoms)	2.0631E+13	0.0000E+00	
Aerosols (kg)	3.4016E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.6949E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.8601E-13
Total I (Ci)			5.8245E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.5057E+17
Elemental I (atoms)	0.0000E+00	9.7713E+13
Organic I (atoms)	0.0000E+00	4.1160E+13
Aerosols (kg)	0.0000E+00	9.4368E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6240E+18
Elemental I (atoms)	2.2592E+14	6.9871E+12
Organic I (atoms)	9.9395E+13	3.0741E+12
Aerosols (kg)	2.1796E-10	6.7410E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	1.1387E+18	0.0000E+00
Elemental I (atoms)	6.8571E+13	0.0000E+00
Organic I (atoms)	2.3165E+13	0.0000E+00
Aerosols (kg)	6.7087E-11	0.0000E+00

EAB Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.3326E-01	1.1137E+00	3.6815E-01
Accumulated dose (rem)	4.3756E-01	1.5005E+00	4.8468E-01

LPZ Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.7236E-02	1.2444E-01	4.1135E-02
Accumulated dose (rem)	4.8890E-02	1.6765E-01	5.4154E-02

CR Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.8111E-01	5.0778E+00	3.4029E-01
Accumulated dose (rem)	2.2249E-01	6.6210E+00	4.3041E-01

DW Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	3.6262E-03	1.1404E-10	1.1841E+15	4.3620E+15
Co-60	4.3537E-03	3.8515E-09	3.8657E+16	5.2233E+15
Kr-85	1.3511E+06	3.4437E+00	2.4398E+25	1.2340E+21
Kr-85m	6.4586E+06	7.8481E-04	5.5603E+21	1.0527E+22
Kr-87	5.7076E+05	2.0150E-05	1.3948E+20	5.8581E+21
Kr-88	8.6023E+06	6.8603E-04	4.6947E+21	2.0435E+22
Rb-86	1.2408E-01	1.5250E-09	1.0679E+16	3.1486E+17
Sr-89	6.1391E+00	2.1131E-07	1.4298E+18	7.3930E+18

Sr-90	8.1087E-01	5.9445E-06	3.9776E+19	9.7276E+17
Sr-91	4.2791E+00	1.1805E-09	7.8119E+15	8.3866E+18
Sr-92	1.0331E+00	8.2193E-11	5.3802E+14	6.9588E+18
Y-90	5.9745E-02	1.0981E-10	7.3479E+14	1.0230E+16
Y-91	8.4766E-02	3.4564E-09	2.2874E+16	9.3845E+16
Y-92	1.5289E+00	1.5889E-10	1.0401E+15	1.1548E+17
Y-93	5.1007E-02	1.5288E-11	9.8998E+13	9.7091E+16
Zr-95	9.5210E-02	4.4319E-09	2.8094E+16	1.1456E+17
Zr-97	6.6632E-02	3.4856E-11	2.1640E+14	1.0532E+17
Nb-95	9.5737E-02	2.4483E-09	1.5520E+16	1.1485E+17
Mo-99	1.1244E+00	2.3445E-09	1.4261E+16	1.4476E+18
Tc-99m	1.0507E+00	1.9982E-10	1.2155E+15	1.2890E+18
Ru-103	1.0550E+00	3.2688E-08	1.9112E+17	1.2718E+18
Ru-105	2.1702E-01	3.2284E-11	1.8516E+14	7.4514E+17
Ru-106	4.6131E-01	1.3789E-07	7.8336E+17	5.5369E+17
Rh-105	6.6790E-01	7.9130E-10	4.5384E+15	8.4917E+17
Sb-127	1.1473E+00	4.2961E-09	2.0371E+16	1.4475E+18
Sb-129	1.0428E+00	1.8544E-10	8.6570E+14	3.6869E+18
Te-127	1.1901E+00	4.5096E-10	2.1384E+15	1.4398E+18
Te-127m	2.0654E-01	2.1897E-08	1.0383E+17	2.4776E+17
Te-129	1.5769E+00	7.5299E-11	3.5152E+14	3.8569E+18
Te-129m	6.7903E-01	2.2540E-08	1.0522E+17	8.1640E+17
Te-131m	2.1281E+00	2.6688E-09	1.2269E+16	2.9819E+18
Te-132	1.7111E+01	5.6362E-08	2.5714E+17	2.1787E+19
I-131	3.1342E+04	2.5281E-04	1.1622E+21	1.7357E+20
I-132	7.5270E+03	7.2921E-07	3.3268E+18	2.2774E+20
I-133	5.1366E+04	4.5344E-05	2.0531E+20	3.4651E+20
I-134	1.3688E+02	5.1311E-09	2.3060E+16	2.0781E+20
I-135	2.7389E+04	7.7989E-06	3.4790E+19	2.9932E+20
Xe-133	1.3923E+08	7.4385E-01	3.3681E+24	1.2958E+23
Xe-135	3.7849E+07	1.4821E-02	6.6114E+22	4.5222E+22
Cs-134	1.3739E+01	1.0619E-05	4.7722E+19	3.4482E+19
Cs-136	4.0396E+00	5.5118E-08	2.4406E+17	1.0299E+19
Cs-137	1.1059E+01	1.2714E-04	5.5888E+20	2.7749E+19
Ba-139	1.7545E-01	1.0726E-11	4.6471E+13	6.3347E+18
Ba-140	9.3464E+00	1.2767E-07	5.4916E+17	1.1384E+19
La-140	1.0291E+00	1.8515E-09	7.9643E+15	1.2300E+17
La-141	2.1820E-02	3.8584E-12	1.6479E+13	8.5907E+16
La-142	2.4000E-03	1.6765E-13	7.1101E+11	6.0276E+16
Ce-141	2.2355E-01	7.8457E-09	3.3509E+16	2.6940E+17
Ce-143	1.8343E-01	2.7622E-10	1.1632E+15	2.5342E+17
Ce-144	1.8021E-01	5.6501E-08	2.3629E+17	2.1633E+17
Pr-143	8.5766E-02	1.2737E-09	5.3637E+15	1.0116E+17
Nd-147	3.4481E-02	4.2623E-10	1.7461E+15	4.2102E+16
Np-239	2.3166E+00	9.9858E-09	2.5161E+16	3.0179E+18
Pu-238	7.2812E-04	4.2531E-08	1.0762E+17	8.7344E+14
Pu-239	6.3831E-05	1.0269E-06	2.5876E+18	7.6509E+13
Pu-240	1.1944E-04	5.2418E-07	1.3153E+18	1.4329E+14
Pu-241	2.5743E-02	2.4991E-07	6.2447E+17	3.0884E+16
Am-241	1.7278E-05	5.0341E-09	1.2579E+16	2.0691E+13
Cm-242	4.3718E-03	1.3191E-09	3.2825E+15	5.2508E+15
Cm-244	2.8932E-04	3.5761E-09	8.8263E+15	3.4709E+14

DW Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7843E+25	0.0000E+00	
Elemental I (atoms)	4.0774E+19	4.8566E+22	
Organic I (atoms)	1.3622E+21	0.0000E+00	
Aerosols (kg)	1.4691E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.5890E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1212E-05
Total I (Ci)			1.1776E+05

DW to RB Transport Group Inventory:

Time (h) = 8.0000 Leakage Transport	
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1895E+18
Aerosols (kg)	1.6818E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8343E+17
Organic I (atoms)	0.0000E+00	2.0850E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8343E+17
Organic I (atoms)	0.0000E+00	2.0850E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

RB Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	2.0744E-02	6.5237E-10	6.7735E+15	1.8645E+13
Co-60	2.4906E-02	2.2033E-08	2.2114E+17	2.2357E+13
Kr-85	5.7618E+03	1.4686E-02	1.0405E+23	2.6630E+18
Kr-85m	2.7543E+04	3.3469E-06	2.3712E+19	1.8811E+19
Kr-87	2.4341E+03	8.5931E-08	5.9482E+17	6.1852E+18
Kr-88	3.6685E+04	2.9256E-06	2.0021E+19	3.2433E+19
Rb-86	1.4707E+00	1.8075E-08	1.2657E+17	1.4300E+15
Sr-89	3.5120E+01	1.2088E-06	8.1796E+18	3.1584E+16
Sr-90	4.6387E+00	3.4006E-05	2.2754E+20	4.1637E+15
Sr-91	2.4479E+01	6.7529E-09	4.4689E+16	2.8418E+16
Sr-92	5.9101E+00	4.7019E-10	3.0778E+15	1.4281E+16
Y-90	3.7296E-01	6.8550E-10	4.5869E+15	1.8980E+14
Y-91	4.9035E-01	1.9995E-08	1.3232E+17	4.2245E+14
Y-92	9.8996E+00	1.0288E-09	6.7344E+15	8.0106E+15
Y-93	2.9179E-01	8.7459E-11	5.6633E+14	3.3341E+14
Zr-95	5.4466E-01	2.5353E-08	1.6072E+17	4.8963E+14
Zr-97	3.8118E-01	1.9940E-10	1.2379E+15	3.9437E+14
Nb-95	5.4767E-01	1.4006E-08	8.8784E+16	4.9159E+14
Mo-99	6.4324E+00	1.3412E-08	8.1583E+16	5.9839E+15
Tc-99m	6.0106E+00	1.1431E-09	6.9534E+15	5.4524E+15
Ru-103	6.0351E+00	1.8699E-07	1.0933E+18	5.4306E+15
Ru-105	1.2415E+00	1.8469E-10	1.0592E+15	1.9810E+15
Ru-106	2.6389E+00	7.8879E-07	4.4813E+18	2.3693E+15
Rh-105	3.8208E+00	4.5267E-09	2.5962E+16	3.5521E+15
Sb-127	6.5631E+00	2.4576E-08	1.1654E+17	6.0431E+15
Sb-129	5.9655E+00	1.0608E-09	4.9523E+15	9.6852E+15
Te-127	6.8083E+00	2.5798E-09	1.2233E+16	6.1308E+15
Te-127m	1.1815E+00	1.2526E-07	5.9397E+17	1.0605E+15
Te-129	9.0210E+00	4.3076E-10	2.0109E+15	1.1897E+16
Te-129m	3.8844E+00	1.2894E-07	6.0195E+17	3.4916E+15
Te-131m	1.2174E+01	1.5267E-08	7.0184E+16	1.1828E+16
Te-132	9.7887E+01	3.2243E-07	1.4710E+18	9.0552E+16
I-131	8.0023E+02	6.4548E-06	2.9673E+19	7.1024E+17
I-132	2.3262E+02	2.2536E-08	1.0282E+17	4.6492E+17
I-133	1.3118E+03	1.1580E-06	5.2434E+18	1.2959E+18
I-134	3.4958E+00	1.3104E-10	5.8892E+14	1.6515E+17
I-135	6.9947E+02	1.9917E-07	8.8849E+17	9.0821E+17
Xe-133	5.9372E+05	3.1719E-03	1.4362E+22	2.7789E+20
Xe-135	1.6109E+05	6.3080E-05	2.8139E+20	8.9079E+19
Cs-134	1.6284E+02	1.2586E-04	5.6564E+20	1.5746E+17
Cs-136	4.7881E+01	6.5330E-07	2.8928E+18	4.6666E+16
Cs-137	1.3108E+02	1.5070E-03	6.6243E+21	1.2673E+17
Ba-139	1.0037E+00	6.1360E-11	2.6584E+14	7.8017E+15
Ba-140	5.3467E+01	7.3034E-07	3.1416E+18	4.8362E+16
La-140	6.4432E+00	1.1592E-08	4.9864E+16	3.1899E+15
La-141	1.2483E-01	2.2072E-11	9.4271E+13	2.1608E+14
La-142	1.3729E-02	9.5908E-13	4.0674E+12	8.1727E+13
Ce-141	1.2785E+00	4.4870E-08	1.9164E+17	1.1505E+15
Ce-143	1.0493E+00	1.5801E-09	6.6544E+15	1.0121E+15
Ce-144	1.0309E+00	3.2322E-07	1.3517E+18	9.2565E+14
Pr-143	4.9166E-01	7.3013E-09	3.0748E+16	4.3728E+14
Nd-147	1.9725E-01	2.4383E-09	9.9889E+15	1.7864E+14

Np-239	1.3252E+01	5.7125E-08	1.4394E+17	1.2403E+16
Pu-238	4.1653E-03	2.4330E-07	6.1563E+17	3.7387E+12
Pu-239	3.6515E-04	5.8747E-06	1.4803E+19	3.2762E+11
Pu-240	6.8329E-04	2.9986E-06	7.5243E+18	6.1332E+11
Pu-241	1.4727E-01	1.4296E-06	3.5723E+18	1.3219E+14
Am-241	9.8851E-05	2.8801E-08	7.1969E+16	8.8646E+10
Cm-242	2.5009E-02	7.5459E-09	1.8778E+16	2.2462E+13
Cm-244	1.6551E-03	2.0458E-08	5.0492E+16	1.4856E+12

RB Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1874E+23	0.0000E+00	
Elemental I (atoms)	1.5919E+18	0.0000E+00	
Organic I (atoms)	5.9193E+18	0.0000E+00	
Aerosols (kg)	1.6884E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.1000E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.6284E-08
Total I (Ci)			3.0476E+03

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1895E+18
Aerosols (kg)	1.6818E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	5.5823E-10	1.7556E-17	1.8228E+08	3.1950E+05
Co-60	6.7023E-10	5.9292E-16	5.9511E+09	3.8322E+05
Kr-85	2.4724E-01	6.3017E-07	4.4647E+18	8.6435E+13
Kr-85m	1.1819E+00	1.4361E-10	1.0175E+15	5.7046E+14
Kr-87	1.0444E-01	3.6873E-12	2.5523E+13	1.5199E+14
Kr-88	1.5741E+00	1.2554E-10	8.5909E+14	9.4080E+14
Rb-86	4.0973E-08	5.0355E-16	3.5261E+09	2.9321E+07
Sr-89	9.4509E-07	3.2531E-14	2.2012E+11	5.4114E+08
Sr-90	1.2483E-07	9.1512E-13	6.1233E+12	7.1371E+07
Sr-91	6.5875E-07	1.8172E-16	1.2026E+09	4.5742E+08
Sr-92	1.5904E-07	1.2653E-17	8.2825E+07	1.9323E+08
Y-90	1.0066E-08	1.8502E-17	1.2380E+08	3.9134E+06
Y-91	1.3201E-08	5.3829E-16	3.5623E+09	7.3312E+06
Y-92	2.6752E-07	2.7802E-17	1.8199E+08	1.5700E+08
Y-93	7.8522E-09	2.3536E-18	1.5240E+07	5.3874E+06
Zr-95	1.4657E-08	6.8227E-16	4.3250E+09	8.3898E+06
Zr-97	1.0258E-08	5.3658E-18	3.3313E+07	6.5289E+06
Nb-95	1.4738E-08	3.7690E-16	2.3892E+09	8.4264E+06
Mo-99	1.7310E-07	3.6092E-16	2.1954E+09	1.0168E+08
Tc-99m	1.6175E-07	3.0761E-17	1.8712E+08	9.3159E+07
Ru-103	1.6241E-07	5.0321E-15	2.9422E+10	9.3030E+07
Ru-105	3.3408E-08	4.9700E-18	2.8505E+07	2.9530E+07
Ru-106	7.1015E-08	2.1227E-14	1.2059E+11	4.0611E+07
Rh-105	1.0282E-07	1.2182E-16	6.9866E+08	6.0455E+07
Sb-127	1.7662E-07	6.6135E-16	3.1360E+09	1.0294E+08
Sb-129	1.6053E-07	2.8548E-17	1.3327E+08	1.4378E+08
Te-127	1.8322E-07	6.9423E-17	3.2919E+08	1.0495E+08
Te-127m	3.1796E-08	3.3709E-15	1.5984E+10	1.8179E+07
Te-129	2.4276E-07	1.1592E-17	5.4114E+07	1.8514E+08
Te-129m	1.0453E-07	3.4699E-15	1.6199E+10	5.9835E+07
Te-131m	3.2761E-07	4.1085E-16	1.8887E+09	1.9886E+08
Te-132	2.6342E-06	8.6767E-15	3.9585E+10	1.5408E+09
I-131	2.8753E-03	2.3193E-11	1.0662E+14	1.4094E+12

I-132	6.2313E-04	6.0369E-14	2.7542E+11	6.1890E+11
I-133	4.7143E-03	4.1616E-12	1.8844E+13	2.4959E+12
I-134	1.2563E-05	4.7093E-16	2.1164E+09	1.4082E+11
I-135	2.5137E-03	7.1578E-13	3.1930E+12	1.6216E+12
Xe-133	2.5470E+01	1.3607E-07	6.1611E+17	8.9958E+15
Xe-135	6.8678E+00	2.6893E-09	1.1997E+16	2.7713E+15
Cs-134	4.5366E-06	3.5063E-12	1.5758E+13	3.2316E+09
Cs-136	1.3339E-06	1.8200E-14	8.0590E+10	9.5647E+08
Cs-137	3.6517E-06	4.1982E-11	1.8454E+14	2.6009E+09
Ba-139	2.7009E-08	1.6512E-18	7.1539E+06	8.2654E+07
Ba-140	1.4388E-06	1.9654E-14	8.4541E+10	8.2743E+08
La-140	1.7392E-07	3.1291E-16	1.3460E+09	6.6622E+07
La-141	3.3591E-09	5.9397E-19	2.5369E+06	3.1594E+06
La-142	3.6946E-10	2.5809E-20	1.0946E+05	9.1199E+05
Ce-141	3.4404E-08	1.2075E-15	5.1570E+09	1.9708E+07
Ce-143	2.8238E-08	4.2523E-17	1.7907E+08	1.7046E+07
Ce-144	2.7742E-08	8.6980E-15	3.6375E+10	1.5866E+07
Pr-143	1.3232E-08	1.9650E-16	8.2750E+08	7.5146E+06
Nd-147	5.3082E-09	6.5615E-17	2.6881E+08	3.0554E+06
Np-239	3.5663E-07	1.5373E-15	3.8735E+09	2.1044E+08
Pu-238	1.1209E-10	6.5474E-15	1.6567E+10	6.4086E+04
Pu-239	9.8264E-12	1.5809E-13	3.9835E+11	5.6164E+03
Pu-240	1.8388E-11	8.0695E-14	2.0248E+11	1.0513E+04
Pu-241	3.9631E-09	3.8472E-14	9.6133E+10	2.2659E+06
Am-241	2.6601E-12	7.7506E-16	1.9367E+09	1.5199E+03
Cm-242	6.7302E-10	2.0306E-16	5.0532E+08	3.8497E+05
Cm-244	4.4539E-11	5.5053E-16	1.3588E+09	2.5465E+04

CR Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	5.0947E+18	0.0000E+00	
Elemental I (atoms)	4.7714E+13	0.0000E+00	
Organic I (atoms)	8.0431E+13	0.0000E+00	
Aerosols (kg)	4.6990E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3065E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5270E-12
Total I (Ci)			1.0739E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.5826E+18
Elemental I (atoms)	0.0000E+00	2.4374E+14
Organic I (atoms)	0.0000E+00	2.4895E+14
Aerosols (kg)	0.0000E+00	2.3600E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1454E+19
Elemental I (atoms)	5.8003E+14	1.7939E+13
Organic I (atoms)	6.0329E+14	1.8659E+13
Aerosols (kg)	5.6141E-10	1.7363E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	1.0929E+19	0.0000E+00
Elemental I (atoms)	2.1054E+14	0.0000E+00
Organic I (atoms)	1.8438E+14	0.0000E+00
Aerosols (kg)	2.0636E-10	0.0000E+00

EAB Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3907E+00	9.5871E+00	1.6876E+00
Accumulated dose (rem)	1.8282E+00	1.1088E+01	2.1722E+00

LPZ Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.0411E-01	3.6910E-01	1.1554E-01
Accumulated dose (rem)	1.5300E-01	5.3675E-01	1.6969E-01

CR Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.8585E-01	1.9722E+01	9.9703E-01
Accumulated dose (rem)	6.0834E-01	2.6343E+01	1.4274E+00

DW Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	3.5450E-03	1.1148E-10	1.1575E+15	4.3696E+15
Co-60	4.2831E-03	3.7890E-09	3.8030E+16	5.2325E+15
Kr-85	1.3294E+06	3.3884E+00	2.4006E+25	4.0892E+21
Kr-85m	5.3460E+05	6.4962E-05	4.6025E+20	1.5593E+22
Kr-87	9.1606E+01	3.2340E-09	2.2386E+16	5.9973E+21
Kr-88	1.7048E+05	1.3596E-05	9.3040E+19	2.5017E+22
Rb-86	1.1911E-01	1.4639E-09	1.0251E+16	3.1512E+17
Sr-89	5.9859E+00	2.0604E-07	1.3942E+18	7.4059E+18
Sr-90	7.9787E-01	5.8492E-06	3.9138E+19	9.7447E+17
Sr-91	1.3103E+00	3.6145E-10	2.3920E+15	8.3919E+18
Sr-92	1.6977E-02	1.3506E-12	8.8409E+12	6.9593E+18
Y-90	1.7689E-01	3.2513E-10	2.1756E+15	1.0479E+16
Y-91	9.0958E-02	3.7090E-09	2.4545E+16	9.4033E+16
Y-92	1.6077E-01	1.6708E-11	1.0937E+14	1.1693E+17
Y-93	1.6740E-02	5.0174E-12	3.2490E+13	9.7157E+16
Zr-95	9.3014E-02	4.3297E-09	2.7446E+16	1.1476E+17
Zr-97	3.4016E-02	1.7794E-11	1.1047E+14	1.0542E+17
Nb-95	9.4183E-02	2.4086E-09	1.5268E+16	1.1506E+17
Mo-99	9.3531E-01	1.9501E-09	1.1863E+16	1.4497E+18
Tc-99m	9.3702E-01	1.7820E-10	1.0840E+15	1.2910E+18
Ru-103	1.0260E+00	3.1789E-08	1.8586E+17	1.2741E+18
Ru-105	1.7567E-02	2.6133E-12	1.4989E+13	7.4531E+17
Ru-106	4.5336E-01	1.3551E-07	7.6987E+17	5.5466E+17
Rh-105	5.0027E-01	5.9270E-10	3.3994E+15	8.5041E+17
Sb-127	1.0012E+00	3.7492E-09	1.7778E+16	1.4498E+18
Sb-129	7.8755E-02	1.4005E-11	6.5379E+13	3.6877E+18
Te-127	1.1176E+00	4.2348E-10	2.0081E+15	1.4422E+18
Te-127m	2.0319E-01	2.1541E-08	1.0215E+17	2.4820E+17
Te-129	6.8143E-01	3.2539E-11	1.5190E+14	3.8586E+18
Te-129m	6.6015E-01	2.1913E-08	1.0230E+17	8.1782E+17
Te-131m	1.4469E+00	1.8145E-09	8.3416E+15	2.9857E+18
Te-132	1.4611E+01	4.8128E-08	2.1957E+17	2.1821E+19
I-131	2.9118E+04	2.3487E-04	1.0797E+21	2.3795E+20
I-132	7.6850E+01	7.4451E-09	3.3966E+16	2.3105E+20
I-133	2.9656E+04	2.6179E-05	1.1854E+20	4.3071E+20
I-134	4.3178E-04	1.6186E-14	7.2740E+10	2.0783E+20
I-135	5.0339E+03	1.4334E-06	6.3942E+18	3.2744E+20
Xe-133	1.2546E+08	6.7024E-01	3.0348E+24	4.1128E+23
Xe-135	1.1002E+07	4.3080E-03	1.9217E+22	9.1517E+22
Cs-134	1.3511E+01	1.0443E-05	4.6931E+19	3.4511E+19
Cs-136	3.8373E+00	5.2357E-08	2.3184E+17	1.0308E+19
Cs-137	1.0882E+01	1.2510E-04	5.4992E+20	2.7772E+19
Ba-139	5.5300E-05	3.3808E-15	1.4647E+10	6.3347E+18
Ba-140	8.8693E+00	1.2115E-07	5.2113E+17	1.1404E+19
La-140	2.9554E+00	5.3170E-09	2.2871E+16	1.2724E+17
La-141	1.2773E-03	2.2586E-13	9.6464E+11	8.5923E+16
La-142	1.7742E-06	1.2394E-16	5.2562E+08	6.0277E+16
Ce-141	2.1697E-01	7.6148E-09	3.2523E+16	2.6987E+17
Ce-143	1.2898E-01	1.9422E-10	8.1793E+14	2.5375E+17
Ce-144	1.7704E-01	5.5507E-08	2.3213E+17	2.1671E+17
Pr-143	8.6703E-02	1.2876E-09	5.4223E+15	1.0134E+17
Nd-147	3.2532E-02	4.0213E-10	1.6474E+15	4.2174E+16
Np-239	1.8734E+00	8.0754E-09	2.0348E+16	3.0223E+18
Pu-238	7.1653E-04	4.1854E-08	1.0590E+17	8.7498E+14
Pu-239	6.2919E-05	1.0123E-06	2.5506E+18	7.6644E+13
Pu-240	1.1753E-04	5.1580E-07	1.2943E+18	1.4354E+14
Pu-241	2.5330E-02	2.4589E-07	6.1443E+17	3.0938E+16
Am-241	1.7076E-05	4.9752E-09	1.2432E+16	2.0728E+13

Cm-242	4.2897E-03	1.2943E-09	3.2209E+15	5.2600E+15
Cm-244	2.8467E-04	3.5187E-09	8.6845E+15	3.4770E+14

DW Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7061E+25	0.0000E+00	
Elemental I (atoms)	3.4945E+19	4.8566E+22	
Organic I (atoms)	1.1675E+21	0.0000E+00	
Aerosols (kg)	1.4446E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		8.0519E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		8.8209E-06
Total I (Ci)			6.3885E+04

DW to RB Transport Group Inventory:

Time (h) = 24.0000 Leakage Transport	
Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1204E+18
Organic I (atoms)	1.8784E+19
Aerosols (kg)	1.6832E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2356E+23
Elemental I (atoms)	0.0000E+00	9.9876E+17
Organic I (atoms)	0.0000E+00	5.9379E+18
Aerosols (kg)	0.0000E+00	8.8403E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2356E+23
Elemental I (atoms)	0.0000E+00	9.9876E+17
Organic I (atoms)	0.0000E+00	5.9379E+18
Aerosols (kg)	0.0000E+00	8.8403E-04

RB Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	2.0645E-02	6.4925E-10	6.7411E+15	6.2751E+13
Co-60	2.4943E-02	2.2066E-08	2.2147E+17	7.5478E+13
Kr-85	1.9163E+04	4.8844E-02	3.4605E+23	2.9909E+19
Kr-85m	7.7063E+03	9.3642E-07	6.6344E+18	5.7133E+19
Kr-87	1.3205E+00	4.6618E-11	3.2269E+14	6.9467E+18
Kr-88	2.4574E+03	1.9598E-07	1.3412E+18	6.3382E+19
Rb-86	1.4360E+00	1.7648E-08	1.2358E+17	4.5273E+15
Sr-89	3.4860E+01	1.1999E-06	8.1191E+18	1.0616E+17
Sr-90	4.6465E+00	3.4063E-05	2.2793E+20	1.4058E+16
Sr-91	7.6305E+00	2.1050E-09	1.3930E+16	5.9224E+16
Sr-92	9.8866E-02	7.8656E-12	5.1486E+13	1.7309E+16
Y-90	1.0564E+00	1.9417E-09	1.2992E+16	1.6937E+15
Y-91	5.3511E-01	2.1820E-08	1.4440E+17	1.5230E+15
Y-92	9.8655E-01	1.0253E-10	6.7112E+14	1.7106E+16
Y-93	9.7486E-02	2.9220E-11	1.8921E+14	7.1114E+14
Zr-95	5.4168E-01	2.5214E-08	1.5984E+17	1.6473E+15
Zr-97	1.9810E-01	1.0363E-10	6.4335E+14	9.9054E+14
Nb-95	5.4849E-01	1.4027E-08	8.8916E+16	1.6594E+15
Mo-99	5.4469E+00	1.1357E-08	6.9084E+16	1.8614E+16
Tc-99m	5.4569E+00	1.0378E-09	6.3127E+15	1.7219E+16
Ru-103	5.9748E+00	1.8513E-07	1.0824E+18	1.8229E+16
Ru-105	1.0230E-01	1.5219E-11	8.7288E+13	2.9536E+15
Ru-106	2.6402E+00	7.8916E-07	4.4834E+18	7.9950E+15
Rh-105	2.9134E+00	3.4517E-09	1.9797E+16	1.0730E+16
Sb-127	5.8309E+00	2.1834E-08	1.0353E+17	1.9235E+16
Sb-129	4.5864E-01	8.1559E-11	3.8074E+14	1.4260E+16
Te-127	6.5085E+00	2.4662E-09	1.1694E+16	1.9977E+16
Te-127m	1.1833E+00	1.2545E-07	5.9486E+17	3.5805E+15
Te-129	3.9684E+00	1.8949E-10	8.8461E+14	2.1903E+16
Te-129m	3.8445E+00	1.2762E-07	5.9575E+17	1.1730E+16

Te-131m	8.4264E+00	1.0567E-08	4.8578E+16	3.3537E+16
Te-132	8.5091E+01	2.8028E-07	1.2787E+18	2.8522E+17
I-131	1.0495E+03	8.4656E-06	3.8917E+19	2.7023E+18
I-132	1.0273E+02	9.9522E-09	4.5404E+16	7.2420E+17
I-133	1.0686E+03	9.4336E-07	4.2715E+18	3.8654E+18
I-134	1.5559E-05	5.8324E-16	2.6212E+09	1.6576E+17
I-135	1.8140E+02	5.1652E-08	2.3041E+17	1.7389E+18
Xe-133	1.8085E+06	9.6616E-03	4.3747E+22	2.9442E+21
Xe-135	1.5864E+05	6.2120E-05	2.7711E+20	4.8245E+20
Cs-134	1.6288E+02	1.2589E-04	5.6577E+20	5.0456E+17
Cs-136	4.6260E+01	6.3119E-07	2.7949E+18	1.4698E+17
Cs-137	1.3118E+02	1.5082E-03	6.6295E+21	4.0620E+17
Ba-139	3.2204E-04	1.9689E-14	8.5300E+10	8.0675E+15
Ba-140	5.1652E+01	7.0554E-07	3.0349E+18	1.6037E+17
La-140	1.7633E+01	3.1724E-08	1.3646E+17	2.8755E+16
La-141	7.4386E-03	1.3153E-12	5.6177E+12	3.0479E+14
La-142	1.0332E-05	7.2178E-16	3.0610E+09	8.5793E+13
Ce-141	1.2632E+00	4.4333E-08	1.8935E+17	3.8592E+15
Ce-143	7.5113E-01	1.1311E-09	4.7633E+15	2.9131E+15
Ce-144	1.0310E+00	3.2325E-07	1.3519E+18	3.1229E+15
Pr-143	5.0591E-01	7.5129E-09	3.1639E+16	1.5008E+15
Nd-147	1.8945E-01	2.3418E-09	9.5938E+15	5.9067E+14
Np-239	1.0910E+01	4.7028E-08	1.1850E+17	3.8071E+16
Pu-238	4.1728E-03	2.4374E-07	6.1674E+17	1.2624E+13
Pu-239	3.6642E-04	5.8951E-06	1.4854E+19	1.1072E+12
Pu-240	6.8448E-04	3.0038E-06	7.5373E+18	2.0709E+12
Pu-241	1.4751E-01	1.4320E-06	3.5782E+18	4.4632E+14
Am-241	9.9454E-05	2.8977E-08	7.2408E+16	2.9995E+11
Cm-242	2.4982E-02	7.5376E-09	1.8757E+16	7.5735E+13
Cm-244	1.6578E-03	2.0492E-08	5.0576E+16	5.0160E+12

RB Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	3.9008E+23	0.0000E+00	
Elemental I (atoms)	1.7407E+18	0.0000E+00	
Organic I (atoms)	1.6936E+19	0.0000E+00	
Aerosols (kg)	1.6888E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.6753E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0350E-08
Total I (Ci)			2.4023E+03

DW to RB Transport Group Inventory:

Time (h) = 24.0000 Leakage Transport	
Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1204E+18
Organic I (atoms)	1.8784E+19
Aerosols (kg)	1.6832E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 24.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	1.0304E-10	3.2404E-18	3.3646E+07	7.2698E+05
Co-60	1.2449E-10	1.1013E-16	1.1054E+09	8.7364E+05
Kr-85	3.6479E-01	9.2979E-07	6.5875E+18	6.4099E+14
Kr-85m	1.4670E-01	1.7826E-11	1.2629E+14	1.3961E+15
Kr-87	2.5137E-05	8.8743E-16	6.1428E+09	1.7150E+14
Kr-88	4.6780E-02	3.7307E-12	2.5530E+13	1.6361E+15
Rb-86	6.7301E-09	8.2712E-17	5.7919E+08	5.7390E+07
Sr-89	1.7399E-07	5.9888E-15	4.0523E+10	1.2303E+09
Sr-90	2.3191E-08	1.7001E-13	1.1376E+12	1.6272E+08
Sr-91	3.8084E-08	1.0506E-17	6.9526E+07	7.7993E+08
Sr-92	4.9345E-10	3.9258E-20	2.5697E+05	2.3379E+08

Y-90	5.2697E-09	9.6858E-18	6.4810E+07	1.6378E+07
Y-91	2.6702E-09	1.0888E-16	7.2054E+08	1.7395E+07
Y-92	4.9184E-09	5.1115E-19	3.3459E+06	2.6225E+08
Y-93	4.8656E-10	1.4584E-19	9.4436E+05	9.3135E+06
Zr-95	2.7036E-09	1.2585E-16	7.9776E+08	1.9086E+07
Zr-97	9.8873E-10	5.1721E-19	3.2110E+06	1.2442E+07
Nb-95	2.7375E-09	7.0008E-17	4.4379E+08	1.9208E+07
Mo-99	2.7186E-08	5.6683E-17	3.4480E+08	2.2045E+08
Tc-99m	2.7236E-08	5.1796E-18	3.1507E+07	2.0374E+08
Ru-103	2.9821E-08	9.2399E-16	5.4023E+09	2.1134E+08
Ru-105	5.1061E-10	7.5960E-20	4.3566E+05	4.1090E+07
Ru-106	1.3177E-08	3.9388E-15	2.2377E+10	9.2555E+07
Rh-105	1.4541E-08	1.7228E-17	9.8807E+07	1.2873E+08
Sb-127	2.9102E-08	1.0898E-16	5.1675E+08	2.2635E+08
Sb-129	2.2891E-09	4.0707E-19	1.9003E+06	1.9848E+08
Te-127	3.2484E-08	1.2309E-17	5.8367E+07	2.3404E+08
Te-127m	5.9060E-09	6.2612E-16	2.9690E+09	4.1444E+07
Te-129	1.9807E-08	9.4577E-19	4.4152E+06	2.9061E+08
Te-129m	1.9188E-08	6.3694E-16	2.9734E+09	1.3600E+08
Te-131m	4.2057E-08	5.2742E-17	2.4246E+08	4.0757E+08
Te-132	4.2470E-07	1.3989E-15	6.3821E+09	3.3662E+09
I-131	2.6113E-03	2.1063E-11	9.6830E+13	5.9522E+12
I-132	5.1375E-05	4.9771E-15	2.2707E+10	9.1795E+11
I-133	2.6594E-03	2.3476E-12	1.0630E+13	8.3208E+12
I-135	4.5141E-04	1.2854E-13	5.7339E+11	3.4856E+12
Xe-133	3.4425E+01	1.8391E-07	8.3275E+17	6.3346E+16
Xe-135	3.0176E+00	1.1817E-09	5.2712E+15	1.0958E+16
Cs-134	7.6339E-07	5.9002E-13	2.6516E+12	6.3682E+09
Cs-136	2.1681E-07	2.9582E-15	1.3099E+10	1.8667E+09
Cs-137	6.1483E-07	7.0685E-12	3.1071E+13	5.1262E+09
Ba-140	2.5780E-07	3.5214E-15	1.5147E+10	1.8656E+09
La-140	8.7963E-08	1.5826E-16	6.8074E+08	2.7934E+08
La-141	3.7127E-11	6.5649E-21	2.8039E+04	4.2428E+06
Ce-141	6.3048E-09	2.2127E-16	9.4506E+08	4.4754E+07
Ce-143	3.7490E-09	5.6453E-18	2.3774E+07	3.5256E+07
Ce-144	5.1459E-09	1.6134E-15	6.7472E+09	3.6155E+07
Pr-143	2.5249E-09	3.7496E-17	1.5791E+08	1.7305E+07
Nd-147	9.4557E-10	1.1688E-17	4.7884E+07	6.8770E+06
Np-239	5.4454E-08	2.3472E-16	5.9144E+08	4.5257E+08
Pu-238	2.0827E-11	1.2165E-15	3.0782E+09	1.4612E+05
Pu-239	1.8288E-12	2.9423E-14	7.4137E+10	1.2812E+04
Pu-240	3.4163E-12	1.4992E-14	3.7619E+10	2.3969E+04
Pu-241	7.3624E-10	7.1471E-15	1.7859E+10	5.1660E+06
Am-241	4.9638E-13	1.4463E-16	3.6139E+08	3.4697E+03
Cm-242	1.2469E-10	3.7621E-17	9.3618E+07	8.7694E+05
Cm-244	8.2744E-12	1.0228E-16	2.5243E+08	5.8058E+04

CR Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	7.4256E+18	0.0000E+00	
Elemental I (atoms)	8.9633E+12	0.0000E+00	
Organic I (atoms)	9.8975E+13	0.0000E+00	
Aerosols (kg)	7.9301E-12	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0725E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1754E-12
Total I (Ci)			5.7735E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5113E+19
Elemental I (atoms)	0.0000E+00	4.0625E+14
Organic I (atoms)	0.0000E+00	1.1938E+15
Aerosols (kg)	0.0000E+00	3.9310E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2781E+19
Elemental I (atoms)	9.7412E+14	3.0127E+13

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Organic I (atoms)      2.8945E+15  8.9521E+13
Aerosols (kg)          9.4240E-10  2.9146E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    8.0390E+19  0.0000E+00
Elemental I (atoms)    4.2171E+14  0.0000E+00
Organic I (atoms)      1.1713E+15  0.0000E+00
Aerosols (kg)          4.1429E-10  0.0000E+00

EAB Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.6126E-01  8.6748E+00  9.2765E-01
Accumulated dose (rem)  2.4895E+00  1.9762E+01  3.0999E+00

LPZ Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0651E-02  1.7802E-01  2.6117E-02
Accumulated dose (rem)  1.7365E-01  7.1478E-01  1.9581E-01

CR Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.4713E-02  8.0550E+00  3.3215E-01
Accumulated dose (rem)  6.9305E-01  3.4398E+01  1.7596E+00

DW Compartment Nuclide Inventory:

Time (h) =  48.0000       Ci            kg          Atoms       Decay
Co-58                  3.4683E-03  1.0907E-10  1.1325E+15  4.3809E+15
Co-60                  4.2301E-03  3.7421E-09  3.7560E+16  5.2461E+15
Kr-85                  1.3132E+06  3.3471E+00  2.3714E+25  8.3120E+21
Kr-85m                 1.2886E+04  1.5658E-06  1.1094E+19  1.6041E+22
Kr-87                  1.8853E-04  6.6557E-15  4.6071E+10  5.9973E+21
Kr-88                  4.8140E+02  3.8391E-08  2.6273E+17  2.5109E+22
Rb-86                  1.1339E-01  1.3936E-09  9.7584E+15  3.1549E+17
Sr-89                  5.8334E+00  2.0079E-07  1.3586E+18  7.4248E+18
Sr-90                  7.8823E-01  5.7785E-06  3.8665E+19  9.7700E+17
Sr-91                  2.2470E-01  6.1987E-11  4.1022E+14  8.3939E+18
Sr-92                  3.6195E-05  2.8796E-15  1.8849E+10  6.9594E+18
Y-90                   3.1617E-01  5.8113E-10  3.8885E+15  1.1264E+16
Y-91                   9.1824E-02  3.7443E-09  2.4779E+16  9.4327E+16
Y-92                   1.8661E-03  1.9394E-13  1.2695E+12  1.1705E+17
Y-93                   3.1855E-03  9.5480E-13  6.1827E+12  9.7183E+16
Zr-95                  9.0906E-02  4.2316E-09  2.6824E+16  1.1506E+17
Zr-97                  1.2559E-02  6.5694E-12  4.0785E+13  1.0549E+17
Nb-95                  9.3002E-02  2.3784E-09  1.5077E+16  1.1536E+17
Mo-99                  7.1819E-01  1.4974E-09  9.1089E+15  1.4524E+18
Tc-99m                 7.3496E-01  1.3977E-10  8.5023E+14  1.2936E+18
Ru-103                 9.9590E-01  3.0858E-08  1.8042E+17  1.2773E+18
Ru-105                 4.0950E-04  6.0920E-14  3.4940E+11  7.4532E+17
Ru-106                 4.4707E-01  1.3363E-07  7.5919E+17  5.5610E+17
Rh-105                 3.1029E-01  3.6761E-10  2.1084E+15  8.5169E+17
Sb-127                 8.2623E-01  3.0939E-09  1.4671E+16  1.4527E+18
Sb-129                 1.6544E-03  2.9420E-13  1.3734E+12  3.6878E+18
Te-127                 9.7995E-01  3.7132E-10  1.7607E+15  1.4454E+18
Te-127m                2.0051E-01  2.1257E-08  1.0080E+17  2.4884E+17
Te-129                 5.5487E-01  2.6495E-11  1.2369E+14  3.8600E+18
Te-129m                6.3899E-01  2.1211E-08  9.9020E+16  8.1990E+17
Te-131m                8.2106E-01  1.0297E-09  4.7334E+15  2.9892E+18
Te-132                 1.1669E+01  3.8438E-08  1.7536E+17  2.1863E+19
I-131                  2.6392E+04  2.1288E-04  9.7864E+20  3.2658E+20
I-132                  1.3971E+01  1.3535E-09  6.1750E+15  2.3112E+20
I-133                  1.3168E+04  1.1624E-05  5.2634E+19  4.9562E+20
I-135                  4.0147E+02  1.1432E-07  5.0996E+17  3.3329E+20
Xe-133                 1.0861E+08  5.8023E-01  2.6272E+24  7.8467E+23
Xe-135                 1.7444E+06  6.8307E-04  3.0470E+21  1.0758E+23
Cs-134                 1.3336E+01  1.0308E-05  4.6324E+19  3.4554E+19
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Cs-136	3.5958E+00	4.9062E-08	2.1725E+17	1.0320E+19
Cs-137	1.0750E+01	1.2359E-04	5.4328E+20	2.7807E+19
Ba-139	3.1321E-10	1.9148E-20	8.2960E+04	6.3347E+18
Ba-140	8.2987E+00	1.1336E-07	4.8761E+17	1.1431E+19
La-140	4.8373E+00	8.7028E-09	3.7435E+16	1.3973E+17
La-141	1.8310E-05	3.2377E-15	1.3828E+10	8.5924E+16
La-142	3.6095E-11	2.5215E-21	1.0693E+04	6.0277E+16
Ce-141	2.0985E-01	7.3647E-09	3.1455E+16	2.7056E+17
Ce-143	7.6974E-02	1.1591E-10	4.8813E+14	2.5407E+17
Ce-144	1.7449E-01	5.4707E-08	2.2878E+17	2.1727E+17
Pr-143	8.6375E-02	1.2827E-09	5.4018E+15	1.0162E+17
Nd-147	3.0174E-02	3.7299E-10	1.5280E+15	4.2274E+16
Np-239	1.3790E+00	5.9441E-09	1.4978E+16	3.0275E+18
Pu-238	7.0800E-04	4.1356E-08	1.0464E+17	8.7726E+14
Pu-239	6.2289E-05	1.0021E-06	2.5251E+18	7.6844E+13
Pu-240	1.1612E-04	5.0960E-07	1.2787E+18	1.4391E+14
Pu-241	2.5022E-02	2.4290E-07	6.0697E+17	3.1019E+16
Am-241	1.6980E-05	4.9474E-09	1.2363E+16	2.0782E+13
Cm-242	4.2202E-03	1.2733E-09	3.1686E+15	5.2736E+15
Cm-244	2.8122E-04	3.4761E-09	8.5793E+15	3.4860E+14

DW Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	2.6344E+25	0.0000E+00	
Elemental I (atoms)	2.9930E+19	4.8566E+22	
Organic I (atoms)	9.9990E+20	0.0000E+00	
Aerosols (kg)	1.4262E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		6.7323E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		7.0502E-06
Total I (Ci)			3.9976E+04

DW to RB Transport Group Inventory:

Time (h) = 48.0000	Leakage Transport
Noble gases (atoms)	5.9392E+23
Elemental I (atoms)	2.3630E+18
Organic I (atoms)	2.6889E+19
Aerosols (kg)	1.6843E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8483E+23
Elemental I (atoms)	0.0000E+00	1.0730E+18
Organic I (atoms)	0.0000E+00	8.4175E+18
Aerosols (kg)	0.0000E+00	8.8436E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8483E+23
Elemental I (atoms)	0.0000E+00	1.0730E+18
Organic I (atoms)	0.0000E+00	8.4175E+18
Aerosols (kg)	0.0000E+00	8.8436E-04

RB Compartment Nuclide Inventory:

Time (h) = 48.0000	Ci	kg	Atoms	Decay
Co-58	2.0470E-02	6.4375E-10	6.6840E+15	1.2847E+14
Co-60	2.4966E-02	2.2086E-08	2.2168E+17	1.5525E+14
Kr-85	2.9068E+04	7.4091E-02	5.2492E+23	1.0769E+20
Kr-85m	2.8524E+02	3.4661E-08	2.4557E+17	6.4498E+19
Kr-87	4.1732E-06	1.4733E-16	1.0198E+09	6.9471E+18
Kr-88	1.0656E+01	8.4982E-10	5.8156E+15	6.4851E+19
Rb-86	1.3845E+00	1.7015E-08	1.1915E+17	9.0350E+15
Sr-89	3.4429E+01	1.1851E-06	8.0187E+18	2.1691E+17
Sr-90	4.6521E+00	3.4105E-05	2.2820E+20	2.8922E+16
Sr-91	1.3262E+00	3.6585E-10	2.4211E+15	7.0741E+16
Sr-92	2.1363E-04	1.6996E-14	1.1125E+11	1.7360E+16
Y-90	1.8863E+00	3.4670E-09	2.3199E+16	6.3734E+15

Y-91	5.4729E-01	2.2316E-08	1.4768E+17	3.2599E+15
Y-92	1.1472E-02	1.1922E-12	7.8038E+12	1.7821E+16
Y-93	1.8801E-02	5.6352E-12	3.6491E+13	8.6398E+14
Zr-95	5.3653E-01	2.4975E-08	1.5832E+17	3.3707E+15
Zr-97	7.4121E-02	3.8773E-11	2.4072E+14	1.3937E+15
Nb-95	5.4890E-01	1.4037E-08	8.8983E+16	3.4128E+15
Mo-99	4.2388E+00	8.8379E-09	5.3761E+16	3.4015E+16
Tc-99m	4.3377E+00	8.2494E-10	5.0181E+15	3.2074E+16
Ru-103	5.8778E+00	1.8212E-07	1.0648E+18	3.7174E+16
Ru-105	2.4169E-03	3.5955E-13	2.0621E+12	3.0389E+15
Ru-106	2.6386E+00	7.8869E-07	4.4807E+18	1.6433E+16
Rh-105	1.8313E+00	2.1697E-09	1.2444E+16	1.8189E+16
Sb-127	4.8764E+00	1.8260E-08	8.6587E+16	3.6305E+16
Sb-129	9.7642E-03	1.7364E-12	8.1059E+12	1.4633E+16
Te-127	5.7837E+00	2.1915E-09	1.0392E+16	3.8998E+16
Te-127m	1.1834E+00	1.2546E-07	5.9491E+17	7.3634E+15
Te-129	3.2748E+00	1.5637E-10	7.3001E+14	3.0259E+16
Te-129m	3.7713E+00	1.2519E-07	5.8442E+17	2.3904E+16
Te-131m	4.8459E+00	6.0771E-09	2.7937E+16	5.4227E+16
Te-132	6.8873E+01	2.2686E-07	1.0350E+18	5.3041E+17
I-131	1.1624E+03	9.3760E-06	4.3102E+19	6.2598E+18
I-132	8.2209E+01	7.9643E-09	3.6335E+16	9.7855E+17
I-133	5.7964E+02	5.1168E-07	2.3169E+18	6.4390E+18
I-135	1.7672E+01	5.0322E-09	2.2448E+16	1.9652E+18
Xe-133	2.4042E+06	1.2844E-02	5.8157E+22	9.7908E+21
Xe-135	3.8642E+04	1.5131E-05	6.7499E+19	7.6065E+20
Cs-134	1.6283E+02	1.2585E-04	5.6560E+20	1.0252E+18
Cs-136	4.3903E+01	5.9903E-07	2.6525E+18	2.9106E+17
Cs-137	1.3126E+02	1.5090E-03	6.6332E+21	8.2570E+17
Ba-139	1.8486E-09	1.1301E-19	4.8963E+05	8.0676E+15
Ba-140	4.8979E+01	6.6904E-07	2.8779E+18	3.2119E+17
La-140	2.8829E+01	5.1867E-08	2.2311E+17	1.0315E+17
La-141	1.0807E-04	1.9109E-14	8.1614E+10	3.1033E+14
La-142	2.1303E-10	1.4882E-20	6.3113E+04	8.5796E+13
Ce-141	1.2382E+00	4.3455E-08	1.8560E+17	7.8575E+15
Ce-143	4.5430E-01	6.8410E-10	2.8809E+15	4.8004E+15
Ce-144	1.0298E+00	3.2288E-07	1.3503E+18	6.4171E+15
Pr-143	5.1072E-01	7.5844E-09	3.1940E+16	3.1279E+15
Nd-147	1.7809E-01	2.2014E-09	9.0184E+15	1.1780E+15
Np-239	8.1388E+00	3.5082E-08	8.8398E+16	6.8304E+16
Pu-238	4.1786E-03	2.4408E-07	6.1760E+17	2.5973E+13
Pu-239	3.6763E-04	5.9146E-06	1.4903E+19	2.2805E+12
Pu-240	6.8535E-04	3.0077E-06	7.5470E+18	4.2605E+12
Pu-241	1.4768E-01	1.4336E-06	3.5823E+18	9.1817E+14
Am-241	1.0023E-04	2.9203E-08	7.2972E+16	6.1908E+11
Cm-242	2.4907E-02	7.5152E-09	1.8701E+16	1.5548E+14
Cm-244	1.6598E-03	2.0516E-08	5.0635E+16	1.0319E+13

RB Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	5.8315E+23	0.0000E+00	
Elemental I (atoms)	1.7353E+18	0.0000E+00	
Organic I (atoms)	2.2232E+19	0.0000E+00	
Aerosols (kg)	1.6888E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7546E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9391E-08
Total I (Ci)			1.8419E+03

DW to RB Transport Group Inventory:

Time (h) = 48.0000 Leakage Transport	
Noble gases (atoms)	5.9392E+23
Elemental I (atoms)	2.3630E+18
Organic I (atoms)	2.6889E+19
Aerosols (kg)	1.6843E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00

Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 48.0000	Ci	kg	Atoms	Decay
Co-58	1.2094E-11	3.8033E-19	3.9490E+06	8.0138E+05
Co-60	1.4750E-11	1.3049E-17	1.3097E+08	9.6386E+05
Kr-85	1.5430E-01	3.9329E-07	2.7864E+18	1.1272E+15
Kr-85m	1.5141E-03	1.8399E-13	1.3035E+12	1.4509E+15
Kr-88	5.6565E-05	4.5110E-15	3.0871E+10	1.6479E+15
Rb-86	7.5720E-10	9.3060E-18	6.5165E+07	6.2166E+07
Sr-89	2.0341E-08	7.0015E-16	4.7375E+09	1.3557E+09
Sr-90	2.7485E-09	2.0149E-14	1.3482E+11	1.7953E+08
Sr-91	7.8353E-10	2.1615E-19	1.4304E+06	7.9581E+08
Y-90	1.1140E-09	2.0476E-18	1.3701E+07	2.1308E+07
Y-91	3.2324E-10	1.3180E-17	8.7225E+07	1.9353E+07
Y-93	1.1108E-11	3.3293E-21	2.1559E+04	9.5220E+06
Zr-95	3.1698E-10	1.4755E-17	9.3535E+07	2.1037E+07
Zr-97	4.3791E-11	2.2907E-20	1.4222E+05	1.2953E+07
Nb-95	3.2429E-10	8.2933E-18	5.2572E+07	2.1191E+07
Mo-99	2.5043E-09	5.2215E-18	3.1762E+07	2.3840E+08
Tc-99m	2.5628E-09	4.8738E-19	2.9647E+06	2.2099E+08
Ru-103	3.4727E-09	1.0760E-16	6.2911E+08	2.3281E+08
Ru-106	1.5589E-09	4.6596E-16	2.6473E+09	1.0210E+08
Rh-105	1.0820E-09	1.2819E-18	7.3519E+06	1.3764E+08
Sb-127	2.8810E-09	1.0788E-17	5.1156E+07	2.4607E+08
Te-127	3.4170E-09	1.2948E-18	6.1396E+06	2.5585E+08
Te-127m	6.9916E-10	7.4122E-17	3.5148E+08	4.5722E+07
Te-129	1.9348E-09	9.2387E-20	4.3129E+05	3.0030E+08
Te-129m	2.2281E-09	7.3962E-17	3.4528E+08	1.4979E+08
Te-131m	2.8630E-09	3.5904E-18	1.6505E+07	4.3255E+08
Te-132	4.0691E-08	1.3403E-16	6.1148E+08	3.6506E+09
I-131	9.5984E-04	7.7422E-12	3.5591E+13	9.1710E+12
I-132	3.1945E-06	3.0948E-16	1.4119E+09	9.4562E+11
I-133	4.7882E-04	4.2268E-13	1.9139E+12	1.0702E+13
I-135	1.4598E-05	4.1569E-15	1.8543E+10	3.7079E+12
Xe-133	1.2762E+01	6.8177E-08	3.0870E+17	1.0638E+17
Xe-135	2.0497E-01	8.0265E-11	3.5805E+14	1.2851E+16
Cs-134	8.9057E-08	6.8832E-14	3.0934E+11	6.9173E+09
Cs-136	2.4012E-08	3.2763E-16	1.4507E+09	2.0196E+09
Cs-137	7.1788E-08	8.2533E-13	3.6279E+12	5.5687E+09
Ba-140	2.8937E-08	3.9527E-16	1.7003E+09	2.0487E+09
La-140	1.7027E-08	3.0634E-17	1.3177E+08	3.5851E+08
Ce-141	7.3153E-10	2.5674E-17	1.0965E+08	4.9286E+07
Ce-143	2.6840E-10	4.0417E-19	1.7021E+06	3.7521E+07
Ce-144	6.0842E-10	1.9076E-16	7.9776E+08	3.9881E+07
Pr-143	3.0172E-10	4.4806E-18	1.8869E+07	1.9143E+07
Nd-147	1.0522E-10	1.3006E-18	5.3282E+06	7.5461E+06
Np-239	4.8085E-09	2.0727E-17	5.2226E+07	4.8797E+08
Pu-238	2.4687E-12	1.4420E-16	3.6488E+08	1.6121E+05
Pu-239	2.1720E-13	3.4944E-15	8.8049E+09	1.4139E+04
Pu-240	4.0491E-13	1.7770E-15	4.4588E+09	2.6445E+04
Pu-241	8.7250E-11	8.4699E-16	2.1165E+09	5.6996E+06
Am-241	5.9216E-14	1.7253E-17	4.3112E+07	3.8303E+03
Cm-242	1.4715E-11	4.4400E-18	1.1049E+07	9.6716E+05
Cm-244	9.8061E-13	1.2121E-17	2.9916E+07	6.4055E+04

CR Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	3.0955E+18	0.0000E+00	
Elemental I (atoms)	1.3709E+12	0.0000E+00	
Organic I (atoms)	3.6143E+13	0.0000E+00	
Aerosols (kg)	9.2582E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.6363E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.8083E-13
Total I (Ci)			1.4565E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported

Noble gases (atoms)	0.0000E+00	4.1852E+19
Elemental I (atoms)	0.0000E+00	4.4134E+14
Organic I (atoms)	0.0000E+00	1.8720E+15
Aerosols (kg)	0.0000E+00	4.2216E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0463E+20
Elemental I (atoms)	1.0592E+15	3.2759E+13
Organic I (atoms)	4.5391E+15	1.4038E+14
Aerosols (kg)	1.0129E-09	3.1325E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	1.4322E+20	0.0000E+00
Elemental I (atoms)	4.6666E+14	0.0000E+00
Organic I (atoms)	1.9571E+15	0.0000E+00
Aerosols (kg)	4.5249E-10	0.0000E+00

EAB Doses:

Time (h) = 72.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.9802E-01	7.9808E+00	7.4201E-01
Accumulated dose (rem)	2.9875E+00	2.7743E+01	3.8419E+00

LPZ Doses:

Time (h) = 72.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5553E-02	1.6378E-01	2.0560E-02
Accumulated dose (rem)	1.8920E-01	8.7856E-01	2.1637E-01

CR Doses:

Time (h) = 72.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.7523E-02	6.7863E+00	2.6500E-01
Accumulated dose (rem)	7.5058E-01	4.1185E+01	2.0246E+00

DW Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	3.3932E-03	1.0671E-10	1.1080E+15	4.3918E+15
Co-60	4.1777E-03	3.6959E-09	3.7095E+16	5.2596E+15
Kr-85	1.2972E+06	3.3063E+00	2.3425E+25	1.2483E+22
Kr-85m	3.1061E+02	3.7743E-08	2.6740E+17	1.6052E+22
Kr-87	3.8799E-10	1.3698E-20	9.4815E+04	5.9973E+21
Kr-88	1.3594E+00	1.0841E-10	7.4189E+14	2.5110E+22
Rb-86	1.0794E-01	1.3266E-09	9.2896E+15	3.1584E+17
Sr-89	5.6847E+00	1.9567E-07	1.3240E+18	7.4432E+18
Sr-90	7.7871E-01	5.7087E-06	3.8198E+19	9.7951E+17
Sr-91	3.8536E-02	1.0631E-11	7.0350E+13	8.3942E+18
Sr-92	7.7171E-08	6.1396E-18	4.0188E+07	6.9594E+18
Y-90	4.2009E-01	7.7213E-10	5.1665E+15	1.2435E+16
Y-91	9.0170E-02	3.6768E-09	2.4332E+16	9.4618E+16
Y-92	1.7677E-05	1.8371E-15	1.2025E+10	1.1705E+17
Y-93	6.0619E-04	1.8169E-13	1.1766E+12	9.7188E+16
Zr-95	8.8846E-02	4.1357E-09	2.6216E+16	1.1535E+17
Zr-97	4.6365E-03	2.4254E-12	1.5058E+13	1.0552E+17
Nb-95	9.1818E-02	2.3481E-09	1.4885E+16	1.1565E+17
Mo-99	5.5147E-01	1.1498E-09	6.9944E+15	1.4544E+18
Tc-99m	5.6531E-01	1.0751E-10	6.5398E+14	1.2955E+18
Ru-103	9.6672E-01	2.9954E-08	1.7513E+17	1.2804E+18
Ru-105	9.5459E-06	1.4201E-15	8.1448E+09	7.4532E+17
Ru-106	4.4087E-01	1.3178E-07	7.4865E+17	5.5752E+17
Rh-105	1.9155E-01	2.2694E-10	1.3016E+15	8.5247E+17
Sb-127	6.8180E-01	2.5531E-09	1.2106E+16	1.4551E+18
Sb-129	3.4754E-05	6.1802E-15	2.8851E+10	3.6878E+18
Te-127	8.4559E-01	3.2041E-10	1.5193E+15	1.4483E+18
Te-127m	1.9770E-01	2.0959E-08	9.9383E+16	2.4948E+17

Te-129	5.3480E-01	2.5537E-11	1.1921E+14	3.8613E+18
Te-129m	6.1842E-01	2.0528E-08	9.5833E+16	8.2191E+17
Te-131m	4.6591E-01	5.8428E-10	2.6860E+15	2.9912E+18
Te-132	9.3199E+00	3.0699E-08	1.4005E+17	2.1896E+19
I-131	2.3921E+04	1.9295E-04	8.8701E+20	4.0692E+20
I-132	1.1124E+01	1.0777E-09	4.9168E+15	2.3116E+20
I-133	5.8469E+03	5.1614E-06	2.3371E+19	5.2444E+20
I-135	3.2019E+01	9.1174E-09	4.0671E+16	3.3376E+20
Xe-133	9.4020E+07	5.0229E-01	2.2744E+24	1.1079E+24
Xe-135	2.7651E+05	1.0828E-04	4.8300E+20	1.1013E+23
Cs-134	1.3164E+01	1.0174E-05	4.5725E+19	3.4597E+19
Cs-136	3.3695E+00	4.5974E-08	2.0358E+17	1.0331E+19
Cs-137	1.0620E+01	1.2210E-04	5.3672E+20	2.7841E+19
Ba-140	7.7648E+00	1.0606E-07	4.5624E+17	1.1457E+19
La-140	5.8805E+00	1.0580E-08	4.5509E+16	1.5681E+17
La-141	2.6248E-07	4.6412E-17	1.9823E+08	8.5924E+16
Ce-141	2.0295E-01	7.1227E-09	3.0421E+16	2.7122E+17
Ce-143	4.5937E-02	6.9173E-11	2.9131E+14	2.5427E+17
Ce-144	1.7197E-01	5.3918E-08	2.2549E+17	2.1783E+17
Pr-143	8.4058E-02	1.2483E-09	5.2569E+15	1.0189E+17
Nd-147	2.7988E-02	3.4596E-10	1.4173E+15	4.2367E+16
Np-239	1.0150E+00	4.3754E-09	1.1025E+16	3.0313E+18
Pu-238	6.9956E-04	4.0863E-08	1.0340E+17	8.7951E+14
Pu-239	6.1634E-05	9.9159E-07	2.4985E+18	7.7042E+13
Pu-240	1.1473E-04	5.0348E-07	1.2633E+18	1.4428E+14
Pu-241	2.4718E-02	2.3995E-07	5.9959E+17	3.1098E+16
Am-241	1.6885E-05	4.9196E-09	1.2293E+16	2.0836E+13
Cm-242	4.1517E-03	1.2527E-09	3.1173E+15	5.2870E+15
Cm-244	2.7782E-04	3.4339E-09	8.4753E+15	3.4949E+14

DW Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5700E+25	0.0000E+00	
Elemental I (atoms)	2.6410E+19	4.8566E+22	
Organic I (atoms)	8.8229E+20	0.0000E+00	
Aerosols (kg)	1.4083E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.8612E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.0005E-06
Total I (Ci)			2.9811E+04

DW to RB Transport Group Inventory:

Time (h) = 72.0000	Leakage Transport
Noble gases (atoms)	7.8910E+23
Elemental I (atoms)	2.5742E+18
Organic I (atoms)	3.3944E+19
Aerosols (kg)	1.6853E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.4453E+23
Elemental I (atoms)	0.0000E+00	1.1376E+18
Organic I (atoms)	0.0000E+00	1.0576E+19
Aerosols (kg)	0.0000E+00	8.8469E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.4453E+23
Elemental I (atoms)	0.0000E+00	1.1376E+18
Organic I (atoms)	0.0000E+00	1.0576E+19
Aerosols (kg)	0.0000E+00	8.8469E-04

RB Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	2.0296E-02	6.3828E-10	6.6272E+15	1.9363E+14
Co-60	2.4988E-02	2.2106E-08	2.2188E+17	2.3510E+14
Kr-85	3.8851E+04	9.9026E-02	7.0158E+23	2.1694E+20

Kr-85m	9.3028E+00	1.1304E-09	8.0089E+15	6.4759E+19
Kr-88	4.0714E-02	3.2469E-12	2.2220E+13	6.4857E+19
Rb-86	1.3348E+00	1.6404E-08	1.1487E+17	1.3381E+16
Sr-89	3.4002E+01	1.1704E-06	7.9194E+18	3.2629E+17
Sr-90	4.6577E+00	3.4146E-05	2.2848E+20	4.3803E+16
Sr-91	2.3050E-01	6.3585E-11	4.2079E+14	7.2743E+16
Sr-92	4.6159E-07	3.6723E-17	2.4038E+08	1.7360E+16
Y-90	2.5283E+00	4.6470E-09	3.1094E+16	1.3393E+16
Y-91	5.4461E-01	2.2207E-08	1.4696E+17	5.0065E+15
Y-92	1.0990E-04	1.1421E-14	7.4761E+10	1.7829E+16
Y-93	3.6258E-03	1.0868E-12	7.0374E+12	8.9346E+14
Zr-95	5.3142E-01	2.4737E-08	1.5681E+17	5.0778E+15
Zr-97	2.7733E-02	1.4507E-11	9.0065E+13	1.5446E+15
Nb-95	5.4919E-01	1.4045E-08	8.9031E+16	5.1674E+15
Mo-99	3.2986E+00	6.8775E-09	4.1836E+16	4.6001E+16
Tc-99m	3.3813E+00	6.4305E-10	3.9117E+15	4.3733E+16
Ru-103	5.7823E+00	1.7916E-07	1.0475E+18	5.5812E+16
Ru-105	5.7098E-05	8.4941E-15	4.8717E+10	3.0409E+15
Ru-106	2.6370E+00	7.8820E-07	4.4780E+18	2.4866E+16
Rh-105	1.1457E+00	1.3574E-09	7.7851E+15	2.2863E+16
Sb-127	4.0781E+00	1.5271E-08	7.2412E+16	5.0580E+16
Sb-129	2.0787E-04	3.6966E-14	1.7257E+11	1.4641E+16
Te-127	5.0578E+00	1.9165E-09	9.0876E+15	5.5727E+16
Te-127m	1.1825E+00	1.2536E-07	5.9445E+17	1.1145E+16
Te-129	3.1988E+00	1.5275E-10	7.1307E+14	3.8044E+16
Te-129m	3.6990E+00	1.2279E-07	5.7321E+17	3.5844E+16
Te-131m	2.7868E+00	3.4948E-09	1.6066E+16	6.6125E+16
Te-132	5.5746E+01	1.8362E-07	8.3772E+17	7.2887E+17
I-131	1.2471E+03	1.0059E-05	4.6244E+19	1.0131E+19
I-132	6.6538E+01	6.4462E-09	2.9409E+16	1.1840E+18
I-133	3.0462E+02	2.6891E-07	1.2176E+18	7.8131E+18
I-135	1.6682E+00	4.7501E-10	2.1190E+15	1.9870E+18
Xe-133	2.8160E+06	1.5044E-02	6.8120E+22	1.8229E+22
Xe-135	8.2878E+03	3.2454E-06	1.4477E+19	8.2453E+20
Cs-134	1.6278E+02	1.2581E-04	5.6542E+20	1.5457E+18
Cs-136	4.1666E+01	5.6850E-07	2.5173E+18	4.2781E+17
Cs-137	1.3133E+02	1.5098E-03	6.6368E+21	1.2454E+18
Ba-140	4.6444E+01	6.3441E-07	2.7289E+18	4.7368E+17
La-140	3.5358E+01	6.3613E-08	2.7364E+17	2.0543E+17
La-141	1.5700E-06	2.7761E-16	1.1857E+09	3.1041E+14
Ce-141	1.2136E+00	4.2592E-08	1.8191E+17	1.1776E+16
Ce-143	2.7476E-01	4.1375E-10	1.7424E+15	5.9418E+15
Ce-144	1.0286E+00	3.2250E-07	1.3487E+18	9.7073E+15
Pr-143	5.0367E-01	7.4796E-09	3.1499E+16	4.7505E+15
Nd-147	1.6741E-01	2.0693E-09	8.4774E+15	1.7301E+15
Np-239	6.0713E+00	2.6171E-08	6.5942E+16	9.0857E+16
Pu-238	4.1843E-03	2.4442E-07	6.1845E+17	3.9341E+13
Pu-239	3.6865E-04	5.9311E-06	1.4945E+19	3.4575E+12
Pu-240	6.8622E-04	3.0115E-06	7.5565E+18	6.4528E+12
Pu-241	1.4785E-01	1.4352E-06	3.5864E+18	1.3906E+15
Am-241	1.0100E-04	2.9429E-08	7.3537E+16	9.4070E+11
Cm-242	2.4833E-02	7.4927E-09	1.8645E+16	2.3499E+14
Cm-244	1.6617E-03	2.0540E-08	5.0694E+16	1.5628E+13

RB Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	7.6972E+23	0.0000E+00	
Elemental I (atoms)	1.7494E+18	0.0000E+00	
Organic I (atoms)	2.6517E+19	0.0000E+00	
Aerosols (kg)	1.6890E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8690E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9668E-08
Total I (Ci)			1.6199E+03

DW to RB Transport Group Inventory:

Time (h) = 72.0000	Leakage Transport
Noble gases (atoms)	7.8910E+23
Elemental I (atoms)	2.5742E+18
Organic I (atoms)	3.3944E+19
Aerosols (kg)	1.6853E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	3.9017E-12	1.2270E-19	1.2740E+06	8.2408E+05
Co-60	4.8038E-12	4.2497E-18	4.2654E+07	9.9166E+05
Kr-85	1.6155E-01	4.1176E-07	2.9173E+18	1.6352E+15
Kr-85m	3.8682E-05	4.7004E-15	3.3302E+10	1.4521E+15
Kr-88	1.6929E-07	1.3501E-17	9.2393E+07	1.6479E+15
Rb-86	2.3466E-10	2.8840E-18	2.0195E+07	6.3564E+07
Sr-89	6.5366E-09	2.2500E-16	1.5224E+09	1.3939E+09
Sr-90	8.9540E-10	6.5642E-15	4.3923E+10	1.8471E+08
Sr-91	4.4310E-11	1.2224E-20	8.0893E+04	7.9661E+08
Y-90	4.8588E-10	8.9306E-19	5.9757E+06	2.3685E+07
Y-91	1.0464E-10	4.2670E-18	2.8238E+07	1.9961E+07
Zr-95	1.0216E-10	4.7554E-18	3.0145E+07	2.1632E+07
Zr-97	5.3313E-12	2.7888E-21	1.7314E+04	1.3010E+07
Nb-95	1.0558E-10	2.7000E-18	1.7115E+07	2.1802E+07
Mo-99	6.3412E-10	1.3221E-18	8.0425E+06	2.4267E+08
Tc-99m	6.5002E-10	1.2362E-19	7.5198E+05	2.2515E+08
Ru-103	1.1116E-09	3.4442E-17	2.0138E+08	2.3930E+08
Ru-106	5.0693E-10	1.5152E-16	8.6084E+08	1.0503E+08
Rh-105	2.2025E-10	2.6094E-19	1.4966E+06	1.3933E+08
Sb-127	7.8398E-10	2.9357E-18	1.3920E+07	2.5112E+08
Te-127	9.7230E-10	3.6842E-19	1.7470E+06	2.6174E+08
Te-127m	2.2732E-10	2.4100E-17	1.1428E+08	4.7039E+07
Te-129	6.1495E-10	2.9364E-20	1.3708E+05	3.0302E+08
Te-129m	7.1109E-10	2.3605E-17	1.1019E+08	1.5396E+08
Te-131m	5.3572E-10	6.7183E-19	3.0885E+06	4.3690E+08
Te-132	1.0717E-08	3.5299E-17	1.6104E+08	3.7210E+09
I-131	9.0356E-04	7.2883E-12	3.3505E+13	1.2151E+13
I-132	8.8816E-07	8.6044E-17	3.9255E+08	9.5214E+11
I-133	2.2083E-04	1.9494E-13	8.8266E+11	1.1768E+13
I-135	1.2093E-06	3.4434E-16	1.5361E+09	3.7251E+12
Xe-133	1.1709E+01	6.2555E-08	2.8324E+17	1.4573E+17
Xe-135	3.4437E-02	1.3485E-11	6.0155E+13	1.3159E+16
Cs-134	2.8617E-08	2.2118E-14	9.9403E+10	7.0843E+09
Cs-136	7.3250E-09	9.9944E-17	4.4256E+08	2.0637E+09
Cs-137	2.3088E-08	2.6544E-13	1.1668E+12	5.7033E+09
Ba-140	8.9284E-09	1.2196E-16	5.2461E+08	2.1020E+09
La-140	6.7955E-09	1.2226E-17	5.2590E+07	3.9344E+08
Ce-141	2.3330E-10	8.1879E-18	3.4971E+07	5.0653E+07
Ce-143	5.2821E-11	7.9539E-20	3.3496E+05	3.7937E+07
Ce-144	1.9774E-10	6.1997E-17	2.5928E+08	4.1026E+07
Pr-143	9.6817E-11	1.4378E-18	6.0548E+06	1.9708E+07
Nd-147	3.2182E-11	3.9781E-19	1.6297E+06	7.7394E+06
Np-239	1.1672E-09	5.0310E-18	1.2677E+07	4.9604E+08
Pu-238	8.0439E-13	4.6986E-17	1.1889E+08	1.6586E+05
Pu-239	7.0870E-14	1.1402E-15	2.8730E+09	1.4548E+04
Pu-240	1.3192E-13	5.7893E-16	1.4527E+09	2.7208E+04
Pu-241	2.8422E-11	2.7591E-16	6.8945E+08	5.8640E+06
Am-241	1.9417E-14	5.6574E-18	1.4137E+07	3.9422E+03
Cm-242	4.7739E-12	1.4404E-18	3.5844E+06	9.9485E+05
Cm-244	3.1945E-13	3.9485E-18	9.7453E+06	6.5903E+04

CR Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	3.2006E+18	0.0000E+00	
Elemental I (atoms)	6.2081E+11	0.0000E+00	
Organic I (atoms)	3.3765E+13	0.0000E+00	
Aerosols (kg)	2.9774E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.2880E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.3662E-13
Total I (Ci)			1.1265E-03

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9947E+19
Elemental I (atoms)	0.0000E+00	4.5580E+14
Organic I (atoms)	0.0000E+00	2.5263E+15
Aerosols (kg)	0.0000E+00	4.3190E-10

Environment to CR Filtered Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.4987E+20
Elemental I (atoms)	1.0943E+15	3.3843E+13
Organic I (atoms)	6.1258E+15	1.8946E+14
Aerosols (kg)	1.0365E-09	3.2056E-11

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.0641E+20	0.0000E+00
Elemental I (atoms)	4.8286E+14	0.0000E+00
Organic I (atoms)	2.6589E+15	0.0000E+00
Aerosols (kg)	4.6358E-10	0.0000E+00

EAB Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.2397E-01	7.1581E+00	6.4235E-01
Accumulated dose (rem)	3.4115E+00	3.4901E+01	4.4842E+00

LPZ Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3240E-02	1.4690E-01	1.7722E-02
Accumulated dose (rem)	2.0244E-01	1.0255E+00	2.3409E-01

CR Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.9091E-02	6.0962E+00	2.3507E-01
Accumulated dose (rem)	7.9967E-01	4.7281E+01	2.2597E+00

DW Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	3.3198E-03	1.0440E-10	1.0840E+15	4.4025E+15
Co-60	4.1260E-03	3.6501E-09	3.6636E+16	5.2728E+15
Kr-85	1.2814E+06	3.2660E+00	2.3139E+25	1.6604E+22
Kr-85m	7.4869E+00	9.0976E-10	6.4455E+15	1.6052E+22
Kr-88	3.8386E-03	3.0613E-13	2.0949E+12	2.5110E+22
Rb-86	1.0276E-01	1.2629E-09	8.8433E+15	3.1618E+17
Sr-89	5.5399E+00	1.9069E-07	1.2903E+18	7.4612E+18
Sr-90	7.6930E-01	5.6397E-06	3.7737E+19	9.8198E+17
Sr-91	6.6087E-03	1.8231E-12	1.2065E+13	8.3943E+18
Sr-92	1.6453E-10	1.3090E-20	8.5685E+04	6.9594E+18
Y-90	4.9709E-01	9.1366E-10	6.1135E+15	1.3894E+16
Y-91	8.8126E-02	3.5935E-09	2.3781E+16	9.4903E+16
Y-92	1.6087E-07	1.6718E-17	1.0943E+08	1.1705E+17
Y-93	1.1536E-04	3.4576E-14	2.2389E+11	9.7189E+16
Zr-95	8.6832E-02	4.0419E-09	2.5622E+16	1.1563E+17
Zr-97	1.7118E-03	8.9542E-13	5.5591E+12	1.0553E+17
Nb-95	9.0631E-02	2.3178E-09	1.4692E+16	1.1594E+17
Mo-99	4.2346E-01	8.8291E-10	5.3707E+15	1.4559E+18
Tc-99m	4.3414E-01	8.2564E-11	5.0223E+14	1.2970E+18
Ru-103	9.3840E-01	2.9076E-08	1.7000E+17	1.2835E+18
Ru-105	2.2253E-07	3.3104E-17	1.8986E+08	7.4532E+17
Ru-106	4.3475E-01	1.2995E-07	7.3827E+17	5.5892E+17
Rh-105	1.1822E-01	1.4007E-10	8.0334E+14	8.5296E+17

Sb-127	5.6263E-01	2.1068E-09	9.9901E+15	1.4570E+18
Sb-129	7.3006E-07	1.2983E-16	6.0607E+08	3.6878E+18
Te-127	7.3075E-01	2.7689E-10	1.3130E+15	1.4507E+18
Te-127m	1.9479E-01	2.0650E-08	9.7920E+16	2.5010E+17
Te-129	5.1754E-01	2.4713E-11	1.1537E+14	3.8626E+18
Te-129m	5.9852E-01	1.9868E-08	9.2748E+16	8.2385E+17
Te-131m	2.6438E-01	3.3155E-10	1.5241E+15	2.9924E+18
Te-132	7.4435E+00	2.4518E-08	1.1186E+17	2.1923E+19
I-131	2.1682E+04	1.7489E-04	8.0397E+20	4.7973E+20
I-132	8.8846E+00	8.6073E-10	3.9268E+15	2.3118E+20
I-133	2.5962E+03	2.2918E-06	1.0377E+19	5.3724E+20
I-135	2.5536E+00	7.2715E-10	3.2437E+15	3.3379E+20
Xe-133	8.1392E+07	4.3483E-01	1.9689E+24	1.3877E+24
Xe-135	4.3824E+04	1.7161E-05	7.6552E+19	1.1053E+23
Cs-134	1.2994E+01	1.0043E-05	4.5134E+19	3.4638E+19
Cs-136	3.1574E+00	4.3081E-08	1.9076E+17	1.0341E+19
Cs-137	1.0492E+01	1.2062E-04	5.3023E+20	2.7875E+19
Ba-140	7.2653E+00	9.9241E-08	4.2689E+17	1.1481E+19
La-140	6.3875E+00	1.1492E-08	4.9433E+16	1.7632E+17
La-141	3.7626E-09	6.6532E-19	2.8416E+06	8.5924E+16
Ce-141	1.9628E-01	6.8886E-09	2.9421E+16	2.7185E+17
Ce-143	2.7414E-02	4.1282E-11	1.7385E+14	2.5438E+17
Ce-144	1.6949E-01	5.3140E-08	2.2223E+17	2.1837E+17
Pr-143	8.0684E-02	1.1982E-09	5.0459E+15	1.0216E+17
Nd-147	2.5960E-02	3.2090E-10	1.3146E+15	4.2453E+16
Np-239	7.4715E-01	3.2206E-09	8.1150E+15	3.0341E+18
Pu-238	6.9123E-04	4.0376E-08	1.0216E+17	8.8173E+14
Pu-239	6.0962E-05	9.8078E-07	2.4713E+18	7.7238E+13
Pu-240	1.1335E-04	4.9743E-07	1.2482E+18	1.4465E+14
Pu-241	2.4418E-02	2.3704E-07	5.9231E+17	3.1177E+16
Am-241	1.6789E-05	4.8917E-09	1.2223E+16	2.0890E+13
Cm-242	4.0844E-03	1.2324E-09	3.0667E+15	5.3002E+15
Cm-244	2.7445E-04	3.3923E-09	8.3726E+15	3.5038E+14

DW Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5108E+25	0.0000E+00	
Elemental I (atoms)	2.3623E+19	4.8566E+22	
Organic I (atoms)	7.8918E+20	0.0000E+00	
Aerosols (kg)	1.3906E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.2063E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.2681E-06
Total I (Ci)			2.4289E+04

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	2.7618E+18
Organic I (atoms)	4.0214E+19
Aerosols (kg)	1.6864E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

RB Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	2.0123E-02	6.3285E-10	6.5709E+15	2.5824E+14
Co-60	2.5011E-02	2.2126E-08	2.2207E+17	3.1502E+14
Kr-85	4.8513E+04	1.2365E-01	8.7606E+23	3.5726E+20
Kr-85m	2.8345E-01	3.4444E-11	2.4403E+14	6.4767E+19
Kr-88	1.4533E-04	1.1590E-14	7.9315E+10	6.4857E+19
Rb-86	1.2869E+00	1.5816E-08	1.1075E+17	1.7571E+16
Sr-89	3.3581E+01	1.1559E-06	7.8212E+18	4.3432E+17
Sr-90	4.6632E+00	3.4186E-05	2.2875E+20	5.8702E+16
Sr-91	4.0060E-02	1.1051E-11	7.3132E+13	7.3091E+16
Sr-92	9.9734E-10	7.9347E-20	5.1939E+05	1.7360E+16
Y-90	3.0252E+00	5.5603E-09	3.7206E+16	2.2223E+16
Y-91	5.3940E-01	2.1995E-08	1.4556E+17	6.7394E+15
Y-92	1.0130E-06	1.0528E-16	6.8914E+08	1.7829E+16
Y-93	6.9925E-04	2.0959E-13	1.3572E+12	8.9914E+14
Zr-95	5.2635E-01	2.4501E-08	1.5531E+17	6.7685E+15
Zr-97	1.0376E-02	5.4277E-12	3.3697E+13	1.6010E+15
Nb-95	5.4937E-01	1.4049E-08	8.9060E+16	6.9227E+15
Mo-99	2.5668E+00	5.3519E-09	3.2555E+16	5.5327E+16
Tc-99m	2.6316E+00	5.0047E-10	3.0444E+15	5.2812E+16
Ru-103	5.6883E+00	1.7625E-07	1.0305E+18	7.4146E+16
Ru-105	1.3489E-06	2.0066E-16	1.1509E+09	3.0409E+15
Ru-106	2.6353E+00	7.8770E-07	4.4751E+18	3.3293E+16
Rh-105	7.1663E-01	8.4904E-10	4.8695E+15	2.5786E+16
Sb-127	3.4104E+00	1.2771E-08	6.0557E+16	6.2518E+16
Sb-129	4.4254E-06	7.8696E-16	3.6738E+09	1.4641E+16
Te-127	4.4295E+00	1.6784E-09	7.9588E+15	7.0357E+16
Te-127m	1.1807E+00	1.2517E-07	5.9356E+17	1.4922E+16
Te-129	3.1372E+00	1.4980E-10	6.9931E+14	4.5671E+16
Te-129m	3.6280E+00	1.2043E-07	5.6220E+17	4.7556E+16
Te-131m	1.6026E+00	2.0097E-09	9.2388E+15	7.2968E+16
Te-132	4.5120E+01	1.4862E-07	6.7803E+17	8.8950E+17
I-131	1.3078E+03	1.0549E-05	4.8495E+19	1.4232E+19
I-132	5.3855E+01	5.2174E-09	2.3803E+16	1.3502E+18
I-133	1.5649E+02	1.3815E-07	6.2552E+17	8.5272E+18
I-135	1.5393E-01	4.3831E-11	1.9553E+14	1.9891E+18
Xe-133	3.0816E+06	1.6463E-02	7.4544E+22	2.7734E+22
Xe-135	1.6603E+03	6.5016E-07	2.9003E+18	8.3783E+20
Cs-134	1.6273E+02	1.2577E-04	5.6524E+20	2.0660E+18
Cs-136	3.9543E+01	5.3953E-07	2.3891E+18	5.5758E+17
Cs-137	1.3140E+02	1.5107E-03	6.6404E+21	1.6654E+18
Ba-140	4.4040E+01	6.0156E-07	2.5876E+18	6.1828E+17
La-140	3.8841E+01	6.9880E-08	3.0059E+17	3.2343E+17
La-141	2.2808E-08	4.0329E-18	1.7225E+07	3.1041E+14
Ce-141	1.1895E+00	4.1745E-08	1.7829E+17	1.5617E+16
Ce-143	1.6618E-01	2.5024E-10	1.0538E+15	6.6321E+15
Ce-144	1.0274E+00	3.2212E-07	1.3471E+18	1.2994E+16
Pr-143	4.8992E-01	7.2755E-09	3.0639E+16	6.3392E+15
Nd-147	1.5736E-01	1.9452E-09	7.9687E+15	2.2490E+15
Np-239	4.5290E+00	1.9522E-08	4.9190E+16	1.0768E+17
Pu-238	4.1900E-03	2.4475E-07	6.1928E+17	5.2727E+13
Pu-239	3.6953E-04	5.9451E-06	1.4980E+19	4.6374E+12
Pu-240	6.8707E-04	3.0152E-06	7.5659E+18	8.6480E+12
Pu-241	1.4801E-01	1.4368E-06	3.5904E+18	1.8635E+15
Am-241	1.0178E-04	2.9655E-08	7.4101E+16	1.2648E+12
Cm-242	2.4758E-02	7.4702E-09	1.8589E+16	3.1426E+14
Cm-244	1.6636E-03	2.0563E-08	5.0752E+16	2.0944E+13

RB Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	9.5060E+23	0.0000E+00	
Elemental I (atoms)	1.7621E+18	0.0000E+00	
Organic I (atoms)	2.9963E+19	0.0000E+00	
Aerosols (kg)	1.6894E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9761E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0280E-08
Total I (Ci)			1.5183E+03

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23

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Elemental I (atoms)      2.7618E+18
Organic I (atoms)        4.0214E+19
Aerosols (kg)            1.6864E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg          Atoms       Decay
Co-58                  1.2484E-12  3.9261E-20  4.0765E+05  8.3133E+05
Co-60                  1.5516E-12  1.3726E-18  1.3777E+07  1.0006E+06
Kr-85                  1.6247E-01  4.1411E-07  2.9339E+18  2.1541E+15
Kr-85m                 9.4930E-07  1.1535E-16  8.1726E+08  1.4522E+15
Kr-88                  4.8672E-10  3.8816E-20  2.6563E+05  1.6479E+15
Rb-86                  7.1052E-11  8.7322E-19  6.1147E+06  6.3992E+07
Sr-89                  2.0833E-09  7.1709E-17  4.8521E+08  1.4060E+09
Sr-90                  2.8930E-10  2.1208E-15  1.4191E+10  1.8638E+08
Y-90                   1.8760E-10  3.4482E-19  2.3073E+06  2.4659E+07
Y-91                   3.3430E-11  1.3632E-18  9.0212E+06  2.0155E+07
Zr-95                  3.2654E-11  1.5200E-18  9.6353E+06  2.1822E+07
Nb-95                  3.4082E-11  8.7160E-19  5.5252E+06  2.1999E+07
Mo-99                  1.5924E-10  3.3202E-19  2.0197E+06  2.4374E+08
Tc-99m                 1.6326E-10  3.1049E-20  1.8887E+05  2.2619E+08
Ru-103                 3.5289E-10  1.0934E-17  6.3929E+07  2.4136E+08
Ru-106                 1.6349E-10  4.8867E-17  2.7763E+08  1.0598E+08
Rh-105                 4.4459E-11  5.2673E-20  3.0210E+05  1.3968E+08
Sb-127                 2.1158E-10  7.9227E-19  3.7568E+06  2.5248E+08
Te-127                 2.7480E-10  1.0413E-19  4.9375E+05  2.6340E+08
Te-127m                7.3250E-11  7.7656E-18  3.6823E+07  4.7463E+07
Te-129                 1.9462E-10  9.2933E-21  4.3384E+04  3.0387E+08
Te-129m                2.2507E-10  7.4713E-18  3.4878E+07  1.5527E+08
Te-131m                9.9420E-11  1.2468E-19  5.7316E+05  4.3771E+08
Te-132                 2.7991E-09  9.2201E-18  4.2064E+07  3.7394E+09
I-131                  8.2511E-04  6.6554E-12  3.0595E+13  1.4908E+13
I-132                  2.5046E-07  2.4265E-17  1.1070E+08  9.5394E+11
I-133                  9.8793E-05  8.7211E-14  3.9488E+11  1.2252E+13
I-135                  9.7174E-08  2.7670E-17  1.2343E+08  3.7265E+12
Xe-133                 1.0320E+01  5.5134E-08  2.4964E+17  1.8096E+17
Xe-135                 5.5569E-03  2.1760E-12  9.7067E+12  1.3209E+16
Cs-134                 8.9846E-09  6.9442E-15  3.1208E+10  7.1371E+09
Cs-136                 2.1832E-09  2.9788E-17  1.3190E+08  2.0769E+09
Cs-137                 7.2548E-09  8.3406E-14  3.6663E+11  5.7460E+09
Ba-140                 2.7321E-09  3.7320E-17  1.6053E+08  2.1183E+09
La-140                 2.4089E-09  4.3338E-18  1.8642E+07  4.0655E+08
Ce-141                 7.3794E-11  2.5899E-18  1.1061E+07  5.1085E+07
Ce-143                 1.0309E-11  1.5524E-20  6.5377E+04  3.8018E+07
Ce-144                 6.3737E-11  1.9984E-17  8.3572E+07  4.1395E+07
Pr-143                 3.0389E-11  4.5128E-19  1.9005E+06  1.9887E+07
Nd-147                 9.7624E-12  1.2067E-19  4.9437E+05  7.7980E+06
Np-239                 2.8097E-10  1.2111E-18  3.0517E+06  4.9798E+08
Pu-238                 2.5994E-13  1.5184E-17  3.8419E+07  1.6737E+05
Pu-239                 2.2925E-14  3.6883E-16  9.2934E+08  1.4681E+04
Pu-240                 4.2625E-14  1.8706E-16  4.6938E+08  2.7455E+04
Pu-241                 9.1824E-12  8.9139E-17  2.2274E+08  5.9170E+06
Am-241                 6.3142E-15  1.8397E-18  4.5971E+06  3.9785E+03
Cm-242                 1.5360E-12  4.6344E-19  1.1533E+06  1.0037E+06
Cm-244                 1.0321E-13  1.2757E-18  3.1485E+06  6.6499E+04

CR Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    3.1836E+18  0.0000E+00
Elemental I (atoms)    2.5057E+11  0.0000E+00
Organic I (atoms)      3.0739E+13  0.0000E+00
Aerosols (kg)          9.3607E-14  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.9425E-13
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Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 2.9774E-13
Total I (Ci) 9.2425E-04

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.8191E+19
Elemental I (atoms)	0.0000E+00	4.6138E+14
Organic I (atoms)	0.0000E+00	3.1267E+15
Aerosols (kg)	0.0000E+00	4.3499E-10

Environment to CR Filtered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9547E+20
Elemental I (atoms)	1.1078E+15	3.4262E+13
Organic I (atoms)	7.5817E+15	2.3449E+14
Aerosols (kg)	1.0440E-09	3.2287E-11

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.7024E+20	0.0000E+00
Elemental I (atoms)	4.8920E+14	0.0000E+00
Organic I (atoms)	3.3041E+15	0.0000E+00
Aerosols (kg)	4.6710E-10	0.0000E+00

EAB Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5868E+00	3.0343E+01	2.5109E+00
Accumulated dose (rem)	4.9983E+00	6.5245E+01	6.9952E+00

LPZ Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.4184E-02	1.7823E-01	1.9612E-02
Accumulated dose (rem)	2.1662E-01	1.2037E+00	2.5370E-01

CR Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	9.5247E-02	1.3382E+01	5.0284E-01
Accumulated dose (rem)	8.9492E-01	6.0663E+01	2.7625E+00

DW Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	2.9114E-03	9.1558E-11	9.5065E+14	4.4622E+15
Co-60	3.8291E-03	3.3874E-09	3.3999E+16	5.3491E+15
Kr-85	1.1905E+06	3.0343E+00	2.1497E+25	4.0293E+22
Kr-85m	1.4684E-09	1.7843E-19	1.2641E+06	1.6052E+22
Rb-86	7.6475E-02	9.3987E-10	6.5814E+15	3.1789E+17
Sr-89	4.7450E+00	1.6333E-07	1.1051E+18	7.5596E+18
Sr-90	7.1520E-01	5.2431E-06	3.5083E+19	9.9621E+17
Sr-91	1.6813E-07	4.6380E-17	3.0693E+08	8.3943E+18
Y-90	6.6518E-01	1.2226E-09	8.1808E+15	2.5510E+16
Y-91	7.6353E-02	3.1134E-09	2.0604E+16	9.6477E+16
Y-93	5.4781E-09	1.6420E-18	1.0632E+07	9.7189E+16
Zr-95	7.5675E-02	3.5226E-09	2.2330E+16	1.1718E+17
Zr-97	4.3346E-06	2.2675E-15	1.4077E+10	1.0553E+17
Nb-95	8.3520E-02	2.1359E-09	1.3540E+16	1.1761E+17
Mo-99	8.6799E-02	1.8098E-10	1.1009E+15	1.4600E+18
Tc-99m	8.8990E-02	1.6924E-11	1.0295E+14	1.3010E+18
Ru-103	7.8507E-01	2.4325E-08	1.4222E+17	1.2999E+18
Ru-106	3.9979E-01	1.1950E-07	6.7890E+17	5.6691E+17
Rh-105	6.5357E-03	7.7432E-12	4.4410E+13	8.5370E+17
Sb-127	1.7766E-01	6.6525E-10	3.1545E+15	1.4635E+18
Te-127	3.4816E-01	1.3193E-10	6.2557E+14	1.4601E+18

Te-127m	1.7652E-01	1.8714E-08	8.8740E+16	2.5366E+17
Te-129	4.2529E-01	2.0308E-11	9.4804E+13	3.8694E+18
Te-129m	4.9183E-01	1.6326E-08	7.6216E+16	8.3427E+17
Te-131m	8.8263E-03	1.1069E-11	5.0884E+13	2.9938E+18
Te-132	1.9317E+00	6.3629E-09	2.9029E+16	2.2001E+19
I-131	1.2021E+04	9.6964E-05	4.4575E+20	7.9382E+20
I-132	2.3057E+00	2.2338E-10	1.0191E+15	2.3127E+20
I-133	1.9897E+01	1.7564E-08	7.9529E+16	5.4738E+20
I-135	6.5716E-07	1.8712E-16	8.3473E+08	3.3380E+20
Xe-133	3.4255E+07	1.8300E-01	8.2862E+23	2.4322E+24
Xe-135	6.9419E-01	2.7184E-10	1.2126E+15	1.1061E+23
Cs-134	1.2018E+01	9.2888E-06	4.1745E+19	3.4878E+19
Cs-136	2.1378E+00	2.9168E-08	1.2916E+17	1.0391E+19
Cs-137	9.7544E+00	1.1214E-04	4.9295E+20	2.8069E+19
Ba-140	4.8751E+00	6.6591E-08	2.8644E+17	1.1596E+19
La-140	5.5030E+00	9.9005E-09	4.2587E+16	2.9456E+17
Ce-141	1.6062E-01	5.6371E-09	2.4076E+16	2.7526E+17
Ce-143	1.2385E-03	1.8650E-12	7.8539E+12	2.5454E+17
Ce-144	1.5534E-01	4.8704E-08	2.0368E+17	2.2148E+17
Pr-143	5.7198E-02	8.4941E-10	3.5771E+15	1.0347E+17
Nd-147	1.6531E-02	2.0435E-10	8.3714E+14	4.2854E+16
Np-239	1.1884E-01	5.1225E-10	1.2907E+15	3.0406E+18
Pu-238	6.4327E-04	3.7575E-08	9.5076E+16	8.9452E+14
Pu-239	5.6851E-05	9.1464E-07	2.3046E+18	7.8367E+13
Pu-240	1.0542E-04	4.6263E-07	1.1608E+18	1.4674E+14
Pu-241	2.2691E-02	2.2028E-07	5.5043E+17	3.1628E+16
Am-241	1.6212E-05	4.7235E-09	1.1803E+16	2.1206E+13
Cm-242	3.7028E-03	1.1172E-09	2.7802E+15	5.3748E+15
Cm-244	2.5509E-04	3.1530E-09	7.7819E+15	3.5545E+14

DW Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	2.2326E+25	0.0000E+00	
Elemental I (atoms)	1.2933E+19	4.8566E+22	
Organic I (atoms)	4.3205E+20	0.0000E+00	
Aerosols (kg)	1.2903E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8309E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.8314E-06
Total I (Ci)			1.2043E+04

DW to RB Transport Group Inventory:

Time (h) = 240.0000	Leakage Transport
Noble gases (atoms)	2.0430E+24
Elemental I (atoms)	3.5589E+18
Organic I (atoms)	6.6841E+19
Aerosols (kg)	1.6924E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2812E+23
Elemental I (atoms)	0.0000E+00	1.4388E+18
Organic I (atoms)	0.0000E+00	2.0640E+19
Aerosols (kg)	0.0000E+00	8.8685E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2812E+23
Elemental I (atoms)	0.0000E+00	1.4388E+18
Organic I (atoms)	0.0000E+00	2.0640E+19
Aerosols (kg)	0.0000E+00	8.8685E-04

RB Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	1.9111E-02	6.0102E-10	6.2404E+15	6.3446E+14
Co-60	2.5135E-02	2.2236E-08	2.2318E+17	7.9598E+14
Kr-85	1.0402E+05	2.6514E-01	1.8785E+24	1.8305E+21

Kr-85m	1.2831E-10	1.5591E-20	1.1046E+05	6.4767E+19
Rb-86	1.0334E+00	1.2700E-08	8.8931E+16	3.9735E+16
Sr-89	3.1147E+01	1.0721E-06	7.2544E+18	1.0548E+18
Sr-90	4.6948E+00	3.4417E-05	2.3030E+20	1.4845E+17
Sr-91	1.1036E-06	3.0445E-16	2.0148E+09	7.3164E+16
Y-90	4.3690E+00	8.0303E-09	5.3733E+16	9.5786E+16
Y-91	5.0606E-01	2.0635E-08	1.3656E+17	1.6764E+16
Y-93	3.5960E-08	1.0778E-17	6.9794E+07	9.0050E+14
Zr-95	4.9675E-01	2.3123E-08	1.4658E+17	1.6578E+16
Zr-97	2.8454E-05	1.4884E-14	9.2407E+10	1.6346E+15
Nb-95	5.4825E-01	1.4021E-08	8.8878E+16	1.7452E+16
Mo-99	5.6978E-01	1.1880E-09	7.2265E+15	8.0778E+16
Tc-99m	5.8416E-01	1.1109E-10	6.7578E+14	7.7589E+16
Ru-103	5.1534E+00	1.5968E-07	9.3359E+17	1.7805E+17
Ru-106	2.6244E+00	7.8443E-07	4.4565E+18	8.3739E+16
Rh-105	4.2902E-02	5.0829E-11	2.9152E+14	3.0376E+16
Sb-127	1.1662E+00	4.3669E-09	2.0707E+16	1.0264E+17
Te-127	2.2855E+00	8.6600E-10	4.1064E+15	1.2916E+17
Te-127m	1.1588E+00	1.2285E-07	5.8252E+17	3.7383E+16
Te-129	2.7918E+00	1.3331E-10	6.2232E+14	8.8450E+16
Te-129m	3.2286E+00	1.0717E-07	5.0031E+17	1.1324E+17
Te-131m	5.7939E-02	7.2659E-11	3.3402E+14	8.1892E+16
Te-132	1.2681E+01	4.1768E-08	1.9056E+17	1.3798E+18
I-131	1.3408E+03	1.0815E-05	4.9719E+19	4.0395E+19
I-132	1.5136E+01	1.4663E-09	6.6897E+15	1.8577E+18
I-133	2.2182E+00	1.9581E-09	8.8663E+15	9.2406E+18
I-135	7.3263E-08	2.0862E-17	9.3061E+07	1.9893E+18
Xe-133	2.9932E+06	1.5991E-02	7.2406E+22	8.9324E+22
Xe-135	6.0681E-02	2.3762E-11	1.0600E+14	8.4105E+20
Cs-134	1.6239E+02	1.2551E-04	5.6408E+20	5.1841E+18
Cs-136	2.8886E+01	3.9413E-07	1.7452E+18	1.2085E+18
Cs-137	1.3181E+02	1.5153E-03	6.6609E+21	4.1897E+18
Ba-140	3.2001E+01	4.3713E-07	1.8803E+18	1.3415E+18
La-140	3.6134E+01	6.5008E-08	2.7964E+17	1.0697E+18
Ce-141	1.0541E+00	3.6994E-08	1.5800E+17	3.7109E+16
Ce-143	8.1299E-03	1.2242E-11	5.1556E+13	7.6368E+15
Ce-144	1.0197E+00	3.1971E-07	1.3370E+18	3.2628E+16
Pr-143	3.7609E-01	5.5850E-09	2.3520E+16	1.4657E+16
Nd-147	1.0852E-01	1.3414E-09	5.4953E+15	4.7701E+15
Np-239	7.8009E-01	3.3626E-09	8.4727E+15	1.4857E+17
Pu-238	4.2226E-03	2.4665E-07	6.2411E+17	1.3341E+14
Pu-239	3.7319E-04	6.0040E-06	1.5128E+19	1.1763E+13
Pu-240	6.9200E-04	3.0368E-06	7.6201E+18	2.1875E+13
Pu-241	1.4895E-01	1.4460E-06	3.6132E+18	4.7117E+15
Am-241	1.0643E-04	3.1010E-08	7.7488E+16	3.2614E+12
Cm-242	2.4307E-02	7.3339E-09	1.8250E+16	7.8483E+14
Cm-244	1.6745E-03	2.0697E-08	5.1083E+16	5.2959E+13

RB Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9509E+24	0.0000E+00	
Elemental I (atoms)	1.6408E+18	0.0000E+00	
Organic I (atoms)	3.7801E+19	0.0000E+00	
Aerosols (kg)	1.6919E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9973E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9993E-08
Total I (Ci)			1.3582E+03

DW to RB Transport Group Inventory:

Time (h) = 240.0000 Leakage Transport	
Noble gases (atoms)	2.0430E+24
Elemental I (atoms)	3.5589E+18
Organic I (atoms)	6.6841E+19
Aerosols (kg)	1.6924E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00

Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	6.6908E-14	2.1042E-21	2.1847E+04	8.3500E+05
Co-60	8.7999E-14	7.7848E-20	7.8136E+05	1.0052E+06
Kr-85	1.1774E-01	3.0011E-07	2.1262E+18	4.4983E+15
Rb-86	1.7714E-12	2.1771E-20	1.5245E+05	6.4164E+07
Sr-89	1.0905E-10	3.7535E-18	2.5398E+07	1.4121E+09
Sr-90	1.6436E-11	1.2049E-16	8.0626E+08	1.8724E+08
Y-90	1.5287E-11	2.8098E-20	1.8801E+05	2.5303E+07
Y-91	1.7549E-12	7.1558E-20	4.7355E+05	2.0253E+07
Zr-95	1.7391E-12	8.0954E-20	5.1318E+05	2.1918E+07
Nb-95	1.9194E-12	4.9086E-20	3.1116E+05	2.2100E+07
Mo-99	1.9948E-12	4.1591E-21	2.5300E+04	2.4408E+08
Ru-103	1.8042E-11	5.5903E-19	3.2685E+06	2.4239E+08
Ru-106	9.1879E-12	2.7463E-18	1.5602E+07	1.0647E+08
Sb-127	4.0828E-12	1.5289E-20	7.2496E+04	2.5297E+08
Te-127	8.0014E-12	3.0319E-21	1.4377E+04	2.6407E+08
Te-127m	4.0568E-12	4.3009E-19	2.0394E+06	4.7680E+07
Te-129m	1.1303E-11	3.7520E-19	1.7516E+06	1.5592E+08
Te-132	4.4394E-11	1.4623E-19	6.6714E+05	3.7456E+09
I-131	3.5482E-04	2.8620E-12	1.3157E+13	2.4188E+13
I-132	8.8565E-09	8.5801E-19	3.9144E+06	9.5477E+11
I-133	5.8728E-07	5.1843E-16	2.3474E+09	1.2553E+13
Xe-133	3.3880E+00	1.8100E-08	8.1955E+16	2.8435E+17
Xe-135	6.8659E-08	2.6886E-17	1.1993E+08	1.3217E+16
Cs-134	2.7838E-10	2.1516E-16	9.6697E+08	7.1600E+09
Cs-136	4.9518E-11	6.7564E-19	2.9917E+06	2.0821E+09
Cs-137	2.2595E-10	2.5976E-15	1.1418E+10	5.7644E+09
Ba-140	1.1204E-10	1.5304E-18	6.5830E+06	2.1258E+09
La-140	1.2647E-10	2.2753E-19	9.7873E+05	4.1379E+08
Ce-141	3.6913E-12	1.2955E-19	5.5331E+05	5.1297E+07
Ce-144	3.5700E-12	1.1193E-18	4.6810E+06	4.1584E+07
Pr-143	1.3145E-12	1.9521E-20	8.2209E+04	1.9972E+07
Nd-147	3.7992E-13	4.6962E-21	1.9239E+04	7.8244E+06
Np-239	2.7311E-12	1.1772E-20	2.9663E+04	4.9855E+08
Pu-238	1.4783E-14	8.6353E-19	2.1850E+06	1.6814E+05
Pu-239	1.3065E-15	2.1020E-17	5.2964E+07	1.4749E+04
Pu-240	2.4227E-15	1.0632E-17	2.6678E+07	2.7582E+04
Pu-241	5.2149E-13	5.0624E-18	1.2650E+07	5.9444E+06
Am-241	3.7258E-16	1.0855E-19	2.7126E+05	3.9975E+03
Cm-242	8.5097E-14	2.5676E-20	6.3894E+04	1.0083E+06
Cm-244	5.8623E-15	7.2461E-20	1.7884E+05	6.6807E+04

CR Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	2.2082E+18	0.0000E+00	
Elemental I (atoms)	3.4505E+10	0.0000E+00	
Organic I (atoms)	1.3125E+13	0.0000E+00	
Aerosols (kg)	2.9874E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.2410E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2412E-13
Total I (Ci)			3.5542E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5803E+20
Elemental I (atoms)	0.0000E+00	4.6701E+14
Organic I (atoms)	0.0000E+00	5.1255E+15
Aerosols (kg)	0.0000E+00	4.3632E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9506E+20
Elemental I (atoms)	1.1215E+15	3.4684E+13

Organic I (atoms)	1.2429E+16	3.8440E+14
Aerosols (kg)	1.0472E-09	3.2388E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	5.5053E+20	0.0000E+00
Elemental I (atoms)	4.9543E+14	0.0000E+00
Organic I (atoms)	5.4609E+15	0.0000E+00
Aerosols (kg)	4.6863E-10	0.0000E+00

EAB Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	8.8494E-01	2.3467E+01	1.5994E+00
Accumulated dose (rem)	5.8832E+00	8.8712E+01	8.5946E+00

LPZ Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	7.9100E-03	1.3784E-01	1.2107E-02
Accumulated dose (rem)	2.2453E-01	1.3415E+00	2.6581E-01

CR Doses:

Time (h) = 480.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.2879E-02	1.0315E+01	3.6692E-01
Accumulated dose (rem)	9.4779E-01	7.0978E+01	3.1294E+00

DW Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	2.3393E-03	7.3566E-11	7.6384E+14	4.5458E+15
Co-60	3.3809E-03	2.9909E-09	3.0020E+16	5.4642E+15
Kr-85	1.0530E+06	2.6840E+00	1.9016E+25	7.6099E+22
Rb-86	4.6741E-02	5.7444E-10	4.0225E+15	3.1982E+17
Sr-89	3.6654E+00	1.2617E-07	8.5370E+17	7.6932E+18
Sr-90	6.3335E-01	4.6431E-06	3.1068E+19	1.0177E+18
Y-90	6.3338E-01	1.1642E-09	7.7897E+15	4.6445E+16
Y-91	6.0100E-02	2.4507E-09	1.6218E+16	9.8647E+16
Zr-95	6.0173E-02	2.8010E-09	1.7756E+16	1.1934E+17
Zr-97	2.0392E-10	1.0667E-19	6.6227E+05	1.0553E+17
Nb-95	7.2009E-02	1.8415E-09	1.1674E+16	1.2009E+17
Mo-99	6.1853E-03	1.2896E-11	7.8448E+13	1.4610E+18
Tc-99m	6.3414E-03	1.2060E-12	7.3361E+12	1.3019E+18
Ru-103	5.8313E-01	1.8068E-08	1.0564E+17	1.3217E+18
Ru-106	3.4766E-01	1.0392E-07	5.9038E+17	5.7884E+17
Rh-105	5.2433E-05	6.2120E-14	3.5628E+11	8.5374E+17
Sb-127	2.6013E-02	9.7407E-11	4.6189E+14	1.4660E+18
Te-127	1.7521E-01	6.6389E-11	3.1480E+14	1.4674E+18
Te-127m	1.4759E-01	1.5647E-08	7.4194E+16	2.5883E+17
Te-129	3.0662E-01	1.4641E-11	6.8349E+13	3.8781E+18
Te-129m	3.5459E-01	1.1770E-08	5.4948E+16	8.4768E+17
Te-131m	3.0552E-05	3.8314E-14	1.7613E+11	2.9939E+18
Te-132	2.0397E-01	6.7186E-10	3.0652E+15	2.2026E+19
I-131	4.4981E+03	3.6282E-05	1.6679E+20	1.0384E+21
I-132	2.4346E-01	2.3586E-11	1.0761E+14	2.3129E+20
I-133	5.9273E-03	5.2324E-12	2.3692E+13	5.4746E+20
Xe-133	8.0962E+06	4.3253E-02	1.9585E+23	3.0118E+24
Xe-135	6.9342E-09	2.7153E-18	1.2113E+07	1.1061E+23
Cs-134	1.0552E+01	8.1557E-06	3.6653E+19	3.5238E+19
Cs-136	1.1160E+00	1.5227E-08	6.7426E+16	1.0442E+19
Cs-137	8.6382E+00	9.9311E-05	4.3654E+20	2.8362E+19
Ba-140	2.5072E+00	3.4248E-08	1.4732E+17	1.1709E+19
La-140	2.9102E+00	5.2358E-09	2.2522E+16	4.2459E+17
Ce-141	1.1500E-01	4.0359E-09	1.7237E+16	2.7963E+17
Ce-143	7.0971E-06	1.0687E-14	4.5007E+10	2.5455E+17
Ce-144	1.3434E-01	4.2119E-08	1.7614E+17	2.2611E+17
Pr-143	3.0474E-02	4.5255E-10	1.9058E+15	1.0483E+17
Nd-147	7.7919E-03	9.6317E-11	3.9458E+14	4.3225E+16
Np-239	5.5487E-03	2.3918E-11	6.0266E+13	3.0418E+18

Pu-238	5.7060E-04	3.3330E-08	8.4335E+16	9.1389E+14
Pu-239	5.0404E-05	8.1092E-07	2.0433E+18	8.0079E+13
Pu-240	9.3415E-05	4.0995E-07	1.0287E+18	1.4992E+14
Pu-241	2.0081E-02	1.9494E-07	4.8712E+17	3.2311E+16
Am-241	1.5248E-05	4.4426E-09	1.1101E+16	2.1709E+13
Cm-242	3.1444E-03	9.4875E-10	2.3610E+15	5.4839E+15
Cm-244	2.2580E-04	2.7911E-09	6.8886E+15	3.6313E+14

DW Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9212E+25	0.0000E+00	
Elemental I (atoms)	4.8383E+18	4.8566E+22	
Organic I (atoms)	1.6164E+20	0.0000E+00	
Aerosols (kg)	1.1403E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0590E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.0590E-06
Total I (Ci)			4.4983E+03

DW to RB Transport Group Inventory:

Time (h) = 480.0000	Leakage Transport
Noble gases (atoms)	3.5933E+24
Elemental I (atoms)	4.1774E+18
Organic I (atoms)	8.7505E+19
Aerosols (kg)	1.7015E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1024E+24
Elemental I (atoms)	0.0000E+00	1.6280E+18
Organic I (atoms)	0.0000E+00	2.6961E+19
Aerosols (kg)	0.0000E+00	8.8964E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1024E+24
Elemental I (atoms)	0.0000E+00	1.6280E+18
Organic I (atoms)	0.0000E+00	2.6961E+19
Aerosols (kg)	0.0000E+00	8.8964E-04

RB Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	1.7515E-02	5.5083E-10	5.7193E+15	1.2196E+15
Co-60	2.5315E-02	2.2395E-08	2.2477E+17	1.6025E+15
Kr-85	1.8779E+05	4.7864E-01	3.3911E+24	6.5282E+21
Rb-86	7.1646E-01	8.8052E-09	6.1659E+16	6.7398E+16
Sr-89	2.7445E+01	9.4468E-07	6.3921E+18	1.9903E+18
Sr-90	4.7422E+00	3.4765E-05	2.3262E+20	2.9932E+17
Y-90	4.7426E+00	8.7171E-09	5.8328E+16	2.4266E+17
Y-91	4.5432E-01	1.8525E-08	1.2260E+17	3.2102E+16
Zr-95	4.5055E-01	2.0972E-08	1.3295E+17	3.1710E+16
Zr-97	1.5269E-09	7.9872E-19	4.9588E+06	1.6347E+15
Nb-95	5.3917E-01	1.3788E-08	8.7407E+16	3.4849E+16
Mo-99	4.6313E-02	9.6562E-11	5.8739E+14	8.7446E+16
Tc-99m	4.7482E-02	9.0300E-12	5.4929E+13	8.4081E+16
Ru-103	4.3662E+00	1.3529E-07	7.9099E+17	3.2988E+17
Ru-106	2.6031E+00	7.7808E-07	4.4205E+18	1.6731E+17
Rh-105	3.9259E-04	4.6513E-13	2.6677E+12	3.0665E+16
Sb-127	1.9477E-01	7.2934E-10	3.4584E+15	1.1999E+17
Te-127	1.3119E+00	4.9709E-10	2.3571E+15	1.8066E+17
Te-127m	1.1051E+00	1.1716E-07	5.5553E+17	7.3593E+16
Te-129	2.2958E+00	1.0963E-10	5.1177E+14	1.4951E+17
Te-129m	2.6550E+00	8.8132E-08	4.1143E+17	2.0700E+17
Te-131m	2.2876E-04	2.8688E-13	1.3188E+12	8.2226E+16
Te-132	1.5272E+00	5.0306E-09	2.2951E+16	1.5482E+18
I-131	9.2479E+02	7.4595E-06	3.4292E+19	7.7144E+19
I-132	1.8229E+00	1.7660E-10	8.0571E+14	2.0321E+18

I-133	1.2183E-03	1.0754E-12	4.8695E+12	9.2502E+18
Xe-133	1.4438E+06	7.7134E-03	3.4926E+22	1.5980E+23
Xe-135	1.2368E-09	4.8432E-19	2.1605E+06	8.4105E+20
Cs-134	1.6175E+02	1.2501E-04	5.6183E+20	1.0366E+19
Cs-136	1.7107E+01	2.3341E-07	1.0335E+18	1.9274E+18
Cs-137	1.3241E+02	1.5223E-03	6.6915E+21	8.4132E+18
Ba-140	1.8773E+01	2.5643E-07	1.1030E+18	2.1344E+18
La-140	2.1790E+01	3.9203E-08	1.6863E+17	1.9761E+18
Ce-141	8.6080E-01	3.0211E-08	1.2903E+17	6.7617E+16
Ce-143	5.3140E-05	8.0021E-14	3.3699E+11	7.6881E+15
Ce-144	1.0059E+00	3.1537E-07	1.3189E+18	6.5008E+16
Pr-143	2.2855E-01	3.3940E-09	1.4293E+16	2.4134E+16
Nd-147	5.8342E-02	7.2118E-10	2.9544E+15	7.3551E+15
Np-239	4.1546E-02	1.7909E-10	4.5125E+14	1.5662E+17
Pu-238	4.2723E-03	2.4956E-07	6.3146E+17	2.6921E+14
Pu-239	3.7740E-04	6.0718E-06	1.5299E+19	2.3764E+13
Pu-240	6.9945E-04	3.0695E-06	7.7022E+18	4.4118E+13
Pu-241	1.5036E-01	1.4596E-06	3.6473E+18	9.4965E+15
Am-241	1.1418E-04	3.3267E-08	8.3128E+16	6.7873E+12
Cm-242	2.3544E-02	7.1038E-09	1.7678E+16	1.5497E+15
Cm-244	1.6907E-03	2.0898E-08	5.1578E+16	1.0676E+14

RB Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	3.4260E+24	0.0000E+00	
Elemental I (atoms)	1.0784E+18	0.0000E+00	
Organic I (atoms)	2.8843E+19	0.0000E+00	
Aerosols (kg)	1.6970E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.7560E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.7562E-08
Total I (Ci)			9.2661E+02

DW to RB Transport Group Inventory:

Time (h) = 480.0000	Leakage Transport
Noble gases (atoms)	3.5933E+24
Elemental I (atoms)	4.1774E+18
Organic I (atoms)	8.7505E+19
Aerosols (kg)	1.7015E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	5.3292E-14	1.6760E-21	1.7401E+04	8.3690E+05
Co-60	7.7022E-14	6.8138E-20	6.8389E+05	1.0079E+06
Kr-85	1.0415E-01	2.6546E-07	1.8808E+18	8.0397E+15
Rb-86	1.0648E-12	1.3087E-20	9.1639E+04	6.4208E+07
Sr-89	8.3504E-11	2.8743E-18	1.9449E+07	1.4151E+09
Sr-90	1.4429E-11	1.0578E-16	7.0778E+08	1.8773E+08
Y-90	1.4429E-11	2.6521E-20	1.7746E+05	2.5780E+07
Y-91	1.3692E-12	5.5831E-20	3.6947E+05	2.0302E+07
Zr-95	1.3708E-12	6.3810E-20	4.0450E+05	2.1967E+07
Nb-95	1.6405E-12	4.1953E-20	2.6594E+05	2.2157E+07
Ru-103	1.3285E-11	4.1162E-19	2.4066E+06	2.4288E+08
Ru-106	7.9203E-12	2.3674E-18	1.3450E+07	1.0674E+08
Sb-127	5.9261E-13	2.2191E-21	1.0522E+04	2.5303E+08
Te-127m	3.3623E-12	3.5646E-19	1.6903E+06	4.7798E+07
Te-129m	8.0781E-12	2.6815E-19	1.2518E+06	1.5623E+08
Te-132	4.6468E-12	1.5306E-20	6.9829E+04	3.7461E+09
I-131	1.3243E-04	1.0682E-12	4.9104E+12	3.1389E+13
I-132	9.2908E-10	9.0009E-20	4.1064E+05	9.5490E+11
I-133	1.7450E-10	1.5404E-19	6.9750E+05	1.2556E+13
Xe-133	8.0076E-01	4.2780E-09	1.9370E+16	3.4167E+17

Cs-134	2.4039E-10	1.8580E-16	8.3501E+08	7.1682E+09
Cs-136	2.5424E-11	3.4689E-19	1.5361E+06	2.0833E+09
Cs-137	1.9679E-10	2.2624E-15	9.9451E+09	5.7711E+09
Ba-140	5.7118E-11	7.8021E-19	3.3561E+06	2.1284E+09
La-140	6.6299E-11	1.1928E-19	5.1308E+05	4.1676E+08
Ce-141	2.6198E-12	9.1943E-20	3.9269E+05	5.1397E+07
Ce-144	3.0604E-12	9.5954E-19	4.0128E+06	4.1690E+07
Pr-143	6.9425E-13	1.0310E-20	4.3418E+04	2.0003E+07
Pu-238	1.2999E-14	7.5931E-19	1.9213E+06	1.6858E+05
Pu-239	1.1483E-15	1.8474E-17	4.6550E+07	1.4788E+04
Pu-240	2.1281E-15	9.3394E-18	2.3435E+07	2.7654E+04
Pu-241	4.5748E-13	4.4410E-18	1.1097E+07	5.9600E+06
Am-241	3.4737E-16	1.0121E-19	2.5290E+05	4.0090E+03
Cm-242	7.1635E-14	2.1614E-20	5.3786E+04	1.0108E+06
Cm-244	5.1442E-15	6.3585E-20	1.5693E+05	6.6982E+04

CR Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9002E+18	0.0000E+00	
Elemental I (atoms)	2.2653E+08	0.0000E+00	
Organic I (atoms)	4.9102E+12	0.0000E+00	
Aerosols (kg)	2.5977E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.6303E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.6303E-14
Total I (Ci)			1.3243E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.7455E+20
Elemental I (atoms)	0.0000E+00	4.6711E+14
Organic I (atoms)	0.0000E+00	6.6786E+15
Aerosols (kg)	0.0000E+00	4.3684E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.8638E+20
Elemental I (atoms)	1.1217E+15	3.4692E+13
Organic I (atoms)	1.6195E+16	5.0088E+14
Aerosols (kg)	1.0484E-09	3.2426E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	9.5862E+20	0.0000E+00
Elemental I (atoms)	4.9558E+14	0.0000E+00
Organic I (atoms)	7.1315E+15	0.0000E+00
Aerosols (kg)	4.6919E-10	0.0000E+00

EAB Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.1240E-01	8.7802E+00	4.7973E-01
Accumulated dose (rem)	6.0956E+00	9.7492E+01	9.0743E+00

LPZ Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.8986E-03	5.1574E-02	3.4688E-03
Accumulated dose (rem)	2.2643E-01	1.3931E+00	2.6928E-01

CR Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2669E-02	3.8592E+00	1.3017E-01
Accumulated dose (rem)	9.6046E-01	7.4837E+01	3.2596E+00

DW Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.8796E-03	5.9110E-11	6.1374E+14	4.6129E+15
Co-60	2.9852E-03	2.6408E-09	2.6506E+16	5.5658E+15
Kr-85	9.3148E+05	2.3742E+00	1.6821E+25	1.0777E+23
Rb-86	2.8567E-02	3.5109E-10	2.4585E+15	3.2100E+17
Sr-89	2.8315E+00	9.7461E-08	6.5947E+17	7.7965E+18
Sr-90	5.6086E-01	4.1117E-06	2.7512E+19	1.0368E+18
Y-90	5.6381E-01	1.0363E-09	6.9342E+15	6.5471E+16
Y-91	4.7307E-02	1.9290E-09	1.2766E+16	1.0036E+17
Zr-95	4.7846E-02	2.2272E-09	1.4118E+16	1.2106E+17
Nb-95	6.1331E-02	1.5684E-09	9.9425E+15	1.2222E+17
Mo-99	4.4076E-04	9.1899E-13	5.5902E+12	1.4611E+18
Tc-99m	4.5189E-04	8.5939E-14	5.2277E+11	1.3020E+18
Ru-103	4.3314E-01	1.3421E-08	7.8468E+16	1.3378E+18
Ru-106	3.0233E-01	9.0367E-08	5.1340E+17	5.8921E+17
Rh-105	4.2064E-07	4.9836E-16	2.8583E+09	8.5374E+17
Sb-127	3.8088E-03	1.4262E-11	6.7630E+13	1.4663E+18
Te-127	1.2895E-01	4.8863E-11	2.3170E+14	1.4720E+18
Te-127m	1.2284E-01	1.3023E-08	6.1754E+16	2.6314E+17
Te-129	2.2106E-01	1.0555E-11	4.9276E+13	3.8844E+18
Te-129m	2.5564E-01	8.4860E-09	3.9615E+16	8.5734E+17
Te-131m	1.0575E-07	1.3262E-16	6.0968E+08	2.9939E+18
Te-132	2.1537E-02	7.0942E-11	3.2365E+14	2.2028E+19
I-131	1.6831E+03	1.3576E-05	6.2410E+19	1.1299E+21
I-132	2.5707E-02	2.4905E-12	1.1362E+13	2.3129E+20
I-133	1.7658E-06	1.5588E-15	7.0579E+09	5.4746E+20
Xe-133	1.9136E+06	1.0223E-02	4.6289E+22	3.1487E+24
Cs-134	9.2649E+00	7.1609E-06	3.2182E+19	3.5555E+19
Cs-136	5.8260E-01	7.9491E-09	3.5199E+16	1.0468E+19
Cs-137	7.6498E+00	8.7947E-05	3.8659E+20	2.8622E+19
Ba-140	1.2894E+00	1.7613E-08	7.5764E+16	1.1768E+19
La-140	1.4978E+00	2.6948E-09	1.1592E+16	4.9206E+17
Ce-141	8.2330E-02	2.8894E-09	1.2341E+16	2.8275E+17
Ce-143	4.0670E-08	6.1242E-17	2.5791E+08	2.5455E+17
Ce-144	1.1617E-01	3.6424E-08	1.5233E+17	2.3010E+17
Pr-143	1.6197E-02	2.4054E-10	1.0130E+15	1.0555E+17
Nd-147	3.6727E-03	4.5398E-11	1.8598E+14	4.3400E+16
Np-239	2.5908E-04	1.1168E-12	2.8139E+12	3.0419E+18
Pu-238	5.0611E-04	2.9563E-08	7.4803E+16	9.3108E+14
Pu-239	4.4666E-05	7.1861E-07	1.8107E+18	8.1597E+13
Pu-240	8.2778E-05	3.6327E-07	9.1154E+17	1.5273E+14
Pu-241	1.7771E-02	1.7251E-07	4.3108E+17	3.2915E+16
Am-241	1.4292E-05	4.1640E-09	1.0405E+16	2.2181E+13
Cm-242	2.6702E-03	8.0568E-10	2.0049E+15	5.5766E+15
Cm-244	1.9988E-04	2.4707E-09	6.0978E+15	3.6992E+14

DW Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.6867E+25	0.0000E+00	
Elemental I (atoms)	1.8104E+18	4.8566E+22	
Organic I (atoms)	6.0481E+19	0.0000E+00	
Aerosols (kg)	1.0084E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9626E-07
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9626E-07
Total I (Ci)			1.6831E+03

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport
Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	4.4088E+18
Organic I (atoms)	9.5236E+19
Aerosols (kg)	1.7096E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	1.6988E+18
Organic I (atoms)	0.0000E+00	2.9326E+19

Aerosols (kg)	0.0000E+00	8.9210E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	1.6988E+18
Organic I (atoms)	0.0000E+00	2.9326E+19
Aerosols (kg)	0.0000E+00	8.9210E-04

RB Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.6032E-02	5.0417E-10	5.2348E+15	1.7555E+15
Co-60	2.5462E-02	2.2525E-08	2.2608E+17	2.4142E+15
Kr-85	2.6171E+05	6.6707E-01	4.7261E+24	1.3743E+22
Rb-86	4.9644E-01	6.1012E-09	4.2724E+16	8.6571E+16
Sr-89	2.4151E+01	8.3129E-07	5.6249E+18	2.8139E+18
Sr-90	4.7838E+00	3.5070E-05	2.3466E+20	4.5160E+17
Y-90	4.8090E+00	8.8390E-09	5.9144E+16	3.9468E+17
Y-91	4.0733E-01	1.6610E-08	1.0992E+17	4.5863E+16
Zr-95	4.0810E-01	1.8997E-08	1.2042E+17	4.5425E+16
Nb-95	5.2312E-01	1.3378E-08	8.4804E+16	5.1839E+16
Mo-99	3.7594E-03	7.8385E-12	4.7681E+13	8.7988E+16
Tc-99m	3.8543E-03	7.3301E-13	4.4589E+12	8.4608E+16
Ru-103	3.6944E+00	1.1447E-07	6.6928E+17	4.5844E+17
Ru-106	2.5787E+00	7.7078E-07	4.3790E+18	2.5014E+17
Rh-105	3.5878E-06	4.2507E-15	2.4379E+10	3.0668E+16
Sb-127	3.2487E-02	1.2165E-10	5.7684E+14	1.2289E+17
Te-127	1.0999E+00	4.1677E-10	1.9763E+15	2.1716E+17
Te-127m	1.0478E+00	1.1108E-07	5.2673E+17	1.0800E+17
Te-129	1.8855E+00	9.0032E-11	4.2030E+14	1.9969E+17
Te-129m	2.1805E+00	7.2380E-08	3.3789E+17	2.8405E+17
Te-131m	9.0202E-07	1.1312E-15	5.2002E+09	8.2227E+16
Te-132	1.8370E-01	6.0509E-10	2.7606E+15	1.5685E+18
I-131	5.2468E+02	4.2322E-06	1.9456E+19	9.9958E+19
I-132	2.1927E-01	2.1242E-11	9.6912E+13	2.0531E+18
I-133	5.5033E-07	4.8581E-16	2.1997E+09	9.2502E+18
Xe-133	5.3765E+05	2.8724E-03	1.3006E+22	1.8951E+23
Cs-134	1.6100E+02	1.2444E-04	5.5925E+20	1.5525E+19
Cs-136	1.0124E+01	1.3814E-07	6.1168E+17	2.3529E+18
Cs-137	1.3294E+02	1.5283E-03	6.7181E+21	1.2655E+19
Ba-140	1.0998E+01	1.5023E-07	6.4622E+17	2.5993E+18
La-140	1.2776E+01	2.2985E-08	9.8870E+16	2.5120E+18
Ce-141	7.0204E-01	2.4639E-08	1.0523E+17	9.2514E+16
Ce-143	3.4689E-07	5.2236E-16	2.1998E+09	7.6885E+15
Ce-144	9.9090E-01	3.1068E-07	1.2993E+18	9.6928E+16
Pr-143	1.3838E-01	2.0550E-09	8.6540E+15	2.9880E+16
Nd-147	3.1326E-02	3.8722E-10	1.5863E+15	8.7441E+15
Np-239	2.2098E-03	9.5253E-12	2.4001E+13	1.5705E+17
Pu-238	4.3168E-03	2.5215E-07	6.3802E+17	4.0652E+14
Pu-239	3.8097E-04	6.1293E-06	1.5444E+19	3.5887E+13
Pu-240	7.0605E-04	3.0985E-06	7.7749E+18	6.6586E+13
Pu-241	1.5158E-01	1.4714E-06	3.6769E+18	1.4323E+16
Am-241	1.2191E-04	3.5520E-08	8.8758E+16	1.0561E+13
Cm-242	2.2776E-02	6.8719E-09	1.7101E+16	2.2901E+15
Cm-244	1.7049E-03	2.1073E-08	5.2011E+16	1.6104E+14

RB Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	4.7391E+24	0.0000E+00	
Elemental I (atoms)	5.9968E+17	0.0000E+00	
Organic I (atoms)	1.7001E+19	0.0000E+00	
Aerosols (kg)	1.7019E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.5636E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5637E-08
Total I (Ci)			5.2490E+02

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport

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Noble gases (atoms)      4.9433E+24
Elemental I (atoms)      4.4088E+18
Organic I (atoms)        9.5236E+19
Aerosols (kg)            1.7096E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg          Atoms      Decay
Co-58                  4.2820E-14  1.3466E-21  1.3982E+04  8.3843E+05
Co-60                  6.8006E-14  6.0162E-20  6.0384E+05  1.0102E+06
Kr-85                  9.2128E-02  2.3482E-07  1.6637E+18  1.1172E+16
Rb-86                  6.5081E-13  7.9984E-21  5.6008E+04  6.4235E+07
Sr-89                  6.4505E-11  2.2203E-18  1.5024E+07  1.4175E+09
Sr-90                  1.2777E-11  9.3671E-17  6.2677E+08  1.8817E+08
Y-90                   1.2845E-11  2.3608E-20  1.5797E+05  2.6214E+07
Y-91                   1.0777E-12  4.3946E-20  2.9082E+05  2.0341E+07
Zr-95                  1.0900E-12  5.0739E-20  3.2164E+05  2.2006E+07
Nb-95                  1.3972E-12  3.5732E-20  2.2651E+05  2.2205E+07
Ru-103                 9.8676E-12  3.0575E-19  1.7876E+06  2.4325E+08
Ru-106                 6.8875E-12  2.0587E-18  1.1696E+07  1.0697E+08
Te-127m                2.7986E-12  2.9669E-19  1.4069E+06  4.7896E+07
Te-129m                5.8239E-12  1.9332E-19  9.0250E+05  1.5645E+08
I-131                  4.9551E-05  3.9969E-13  1.8374E+12  3.4083E+13
I-132                  9.8100E-11  9.5038E-21  4.3359E+04  9.5491E+11
Xe-133                 1.8926E-01  1.0111E-09  4.5783E+15  3.5522E+17
Cs-134                 2.1107E-10  1.6314E-16  7.3315E+08  7.1754E+09
Cs-136                 1.3272E-11  1.8109E-19  8.0189E+05  2.0839E+09
Cs-137                 1.7427E-10  2.0036E-15  8.8071E+09  5.7770E+09
Ba-140                 2.9376E-11  4.0126E-19  1.7260E+06  2.1297E+09
La-140                 3.4123E-11  6.1391E-20  2.6408E+05  4.1830E+08
Ce-141                 1.8756E-12  6.5826E-20  2.8114E+05  5.1468E+07
Ce-144                 2.6466E-12  8.2980E-19  3.4702E+06  4.1781E+07
Pr-143                 3.6900E-13  5.4798E-21  2.3077E+04  2.0019E+07
Pu-238                 1.1530E-14  6.7349E-19  1.7041E+06  1.6897E+05
Pu-239                 1.0176E-15  1.6371E-17  4.1250E+07  1.4823E+04
Pu-240                 1.8858E-15  8.2759E-18  2.0766E+07  2.7718E+04
Pu-241                 4.0486E-13  3.9301E-18  9.8207E+06  5.9737E+06
Am-241                 3.2559E-16  9.4863E-20  2.3705E+05  4.0198E+03
Cm-242                 6.0832E-14  1.8355E-20  4.5675E+04  1.0129E+06
Cm-244                 4.5536E-15  5.6285E-20  1.3892E+05  6.7137E+04

CR Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    1.6683E+18  0.0000E+00
Elemental I (atoms)    5.4915E+07  0.0000E+00
Organic I (atoms)      1.8373E+12  0.0000E+00
Aerosols (kg)          2.2972E-15  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.7325E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.7325E-14
Total I (Ci)                                    4.9551E-05

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.7602E+20
Elemental I (atoms)    0.0000E+00  4.6713E+14
Organic I (atoms)      0.0000E+00  7.2597E+15
Aerosols (kg)          0.0000E+00  4.3729E-10

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
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Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.4005E+20
Elemental I (atoms)    1.1218E+15  3.4694E+13
Organic I (atoms)      1.7604E+16  5.4447E+14
Aerosols (kg)          1.0495E-09  3.2460E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    1.3140E+21  0.0000E+00
Elemental I (atoms)    4.9560E+14  0.0000E+00
Organic I (atoms)      7.7566E+15  0.0000E+00
Aerosols (kg)          4.6967E-10  0.0000E+00

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######################################################################
                              I-131 Summary
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Time (hr)	DW I-131 (Curies)	RB I-131 (Curies)	Environment I-131 (Curies)
0.000	3.8944E+03	6.7611E-04	3.7369E-14
0.260	1.8207E+06	1.4794E+02	1.7514E-03
0.333	2.3333E+06	2.4304E+02	4.6987E-03
0.500	2.5229E+05	3.1098E+02	2.1931E-02
0.750	3.9747E+05	3.6954E+02	8.0451E-02
1.000	4.0160E+05	4.3161E+02	1.8384E-01
1.400	4.0806E+05	5.3214E+02	4.6223E-01
1.500	4.0967E+05	5.5750E+02	5.5710E-01
1.800	4.1449E+05	6.3413E+02	9.1231E-01
2.000	4.1769E+05	6.8567E+02	1.2146E+00
2.100	5.0440E+04	6.9503E+02	1.3129E+00
2.300	4.2146E+04	7.0027E+02	1.5245E+00
2.400	3.9528E+04	7.0257E+02	1.6378E+00
2.700	3.5071E+04	7.0875E+02	2.0088E+00
3.000	3.3235E+04	7.1438E+02	2.4267E+00
3.300	3.2463E+04	7.1977E+02	2.8923E+00
3.600	3.2124E+04	7.2505E+02	3.4062E+00
3.900	3.1960E+04	7.3028E+02	3.9690E+00
4.000	3.1924E+04	7.3202E+02	4.1676E+00
4.300	3.1880E+04	7.3722E+02	4.7961E+00
4.600	3.1836E+04	7.4241E+02	5.4743E+00
4.900	3.1792E+04	7.4758E+02	6.2022E+00
5.200	3.1748E+04	7.5274E+02	6.9800E+00
5.500	3.1704E+04	7.5789E+02	7.8076E+00
5.800	3.1661E+04	7.6302E+02	8.6849E+00
6.100	3.1617E+04	7.6814E+02	9.6119E+00
6.400	3.1573E+04	7.7324E+02	1.0588E+01
6.700	3.1530E+04	7.7833E+02	1.1614E+01
7.000	3.1486E+04	7.8341E+02	1.2688E+01
7.300	3.1443E+04	7.8847E+02	1.3810E+01
7.600	3.1400E+04	7.9352E+02	1.4981E+01
7.900	3.1356E+04	7.9856E+02	1.6198E+01
8.000	3.1342E+04	8.0023E+02	1.6615E+01
8.300	3.1299E+04	8.0525E+02	1.7882E+01
8.600	3.1256E+04	8.1025E+02	1.9195E+01
8.900	3.1212E+04	8.1524E+02	2.0554E+01
9.200	3.1169E+04	8.2022E+02	2.1957E+01
9.500	3.1126E+04	8.2519E+02	2.3404E+01
9.800	3.1084E+04	8.3014E+02	2.4895E+01
10.100	3.1041E+04	8.3507E+02	2.6429E+01
10.400	3.0998E+04	8.4000E+02	2.8005E+01
24.000	2.9118E+04	1.0495E+03	1.3184E+02
48.000	2.6392E+04	1.1624E+03	2.4538E+02
72.000	2.3921E+04	1.2471E+03	3.5615E+02
96.000	2.1682E+04	1.3078E+03	4.5848E+02
240.000	1.2021E+04	1.3408E+03	9.0274E+02
480.000	4.4981E+03	9.2479E+02	1.2482E+03
720.000	1.6831E+03	5.2468E+02	1.3774E+03

Time (hr)	CR I-131 (Curies)	MSL "B" Volume 1 I-131 (Curies)	MSL "B" Volume 2 I-131 (Curies)
0.000	1.6834E-16	3.5698E-04	5.2857E-10
0.260	7.3993E-06	7.7000E+01	5.2637E-02
0.333	1.9503E-05	1.2599E+02	1.0999E-01
0.500	8.7014E-05	1.5775E+02	3.0136E-01
0.750	1.1966E-04	1.8165E+02	6.2570E-01
1.000	1.8340E-04	2.0639E+02	1.0043E+00
1.400	3.5173E-04	2.4454E+02	1.7420E+00
1.500	4.0712E-04	2.5380E+02	1.9542E+00
1.800	6.0701E-04	2.8100E+02	2.6633E+00
2.000	7.6971E-04	2.9864E+02	3.1992E+00
2.100	7.7177E-04	2.9859E+02	3.3628E+00
2.300	7.8490E-04	2.9444E+02	3.6940E+00
2.400	7.9555E-04	2.9229E+02	3.8611E+00
2.700	8.4158E-04	2.8577E+02	4.3684E+00
3.000	9.0548E-04	2.7927E+02	4.8830E+00
3.300	9.8375E-04	2.7290E+02	5.4039E+00
3.600	1.0736E-03	2.6668E+02	5.9296E+00
3.900	1.1727E-03	2.6063E+02	6.4590E+00
4.000	1.2075E-03	2.5866E+02	6.6361E+00
4.300	1.3162E-03	2.5284E+02	7.1688E+00
4.600	1.4306E-03	2.4719E+02	7.7029E+00
4.900	1.5493E-03	2.4170E+02	8.2374E+00
5.200	1.6715E-03	2.3638E+02	8.7714E+00
5.500	1.7965E-03	2.3121E+02	9.3043E+00
5.800	1.9234E-03	2.2618E+02	9.8353E+00
6.100	2.0519E-03	2.2131E+02	1.0364E+01
6.400	2.1814E-03	2.1657E+02	1.0889E+01
6.700	2.3116E-03	2.1197E+02	1.1410E+01
7.000	2.4420E-03	2.0751E+02	1.1928E+01
7.300	2.5724E-03	2.0317E+02	1.2440E+01
7.600	2.7026E-03	1.9896E+02	1.2948E+01
7.900	2.8322E-03	1.9487E+02	1.3450E+01
8.000	2.8753E-03	1.9354E+02	1.3616E+01
8.300	2.5089E-03	1.8960E+02	1.4106E+01
8.600	2.2336E-03	1.8578E+02	1.4591E+01
8.900	2.0289E-03	1.8207E+02	1.5069E+01
9.200	1.8792E-03	1.7847E+02	1.5540E+01
9.500	1.7721E-03	1.7497E+02	1.6005E+01
9.800	1.6980E-03	1.7158E+02	1.6463E+01
10.100	1.6496E-03	1.6828E+02	1.6913E+01
10.400	1.6208E-03	1.6507E+02	1.7357E+01
24.000	2.6113E-03	8.5010E+01	2.9822E+01
48.000	9.5984E-04	6.0713E+01	3.1021E+01
72.000	9.0356E-04	5.0296E+01	2.9306E+01
96.000	8.2511E-04	4.4216E+01	2.6826E+01
240.000	3.5482E-04	2.4159E+01	1.4887E+01
480.000	1.3243E-04	9.0396E+00	5.5125E+00
720.000	4.9551E-05	3.3825E+00	2.0619E+00

Time (hr)	MSL "C" Volume 3 I-131 (Curies)	MSL "C" Volume 4 I-131 (Curies)
0.000	3.5698E-04	6.2309E-10
0.260	7.6827E+01	6.2024E-02
0.333	1.2563E+02	1.2959E-01
0.500	1.5676E+02	3.5488E-01
0.750	1.7964E+02	7.3596E-01
1.000	2.0324E+02	1.1798E+00
1.400	2.3935E+02	2.0418E+00
1.500	2.4808E+02	2.2893E+00
1.800	2.7356E+02	3.1148E+00
2.000	2.9000E+02	3.7375E+00
2.100	2.8961E+02	3.9275E+00
2.300	2.8477E+02	4.3115E+00
2.400	2.8229E+02	4.5051E+00
2.700	2.7482E+02	5.0919E+00
3.000	2.6744E+02	5.6863E+00
3.300	2.6023E+02	6.2866E+00
3.600	2.5324E+02	6.8915E+00
3.900	2.4647E+02	7.4996E+00
4.000	2.4427E+02	7.7029E+00

4.300	2.3780E+02	8.3134E+00
4.600	2.3154E+02	8.9245E+00
4.900	2.2550E+02	9.5352E+00
5.200	2.1966E+02	1.0144E+01
5.500	2.1401E+02	1.0751E+01
5.800	2.0855E+02	1.1355E+01
6.100	2.0327E+02	1.1955E+01
6.400	1.9817E+02	1.2551E+01
6.700	1.9324E+02	1.3141E+01
7.000	1.8848E+02	1.3726E+01
7.300	1.8387E+02	1.4304E+01
7.600	1.7942E+02	1.4876E+01
7.900	1.7511E+02	1.5441E+01
8.000	1.7371E+02	1.5628E+01
8.300	1.6959E+02	1.6180E+01
8.600	1.6561E+02	1.6724E+01
8.900	1.6177E+02	1.7260E+01
9.200	1.5805E+02	1.7788E+01
9.500	1.5446E+02	1.8308E+01
9.800	1.5098E+02	1.8819E+01
10.100	1.4762E+02	1.9321E+01
10.400	1.4437E+02	1.9815E+01
24.000	6.9514E+01	3.3167E+01
48.000	5.0363E+01	3.4011E+01
72.000	4.2593E+01	3.1893E+01
96.000	3.7868E+01	2.9102E+01
240.000	2.0847E+01	1.6111E+01
480.000	7.8004E+00	5.9541E+00
720.000	2.9188E+00	2.2261E+00

##
Cumulative Dose Summary
##

	EAB		LPZ		CR	
Time (hr)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.260	1.6724E-04	9.3157E-06	1.8686E-05	1.0409E-06	2.6274E-04	8.6199E-06
0.333	4.4832E-04	2.4797E-05	5.0091E-05	2.7706E-06	8.8969E-04	2.9165E-05
0.500	2.0889E-03	1.1642E-04	2.3340E-04	1.3008E-05	6.2803E-03	2.0563E-04
0.750	7.6445E-03	4.7958E-04	8.5413E-04	5.3584E-05	2.3095E-02	7.6565E-04
1.000	1.7429E-02	1.3789E-03	1.9474E-03	1.5406E-04	4.7871E-02	1.6375E-03
1.400	4.3691E-02	5.3152E-03	4.8817E-03	5.9387E-04	1.1711E-01	4.4077E-03
1.500	5.2615E-02	7.0530E-03	5.8788E-03	7.8804E-04	1.4220E-01	5.5134E-03
1.800	8.5946E-02	1.4861E-02	9.6030E-03	1.6605E-03	2.4179E-01	1.0308E-02
2.000	1.1423E-01	2.2736E-02	1.2763E-02	2.5403E-03	3.3214E-01	1.5093E-02
2.100	1.2341E-01	2.5471E-02	1.3789E-02	2.8459E-03	3.8274E-01	1.7879E-02
2.300	1.4314E-01	3.1542E-02	1.5993E-02	3.5243E-03	4.8468E-01	2.3582E-02
2.400	1.5369E-01	3.4885E-02	1.7172E-02	3.8978E-03	5.3639E-01	2.6527E-02
2.700	1.8815E-01	4.6171E-02	2.1022E-02	5.1588E-03	6.9642E-01	3.5881E-02
3.000	2.2683E-01	5.9355E-02	2.5344E-02	6.6318E-03	8.6669E-01	4.6221E-02
3.300	2.6978E-01	7.4417E-02	3.0143E-02	8.3147E-03	1.0503E+00	5.7759E-02
3.600	3.1704E-01	9.1304E-02	3.5423E-02	1.0202E-02	1.2496E+00	7.0650E-02
3.900	3.6862E-01	1.0994E-01	4.1187E-02	1.2284E-02	1.4666E+00	8.5002E-02
4.000	3.8678E-01	1.1652E-01	4.3216E-02	1.3019E-02	1.5432E+00	9.0124E-02
4.300	4.4415E-01	1.3734E-01	4.9626E-02	1.5345E-02	1.7860E+00	1.0653E-01
4.600	5.0586E-01	1.5967E-01	5.6521E-02	1.7840E-02	2.0495E+00	1.2451E-01
4.900	5.7191E-01	1.8340E-01	6.3900E-02	2.0491E-02	2.3346E+00	1.4407E-01
5.200	6.4226E-01	2.0841E-01	7.1761E-02	2.3286E-02	2.6417E+00	1.6519E-01
5.500	7.1690E-01	2.3460E-01	8.0101E-02	2.6212E-02	2.9716E+00	1.8786E-01
5.800	7.9581E-01	2.6184E-01	8.8917E-02	2.9256E-02	3.3243E+00	2.1204E-01
6.100	8.7893E-01	2.9004E-01	9.8205E-02	3.2407E-02	3.7003E+00	2.3767E-01
6.400	9.6624E-01	3.1910E-01	1.0796E-01	3.5653E-02	4.0995E+00	2.6471E-01
6.700	1.0577E+00	3.4890E-01	1.1818E-01	3.8983E-02	4.5221E+00	2.9311E-01
7.000	1.1532E+00	3.7937E-01	1.2885E-01	4.2388E-02	4.9679E+00	3.2280E-01
7.300	1.2528E+00	4.1042E-01	1.3998E-01	4.5857E-02	5.4370E+00	3.5373E-01
7.600	1.3563E+00	4.4196E-01	1.5155E-01	4.9381E-02	5.9292E+00	3.8585E-01
7.900	1.4638E+00	4.7394E-01	1.6355E-01	5.2954E-02	6.4442E+00	4.1909E-01
8.000	1.5005E+00	4.8468E-01	1.6765E-01	5.4154E-02	6.6210E+00	4.3041E-01
8.300	1.6119E+00	5.1708E-01	1.7194E-01	5.6453E-02	7.1189E+00	4.6196E-01
8.600	1.7271E+00	5.4976E-01	1.7638E-01	5.8769E-02	7.5566E+00	4.8923E-01

```
   8.900 1.8460E+00 5.8266E-01 1.8095E-01 6.1097E-02 7.9491E+00 5.1332E-01
   9.200 1.9685E+00 6.1574E-01 1.8567E-01 6.3434E-02 8.3082E+00 5.3508E-01
   9.500 2.0945E+00 6.4895E-01 1.9052E-01 6.5778E-02 8.6430E+00 5.5513E-01
   9.800 2.2240E+00 6.8226E-01 1.9551E-01 6.8124E-02 8.9605E+00 5.7394E-01
  10.100 2.3569E+00 7.1562E-01 2.0062E-01 7.0471E-02 9.2661E+00 5.9187E-01
  10.400 2.4932E+00 7.4901E-01 2.0587E-01 7.2817E-02 9.5641E+00 6.0917E-01
  24.000 1.1088E+01 2.1722E+00 5.3675E-01 1.6969E-01 2.6343E+01 1.4274E+00
  48.000 1.9762E+01 3.0999E+00 7.1478E-01 1.9581E-01 3.4398E+01 1.7596E+00
  72.000 2.7743E+01 3.8419E+00 8.7856E-01 2.1637E-01 4.1185E+01 2.0246E+00
  96.000 3.4901E+01 4.4842E+00 1.0255E+00 2.3409E-01 4.7281E+01 2.2597E+00
 240.000 6.5245E+01 6.9952E+00 1.2037E+00 2.5370E-01 6.0663E+01 2.7625E+00
 480.000 8.8712E+01 8.5946E+00 1.3415E+00 2.6581E-01 7.0978E+01 3.1294E+00
 720.000 9.7492E+01 9.0743E+00 1.3931E+00 2.6928E-01 7.4837E+01 3.2596E+00

######################################################################
                        Worst Two-Hour Doses
######################################################################

EAB
   Time    Whole Body     Thyroid         TEDE
   (hr)      (rem)         (rem)          (rem)
    8.4   1.9477E-01   8.4287E-01   2.2104E-01
```

JAFMS_270_1100.out

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 10:59:42
########################################################################

########################################################################
                    File information
########################################################################

Plant file           = C:\radtrad3.03\Fitz\JAFMS_270_1100.psf
Inventory file       = c:\radtrad3.03\fitz\jafloca.nif
Release file         = c:\radtrad3.03\defaults\bwr_dba.rft
Dose Conversion file = c:\radtrad3.03\defaults\fgr11&12.inp




    #####    ####   #####    #  #     #  #####   #    #  #####
    #    #  #       #        #  ##    #  #    #  #    #    #
    #    #  #       #        #  # #   #  #    #  #    #    #
    #####    ####   ####     #  #  #  #  #####   #    #    #
    #            #  #        #  #   # #  #       #    #    #
    #            #  #        #  #    ##  #       #    #    #
    #        ####   #        #  #     #  #        ####     #


Radtrad 3.03 4/15/2001
Containment Leakage from Drywell Using CAVEX Core Inventory -  Containment Shine Dose
Nuclide Inventory File:
c:\radtrad3.03\fitz\jafloca.nif
Plant Power Level:
 2.5867E+03
Compartments:
  8
Compartment 1:
DW
  3
 1.5000E+05
  1
  0
  0
  0
  0
Compartment 2:
RB
  3
 1.1850E+06
  0
  0
  0
  0
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
CR
  1
 1.0100E+05
  0
  0
  0
  0
```

```
  0
Compartment 5:
MSL "B" Volume 1
  3
 2.9829E+02
  0
  0
  0
  0
  0
Compartment 6:
MSL "B" Volume 2
  3
 5.0800E+02
  0
  0
  0
  0
  0
Compartment 7:
MSL "C" Volume 3
  3
 2.5777E+02
  0
  0
  0
  0
  0
Compartment 8:
MSL "C" Volume 4
  3
 5.4852E+02
  0
  0
  0
  0
  0
Pathways:
 11
Pathway 1:
DW to  RB
  1
  2
  4
Pathway 2:
RB toEnvironment
  2
  3
  2
Pathway 3:
Environment to CR Unfiltered
  3
  4
  2
Pathway 4:
Environment to  CR Filtered
  3
  4
  2
Pathway 5:
CR to  Environment - Exhaust
  4
  3
  2
Pathway 6:
DW to  MSL "B" Volume 1
  1
  5
  2
Pathway 7:
MSL "B" Volume 1 to  MSL "B" Volume 2
  5
```

```
  6
  2
Pathway 8:
MSL "B" Volume 2 to  Environment
  6
  3
  2
Pathway 9:
DW to  MSL "C" Volume 3
  1
  7
  2
Pathway 10:
MSL "C" Volume 3 to  MSL "C" Volume 4
  7
  8
  2
Pathway 11:
MSL "C" Volume 4 to  Environment
  8
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\radtrad3.03\defaults\fgr11&12.inp
c:\radtrad3.03\defaults\bwr_dba.rft
  0.0000E+00
  1
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  8
Compartment 1:
  1
  1
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.5000E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   3.0000E+00
  2.3000E+00   3.0000E+00
  2.4000E+00   3.0000E+00
  3.0000E+00   3.0000E+00
  4.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
 10
  0.0000E+00   0.0000E+00
  3.3330E-01   3.0000E+01
  1.5000E+00   3.0000E+01
  2.0000E+00   3.0000E+01
  2.1000E+00   0.0000E+00
  2.3000E+00   0.0000E+00
  2.4000E+00   0.0000E+00
  3.0000E+00   0.0000E+00
  4.0000E+00   0.0000E+00
```

```
  7.2000E+02   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  0
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 5:
  0
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 6:
  0
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 7:
  0
  1
  0
  0
  0
  0
  0
  0
  0
  0
Compartment 8:
  0
  1
  0
```

```
  0
  0
  0
  0
  0
  0
Pathways:
 11
Pathway 1:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.5000E+00
  2.4000E+01   7.5000E-01
  7.2000E+02   0.0000E+00
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  3.3330E-01   0.0000E+00   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   4.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.1000E+03   9.7000E+01   9.7000E+01   9.7000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
```

```
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   2.1120E+03   1.0000E+02   1.0000E+02   1.0000E+02
  5.0000E-01   1.5000E+03   1.0000E+02   1.0000E+02   1.0000E+02
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   8.2500E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   4.7800E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   2.3900E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   8.2500E-01   9.9940E+01   4.9200E+00   0.0000E+00
  2.0000E+00   4.7800E-01   9.9940E+01   4.9200E+00   0.0000E+00
  8.0000E+00   4.7800E-01   9.9940E+01   6.5700E+00   0.0000E+00
  2.4000E+01   2.3900E-01   9.9940E+01   1.1440E+01   0.0000E+00
  4.8000E+01   2.3900E-01   9.9940E+01   2.3680E+01   0.0000E+00
  7.2000E+01   2.3900E-01   9.9940E+01   4.1310E+01   0.0000E+00
  9.6000E+01   2.3900E-01   9.9940E+01   6.0070E+01   0.0000E+00
  2.4000E+02   2.3900E-01   9.9940E+01   9.5290E+01   0.0000E+00
  4.8000E+02   2.3900E-01   9.9940E+01   9.6640E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 8:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   2.2500E+00   0.0000E+00   8.6800E+00   0.0000E+00
```

```
  2.0000E+00   1.3030E+00   0.0000E+00   8.6800E+00   0.0000E+00
  8.0000E+00   1.3030E+00   0.0000E+00   1.1520E+01   0.0000E+00
  2.4000E+01   6.5200E-01   0.0000E+00   1.9630E+01   0.0000E+00
  4.8000E+01   6.5200E-01   0.0000E+00   3.8400E+01   0.0000E+00
  7.2000E+01   6.5200E-01   0.0000E+00   6.1300E+01   0.0000E+00
  9.6000E+01   6.5200E-01   0.0000E+00   8.0030E+01   0.0000E+00
  2.4000E+02   6.5200E-01   0.0000E+00   9.7710E+01   0.0000E+00
  4.8000E+02   6.5200E-01   0.0000E+00   9.7880E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 9:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   8.2500E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   4.7800E-01   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   2.3900E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 10:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   8.2500E-01   9.9910E+01   3.6500E+00   0.0000E+00
  2.0000E+00   4.7800E-01   9.9910E+01   3.6500E+00   0.0000E+00
  8.0000E+00   4.7800E-01   9.9910E+01   4.8900E+00   0.0000E+00
  2.4000E+01   2.3900E-01   9.9910E+01   8.5700E+00   0.0000E+00
  4.8000E+01   2.3900E-01   9.9910E+01   1.8070E+01   0.0000E+00
  7.2000E+01   2.3900E-01   9.9910E+01   3.2550E+01   0.0000E+00
  9.6000E+01   2.3900E-01   9.9910E+01   4.9360E+01   0.0000E+00
  2.4000E+02   2.3900E-01   9.9910E+01   9.1170E+01   0.0000E+00
  4.8000E+02   2.3900E-01   9.9910E+01   9.3910E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 11:
  0
  0
  0
  0
  0
  1
 10
  0.0000E+00   2.2500E+00   0.0000E+00   8.9700E+00   0.0000E+00
  2.0000E+00   1.3030E+00   0.0000E+00   8.9700E+00   0.0000E+00
  8.0000E+00   1.3030E+00   0.0000E+00   1.1900E+01   0.0000E+00
  2.4000E+01   6.5200E-01   0.0000E+00   2.0250E+01   0.0000E+00
  4.8000E+01   6.5200E-01   0.0000E+00   3.9440E+01   0.0000E+00
  7.2000E+01   6.5200E-01   0.0000E+00   6.2550E+01   0.0000E+00
  9.6000E+01   6.5200E-01   0.0000E+00   8.1060E+01   0.0000E+00
```

```
  2.4000E+02   6.5200E-01   0.0000E+00   9.7730E+01   0.0000E+00
  4.8000E+02   6.5200E-01   0.0000E+00   9.7890E+01   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
EAB
  3
  1
  4
  0.0000E+00   1.7900E-04
  1.0000E+00   1.7900E-04
  2.0000E+00   1.7900E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  0
Location 2:
LPZ
  3
  1
  6
  0.0000E+00   2.0000E-05
  4.0000E+00   2.0000E-05
  8.0000E+00   1.3400E-05
  2.4000E+01   5.5900E-06
  9.6000E+01   1.6000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   2.3000E-04
  0
Location 3:
CR
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   3.5000E-04
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  7
  0.0000E+00   4.5200E-03
  3.3330E-01   4.5200E-03
  2.0000E+00   3.3300E-03
  8.0000E+00   1.1900E-03
  2.4000E+01   8.2700E-04
  9.6000E+01   6.4000E-04
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   1.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   5.0000E-01
```

```
  8.0000E+00   1.0000E+00
  2.4000E+01   2.0000E+00
  9.6000E+01   5.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\radtrad3.o388
  1
  1
  1
  0
  0
End of Scenario File
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 10:59:42
########################################################################

########################################################################
                    Plant Description
########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.5867E+03 MWth

Number of compartments    =   8

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: DW
Compartment volume =   1.5000E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Exit Pathway Number    1: DW to  RB
   Exit Pathway Number    6: DW to  MSL "B" Volume 1
   Exit Pathway Number    9: DW to  MSL "C" Volume 3

Compartment number  2
Name: RB
Compartment volume =   1.1850E+06 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  2
   Inlet Pathway Number   1: DW to  RB
   Exit Pathway Number    2: RB toEnvironment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   2: RB toEnvironment
   Inlet Pathway Number   5: CR to  Environment - Exhaust
   Inlet Pathway Number   8: MSL "B" Volume 2 to  Environment
   Inlet Pathway Number  11: MSL "C" Volume 4 to  Environment
   Exit Pathway Number    3: Environment to CR Unfiltered
   Exit Pathway Number    4: Environment to  CR Filtered

Compartment number  4
Name: CR
Compartment volume =   1.0100E+05 (Cubic feet)
Compartment type is Control Room
Pathways into and out of compartment  4
   Inlet Pathway Number   3: Environment to CR Unfiltered
   Inlet Pathway Number   4: Environment to  CR Filtered
   Exit Pathway Number    5: CR to  Environment - Exhaust

Compartment number  5
Name: MSL "B" Volume 1
Compartment volume =   2.9829E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  5
   Inlet Pathway Number   6: DW to  MSL "B" Volume 1
   Exit Pathway Number    7: MSL "B" Volume 1 to  MSL "B" Volume 2

Compartment number  6
Name: MSL "B" Volume 2
Compartment volume =   5.0800E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  6
   Inlet Pathway Number   7: MSL "B" Volume 1 to  MSL "B" Volume 2
   Exit Pathway Number    8: MSL "B" Volume 2 to  Environment
```

```
Compartment number  7
Name: MSL "C" Volume 3
Compartment volume =   2.5777E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  7
   Inlet Pathway Number   9: DW to  MSL "C" Volume 3
   Exit Pathway Number   10: MSL "C" Volume 3 to  MSL "C" Volume 4

Compartment number  8
Name: MSL "C" Volume 4
Compartment volume =   5.4852E+02 (Cubic feet)
Compartment type is Normal
Pathways into and out of compartment  8
   Inlet Pathway Number  10: MSL "C" Volume 3 to  MSL "C" Volume 4
   Exit Pathway Number   11: MSL "C" Volume 4 to  Environment

Total number of pathways =  11
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 10:59:42
########################################################################

########################################################################
                     Scenario Description
########################################################################

Radioactive Decay is enabled
Calculation of Daughters is enabled

Release Fractions and Timings
               GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
            0.500000 hr    1.5000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        4.279E+03
IODINE       5.0000E-02     2.5000E-01      0.0000E+00        2.249E+02
CESIUM       5.0000E-02     2.0000E-01      0.0000E+00        4.682E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        3.100E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.674E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.550E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.852E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        5.214E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.978E+00

Inventory Power =      2587. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
               (Ci/MWt)      (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   1.529E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.830E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   5.260E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.670E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.740E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.360E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.600E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   3.240E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   4.260E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.030E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.200E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   4.400E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   4.110E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.250E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.640E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   5.020E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.860E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   5.030E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.140E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.540E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.460E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   3.180E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.940E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.980E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.560E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   7.910E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.530E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   4.340E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   7.420E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.430E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   5.380E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.860E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.710E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.960E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.640E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.430E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
 I-135     2   5.330E+04  2.380E+04   8.294E-14   8.460E-09   3.320E-10
 Xe-133    1   5.630E+04  4.532E+05   1.560E-15   0.000E+00   0.000E+00
 Xe-135    1   2.310E+04  3.272E+04   1.190E-14   0.000E+00   0.000E+00
 Cs-134    3   7.220E+03  6.507E+07   7.570E-14   1.110E-08   1.250E-08
 Cs-136    3   2.160E+03  1.132E+06   1.060E-13   1.730E-09   1.980E-09
 Cs-137    3   5.810E+03  9.467E+08   2.725E-14   7.930E-09   8.630E-09
 Ba-139    6   5.150E+04  4.962E+03   2.170E-15   2.400E-12   4.640E-11
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Ba-140	6	5.000E+04	1.101E+06	8.580E-15	2.560E-10	1.010E-09
La-140	9	5.240E+04	1.450E+05	1.170E-13	6.870E-11	1.310E-09
La-141	9	4.700E+04	1.415E+04	2.390E-15	9.400E-12	1.570E-10
La-142	9	4.600E+04	5.550E+03	1.440E-13	8.740E-12	6.840E-11
Ce-141	8	4.720E+04	2.808E+06	3.430E-15	2.550E-11	2.420E-09
Ce-143	8	4.560E+04	1.188E+05	1.290E-14	6.230E-12	9.160E-10
Ce-144	8	3.790E+04	2.456E+07	2.773E-15	2.920E-10	1.010E-07
Pr-143	9	4.430E+04	1.172E+06	2.100E-17	1.680E-18	2.190E-09
Nd-147	9	1.850E+04	9.487E+05	6.190E-15	1.820E-11	1.850E-09
Np-239	8	5.370E+05	2.035E+05	7.690E-15	7.620E-12	6.780E-10
Pu-238	8	1.530E+02	2.769E+09	4.880E-18	3.860E-10	7.790E-05
Pu-239	8	1.340E+01	7.594E+11	4.240E-18	3.750E-10	8.330E-05
Pu-240	8	2.510E+01	2.063E+11	4.750E-18	3.760E-10	8.330E-05
Pu-241	8	5.410E+03	4.544E+08	7.250E-20	9.150E-12	1.340E-06
Am-241	9	9.060E+00	1.364E+10	8.180E-16	1.600E-09	1.200E-04
Cm-242	9	2.300E+03	1.407E+07	5.690E-18	9.410E-10	4.670E-06
Cm-244	9	1.520E+02	5.715E+08	4.910E-18	1.010E-09	6.700E-05

Nuclide	Daughter	Fraction	Daughter	Fraction	Daughter	Fraction
Kr-85m	Kr-85	0.21	none	0.00	none	0.00
Kr-87	Rb-87	1.00	none	0.00	none	0.00
Kr-88	Rb-88	1.00	none	0.00	none	0.00
Sr-90	Y-90	1.00	none	0.00	none	0.00
Sr-91	Y-91m	0.58	Y-91	0.42	none	0.00
Sr-92	Y-92	1.00	none	0.00	none	0.00
Y-93	Zr-93	1.00	none	0.00	none	0.00
Zr-95	Nb-95m	0.01	Nb-95	0.99	none	0.00
Zr-97	Nb-97m	0.95	Nb-97	0.05	none	0.00
Mo-99	Tc-99m	0.88	Tc-99	0.12	none	0.00
Tc-99m	Tc-99	1.00	none	0.00	none	0.00
Ru-103	Rh-103m	1.00	none	0.00	none	0.00
Ru-105	Rh-105	1.00	none	0.00	none	0.00
Ru-106	Rh-106	1.00	none	0.00	none	0.00
Sb-127	Te-127m	0.18	Te-127	0.82	none	0.00
Sb-129	Te-129m	0.22	Te-129	0.77	none	0.00
Te-127m	Te-127	0.98	none	0.00	none	0.00
Te-129	I-129	1.00	none	0.00	none	0.00
Te-129m	Te-129	0.65	I-129	0.35	none	0.00
Te-131m	Te-131	0.22	I-131	0.78	none	0.00
Te-132	I-132	1.00	none	0.00	none	0.00
I-131	Xe-131m	0.01	none	0.00	none	0.00
I-133	Xe-133m	0.03	Xe-133	0.97	none	0.00
I-135	Xe-135m	0.15	Xe-135	0.85	none	0.00
Xe-135	Cs-135	1.00	none	0.00	none	0.00
Cs-137	Ba-137m	0.95	none	0.00	none	0.00
Ba-140	La-140	1.00	none	0.00	none	0.00
La-141	Ce-141	1.00	none	0.00	none	0.00
Ce-143	Pr-143	1.00	none	0.00	none	0.00
Ce-144	Pr-144m	0.02	Pr-144	0.98	none	0.00
Nd-147	Pm-147	1.00	none	0.00	none	0.00
Np-239	Pu-239	1.00	none	0.00	none	0.00
Pu-238	U-234	1.00	none	0.00	none	0.00
Pu-239	U-235	1.00	none	0.00	none	0.00
Pu-240	U-236	1.00	none	0.00	none	0.00
Pu-241	U-237	0.00	Am-241	1.00	none	0.00
Am-241	Np-237	1.00	none	0.00	none	0.00
Cm-242	Pu-238	1.00	none	0.00	none	0.00
Cm-244	Pu-240	1.00	none	0.00	none	0.00

Iodine fractions
- Aerosol = 9.5000E-01
- Elemental = 4.8500E-02
- Organic = 1.5000E-03

COMPARTMENT DATA

Compartment number 1: DW

Sprays: Aerosal Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01

1.5000E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	3.0000E+00
2.3000E+00	3.0000E+00
2.4000E+00	3.0000E+00
3.0000E+00	3.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Sprays: Elemental Removal Data

Time (hr)	Removal Coef. (hr^-1)
0.0000E+00	0.0000E+00
3.3330E-01	3.0000E+01
1.5000E+00	3.0000E+01
2.0000E+00	3.0000E+01
2.1000E+00	0.0000E+00
2.3000E+00	0.0000E+00
2.4000E+00	0.0000E+00
3.0000E+00	0.0000E+00
4.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00

Compartment number 2: RB

Compartment number 3: Environment

Compartment number 4: CR

Compartment number 5: MSL "B" Volume 1

Compartment number 6: MSL "B" Volume 2

Compartment number 7: MSL "C" Volume 3

Compartment number 8: MSL "C" Volume 4

PATHWAY DATA

Pathway number 1: DW to RB

Convection Data

Time (hr)	Flow Rate (% / day)
0.0000E+00	1.5000E+00
2.4000E+01	7.5000E-01
7.2000E+02	0.0000E+00

Pathway number 2: RB toEnvironment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
3.3330E-01	0.0000E+00	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 3: Environment to CR Unfiltered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	4.0000E+02	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 4: Environment to CR Filtered

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic

0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5.0000E-01	1.1000E+03	9.7000E+01	9.7000E+01	9.7000E+01
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 5: CR to Environment - Exhaust

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.1120E+03	1.0000E+02	1.0000E+02	1.0000E+02
5.0000E-01	1.5000E+03	1.0000E+02	1.0000E+02	1.0000E+02
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 6: DW to MSL "B" Volume 1

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.0000E+00	4.7800E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.4000E+01	2.3900E-01	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 7: MSL "B" Volume 1 to MSL "B" Volume 2

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	9.9940E+01	4.9200E+00	0.0000E+00
2.0000E+00	4.7800E-01	9.9940E+01	4.9200E+00	0.0000E+00
8.0000E+00	4.7800E-01	9.9940E+01	6.5700E+00	0.0000E+00
2.4000E+01	2.3900E-01	9.9940E+01	1.1440E+01	0.0000E+00
4.8000E+01	2.3900E-01	9.9940E+01	2.3680E+01	0.0000E+00
7.2000E+01	2.3900E-01	9.9940E+01	4.1310E+01	0.0000E+00
9.6000E+01	2.3900E-01	9.9940E+01	6.0070E+01	0.0000E+00
2.4000E+02	2.3900E-01	9.9940E+01	9.5290E+01	0.0000E+00
4.8000E+02	2.3900E-01	9.9940E+01	9.6640E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 8: MSL "B" Volume 2 to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.2500E+00	0.0000E+00	8.6800E+00	0.0000E+00
2.0000E+00	1.3030E+00	0.0000E+00	8.6800E+00	0.0000E+00
8.0000E+00	1.3030E+00	0.0000E+00	1.1520E+01	0.0000E+00
2.4000E+01	6.5200E-01	0.0000E+00	1.9630E+01	0.0000E+00
4.8000E+01	6.5200E-01	0.0000E+00	3.8400E+01	0.0000E+00
7.2000E+01	6.5200E-01	0.0000E+00	6.1300E+01	0.0000E+00
9.6000E+01	6.5200E-01	0.0000E+00	8.0030E+01	0.0000E+00
2.4000E+02	6.5200E-01	0.0000E+00	9.7710E+01	0.0000E+00
4.8000E+02	6.5200E-01	0.0000E+00	9.7880E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 9: DW to MSL "C" Volume 3

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.0000E+00	4.7800E-01	0.0000E+00	0.0000E+00	0.0000E+00
2.4000E+01	2.3900E-01	0.0000E+00	0.0000E+00	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 10: MSL "C" Volume 3 to MSL "C" Volume 4

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	8.2500E-01	9.9910E+01	3.6500E+00	0.0000E+00
2.0000E+00	4.7800E-01	9.9910E+01	3.6500E+00	0.0000E+00
8.0000E+00	4.7800E-01	9.9910E+01	4.8900E+00	0.0000E+00
2.4000E+01	2.3900E-01	9.9910E+01	8.5700E+00	0.0000E+00
4.8000E+01	2.3900E-01	9.9910E+01	1.8070E+01	0.0000E+00
7.2000E+01	2.3900E-01	9.9910E+01	3.2550E+01	0.0000E+00
9.6000E+01	2.3900E-01	9.9910E+01	4.9360E+01	0.0000E+00
2.4000E+02	2.3900E-01	9.9910E+01	9.1170E+01	0.0000E+00
4.8000E+02	2.3900E-01	9.9910E+01	9.3910E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Pathway number 11: MSL "C" Volume 4 to Environment

Pathway Filter: Removal Data

Time (hr)	Flow Rate (cfm)	Filter Efficiencies (%) Aerosol	Elemental	Organic
0.0000E+00	2.2500E+00	0.0000E+00	8.9700E+00	0.0000E+00
2.0000E+00	1.3030E+00	0.0000E+00	8.9700E+00	0.0000E+00
8.0000E+00	1.3030E+00	0.0000E+00	1.1900E+01	0.0000E+00
2.4000E+01	6.5200E-01	0.0000E+00	2.0250E+01	0.0000E+00
4.8000E+01	6.5200E-01	0.0000E+00	3.9440E+01	0.0000E+00
7.2000E+01	6.5200E-01	0.0000E+00	6.2550E+01	0.0000E+00
9.6000E+01	6.5200E-01	0.0000E+00	8.1060E+01	0.0000E+00
2.4000E+02	6.5200E-01	0.0000E+00	9.7730E+01	0.0000E+00
4.8000E+02	6.5200E-01	0.0000E+00	9.7890E+01	0.0000E+00
7.2000E+02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

LOCATION DATA

Location EAB is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	1.7900E-04
1.0000E+00	1.7900E-04
2.0000E+00	1.7900E-04
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
7.2000E+02	3.5000E-04

Location LPZ is in compartment 3

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	2.0000E-05
4.0000E+00	2.0000E-05
8.0000E+00	1.3400E-05
2.4000E+01	5.5900E-06
9.6000E+01	1.6000E-06
7.2000E+02	0.0000E+00

Location Breathing Rate Data

Time (hr)	Breathing Rate (m^3 * sec^-1)
0.0000E+00	3.5000E-04
8.0000E+00	1.8000E-04
2.4000E+01	2.3000E-04
7.2000E+02	2.3000E-04

Location CR is in compartment 4

Location X/Q Data

Time (hr)	X/Q (s * m^-3)
0.0000E+00	4.5200E-03
3.3330E-01	4.5200E-03
2.0000E+00	3.3300E-03
8.0000E+00	1.1900E-03
2.4000E+01	8.2700E-04

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        9.6000E+01          6.4000E-04
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)         Breathing Rate (m^3 * sec^-1)
        0.0000E+00                3.5000E-04
        7.2000E+02                3.5000E-04

      Location Occupancy Factor Data
       Time (hr)         Occupancy Factor
        0.0000E+00           1.0000E+00
        2.4000E+01           6.0000E-01
        9.6000E+01           4.0000E-01
        7.2000E+02           0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time            Time step
       0.0000E+00       1.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       5.0000E-01
       8.0000E+00       1.0000E+00
       2.4000E+01       2.0000E+00
       9.6000E+01       5.0000E+00
       7.2000E+02       0.0000E+00
```

```
########################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  7/04/2019  at 10:59:42
########################################################################




     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
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    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


########################################################################
           Dose, Detailed model and Detailed Inventory Output
########################################################################

EAB Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0539E-05  4.4832E-04  2.4797E-05
Accumulated dose (rem)  1.0539E-05  4.4832E-04  2.4797E-05

LPZ Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1776E-06  5.0091E-05  2.7706E-06
Accumulated dose (rem)  1.1776E-06  5.0091E-05  2.7706E-06

CR Doses:

Time (h) =   0.3333    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.7313E-07  8.8969E-04  2.9165E-05
Accumulated dose (rem)  8.7313E-07  8.8969E-04  2.9165E-05

DW Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.5339E+04  1.1556E-01  8.1875E+23  1.0363E+18
Kr-85m                 7.0976E+05  8.6246E-05  6.1104E+20  1.6510E+19
Kr-87                  1.2507E+06  4.4153E-05  3.0563E+20  3.0427E+19
Kr-88                  1.8753E+06  1.4955E-04  1.0235E+21  4.4068E+19
Rb-86                  5.6860E+03  6.9881E-05  4.8934E+20  1.2999E+17
I-131                  2.3333E+06  1.8821E-02  8.6521E+22  5.3353E+19
I-132                  3.2389E+06  3.1378E-04  1.4315E+21  7.5375E+19
I-133                  4.8078E+06  4.2441E-03  1.9217E+22  1.1030E+20
I-134                  4.2584E+06  1.5963E-04  7.1740E+20  1.0662E+20
I-135                  4.4365E+06  1.2633E-03  5.6353E+21  1.0261E+20
Xe-133                 4.8525E+06  2.5924E-02  1.1738E+23  1.1091E+20
Xe-135                 2.0375E+06  7.9785E-04  3.5591E+21  4.6188E+19
Cs-134                 6.2233E+05  4.8100E-01  2.1617E+24  1.4225E+19
Cs-136                 1.8605E+05  2.5385E-03  1.1240E+22  4.2535E+18
Cs-137                 5.0080E+05  5.7575E+00  2.5308E+25  1.1447E+19

DW Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.4163E+23  0.0000E+00
Elemental I (atoms)    5.5058E+21  0.0000E+00
Organic I (atoms)      1.7028E+20  0.0000E+00
Aerosols (kg)          6.2647E+00  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         7.7352E-04
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   9.8338E-04
Total I (Ci)                                   1.9075E+07

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
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Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

DW to  MSL "B" Volume 1 Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.1790E+19
Elemental I (atoms)    0.0000E+00  3.0354E+17
Organic I (atoms)      0.0000E+00  9.3880E+15
Aerosols (kg)          0.0000E+00  3.4455E-04

RB Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  4.7227E+00  1.2038E-05  8.5284E+19  7.3026E+13
Kr-85m                 7.3931E+01  8.9837E-09  6.3648E+16  1.1583E+15
Kr-87                  1.3027E+02  4.5991E-09  3.1835E+16  2.1109E+15
Kr-88                  1.9534E+02  1.5578E-08  1.0661E+17  3.0839E+15
Rb-86                  5.9228E-01  7.2790E-09  5.0971E+16  9.1594E+12
I-131                  2.4304E+02  1.9604E-06  9.0121E+18  3.7592E+15
I-132                  3.3187E+02  3.2151E-08  1.4668E+17  5.2232E+15
I-133                  5.0080E+02  4.4208E-07  2.0017E+18  7.7656E+15
I-134                  4.4357E+02  1.6628E-08  7.4727E+16  7.3438E+15
I-135                  4.6212E+02  1.3159E-07  5.8699E+17  7.2095E+15
Xe-133                 5.0546E+02  2.7004E-06  1.2227E+19  7.8157E+15
Xe-135                 2.1223E+02  8.3107E-08  3.7073E+17  3.2610E+15
Cs-134                 6.4824E+01  5.0103E-05  2.2517E+20  1.0024E+15
Cs-136                 1.9379E+01  2.6442E-07  1.1708E+18  2.9971E+14
Cs-137                 5.2165E+01  5.9972E-04  2.6362E+21  8.0662E+14

RB Transport Group Inventory:
Time (h) =   0.3333    Atmosphere     Sump
Noble gases (atoms)    9.8084E+19  0.0000E+00
Elemental I (atoms)    5.7338E+17  0.0000E+00
Organic I (atoms)      1.7733E+16  0.0000E+00
Aerosols (kg)          6.5255E-04  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.0198E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.2960E-08
Total I (Ci)                                    1.9814E+03

DW to  RB Transport Group Inventory:
Time (h) =   0.3333  Leakage Transport

Noble gases (atoms)      9.8088E+19
Elemental I (atoms)      5.7490E+17
Organic I (atoms)        1.7780E+16
Aerosols (kg)            6.5256E-04

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   0.3333     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   0.3333       Ci           kg         Atoms      Decay
Kr-85                  8.5071E-06  2.1683E-11  1.5362E+14  8.2563E+07
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Kr-85m	1.3317E-04	1.6182E-14	1.1465E+11	1.3040E+09
Kr-87	2.3466E-04	8.2845E-15	5.7345E+10	2.3506E+09
Kr-88	3.5187E-04	2.8061E-14	1.9203E+11	3.4633E+09
Rb-86	8.0566E-10	9.9015E-18	6.9335E+07	7.8198E+03
I-131	1.9503E-05	1.5731E-13	7.2318E+11	1.8932E+08
I-132	2.6292E-05	2.5472E-15	1.1621E+10	2.5880E+08
I-133	4.0188E-05	3.5476E-14	1.6063E+11	3.9077E+08
I-134	3.5596E-05	1.3343E-15	5.9967E+09	3.6175E+08
I-135	3.7084E-05	1.0560E-14	4.7105E+10	3.6208E+08
Xe-133	9.0987E-04	4.8609E-12	2.2010E+13	8.8316E+09
Xe-135	3.7532E-04	1.4697E-13	6.5561E+11	3.6407E+09
Cs-134	8.8179E-08	6.8154E-14	3.0629E+11	8.5580E+05
Cs-136	2.6361E-08	3.5968E-16	1.5927E+09	2.5588E+05
Cs-137	7.0959E-08	8.1579E-13	3.5860E+12	6.8868E+05

CR Transport Group Inventory:

Time (h) = 0.3333	Atmosphere	Sump	
Noble gases (atoms)	1.7665E+14	0.0000E+00	
Elemental I (atoms)	9.0132E+11	0.0000E+00	
Organic I (atoms)	3.1938E+10	0.0000E+00	
Aerosols (kg)	8.8765E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.6007E-15
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2198E-14
Total I (Ci)			1.5866E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.9172E+14
Elemental I (atoms)	0.0000E+00	9.7969E+11
Organic I (atoms)	0.0000E+00	3.4715E+10
Aerosols (kg)	0.0000E+00	9.6328E-13

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 0.3333	Filtered	Transported
Noble gases (atoms)	1.5049E+13	0.0000E+00
Elemental I (atoms)	7.6882E+10	0.0000E+00
Organic I (atoms)	2.7242E+09	0.0000E+00
Aerosols (kg)	7.5616E-14	0.0000E+00

EAB Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.9493E-05	1.6406E-03	9.1622E-05
Accumulated dose (rem)	5.0032E-05	2.0889E-03	1.1642E-04

LPZ Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.4126E-06	1.8331E-04	1.0237E-05
Accumulated dose (rem)	5.5901E-06	2.3340E-04	1.3008E-05

CR Doses:

Time (h) = 0.5000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.1864E-06	5.3906E-03	1.7646E-04
Accumulated dose (rem)	6.0596E-06	6.2803E-03	2.0563E-04

DW Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	6.8009E+04	1.7334E-01	1.2281E+24	2.3096E+18
Kr-85m	1.0375E+06	1.2607E-04	8.9321E+20	3.6171E+19
Kr-87	1.7130E+06	6.0476E-05	4.1862E+20	6.3902E+19
Kr-88	2.7008E+06	2.1539E-04	1.4740E+21	9.5608E+19
Rb-86	6.0304E+02	7.4113E-06	5.1898E+19	1.6215E+17
I-131	2.5229E+05	2.0350E-03	9.3551E+21	6.6630E+19
I-132	3.6181E+05	3.5051E-05	1.5991E+20	9.3943E+19
I-133	5.1719E+05	4.5656E-04	2.0673E+21	1.3762E+20
I-134	4.0377E+05	1.5135E-05	6.8021E+19	1.2989E+20
I-135	4.7159E+05	1.3429E-04	5.9903E+20	1.2772E+20
Xe-133	7.2742E+06	3.8862E-02	1.7596E+23	2.4715E+20
Xe-135	3.0409E+06	1.1908E-03	5.3118E+21	1.0329E+20
Cs-134	6.6019E+04	5.1026E-02	2.2932E+23	1.7745E+19
Cs-136	1.9729E+04	2.6919E-04	1.1920E+21	5.3059E+18
Cs-137	5.3127E+04	6.1078E-01	2.6848E+24	1.4280E+19

DW Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	1.4122E+24	0.0000E+00	
Elemental I (atoms)	5.8262E+20	7.6685E+21	
Organic I (atoms)	2.5457E+20	0.0000E+00	
Aerosols (kg)	6.6457E-01	8.7318E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		8.3482E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.0587E-04
Total I (Ci)			2.0066E+06

DW to RB Transport Group Inventory:

Time (h) = 0.5000	Leakage Transport
Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1654E+20
Elemental I (atoms)	0.0000E+00	3.8790E+17
Organic I (atoms)	0.0000E+00	2.1078E+16
Aerosols (kg)	0.0000E+00	4.4060E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 0.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1654E+20
Elemental I (atoms)	0.0000E+00	3.8790E+17
Organic I (atoms)	0.0000E+00	2.1078E+16
Aerosols (kg)	0.0000E+00	4.4060E-04

RB Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	1.0628E+01	2.7088E-05	1.9191E+20	2.4298E+14
Kr-85m	1.6213E+02	1.9701E-08	1.3958E+17	3.7805E+15
Kr-87	2.6769E+02	9.4505E-09	6.5416E+16	6.5659E+15
Kr-88	4.2204E+02	3.3658E-08	2.3033E+17	9.9543E+15
Rb-86	7.5723E-01	9.3063E-09	6.5167E+16	2.4965E+13
I-131	3.1098E+02	2.5084E-06	1.1531E+19	1.0247E+16
I-132	4.0740E+02	3.9468E-08	1.8006E+17	1.3901E+16
I-133	6.3761E+02	5.6286E-07	2.5486E+18	2.1101E+16
I-134	4.9777E+02	1.8660E-08	8.3858E+16	1.8420E+16
I-135	5.8139E+02	1.6555E-07	7.3850E+17	1.9440E+16
Xe-133	1.1370E+03	6.0745E-06	2.7505E+19	2.6003E+16
Xe-135	4.7868E+02	1.8744E-07	8.3615E+17	1.0914E+16
Cs-134	8.2898E+01	6.4072E-05	2.8795E+20	2.7325E+15
Cs-136	2.4774E+01	3.3802E-07	1.4968E+18	8.1686E+14
Cs-137	6.6710E+01	7.6695E-04	3.3713E+21	2.1989E+15

RB Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	2.2069E+20	0.0000E+00	
Elemental I (atoms)	7.3066E+17	0.0000E+00	
Organic I (atoms)	3.9769E+16	0.0000E+00	
Aerosols (kg)	8.3449E-04	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3019E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6479E-08
Total I (Ci)			2.4352E+03

DW to RB Transport Group Inventory:

Time (h) = 0.5000 Leakage Transport

Noble gases (atoms)	2.2071E+20
Elemental I (atoms)	7.3466E+17
Organic I (atoms)	3.9920E+16
Aerosols (kg)	8.3447E-04

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 0.5000	Ci	kg	Atoms	Decay
Kr-85	4.0823E-05	1.0405E-10	7.3719E+14	5.8598E+08
Kr-85m	6.2278E-04	7.5677E-14	5.3616E+11	9.0597E+09
Kr-87	1.0283E-03	3.6301E-14	2.5128E+11	1.5479E+10
Kr-88	1.6212E-03	1.2929E-13	8.8476E+11	2.3767E+10
Rb-86	3.5862E-09	4.4074E-17	3.0863E+08	5.3931E+04
I-131	8.7014E-05	7.0187E-13	3.2265E+12	1.3066E+09
I-132	1.1257E-04	1.0906E-14	4.9755E+10	1.7284E+09
I-133	1.7841E-04	1.5749E-13	7.1312E+11	2.6860E+09
I-134	1.3928E-04	5.2211E-15	2.3464E+10	2.2442E+09
I-135	1.6268E-04	4.6323E-14	2.0664E+11	2.4646E+09
Xe-133	4.3645E-03	2.3317E-11	1.0558E+14	6.2663E+10
Xe-135	1.8042E-03	7.0651E-13	3.1516E+12	2.5888E+10
Cs-134	3.9261E-07	3.0344E-13	1.3637E+12	5.9034E+06
Cs-136	1.1733E-07	1.6009E-15	7.0887E+09	1.7645E+06
Cs-137	3.1594E-07	3.6322E-12	1.5966E+13	4.7506E+06

CR Transport Group Inventory:

Time (h) = 0.5000	Atmosphere	Sump	
Noble gases (atoms)	8.4759E+14	0.0000E+00	
Elemental I (atoms)	3.9990E+12	0.0000E+00	
Organic I (atoms)	1.5272E+11	0.0000E+00	
Aerosols (kg)	3.9521E-12	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.2738E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.4081E-14
Total I (Ci)			6.7996E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.5700E+14
Elemental I (atoms)	0.0000E+00	4.5513E+12
Organic I (atoms)	0.0000E+00	1.7281E+11
Aerosols (kg)	0.0000E+00	4.4872E-12

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 0.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00

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Aerosols (kg)          0.0000E+00  0.0000E+00

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    1.0928E+14  0.0000E+00
Elemental I (atoms)    5.4237E+11  0.0000E+00
Organic I (atoms)      1.9727E+10  0.0000E+00
Aerosols (kg)          5.3499E-13  0.0000E+00

EAB Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7565E-04  1.5340E-02  1.2624E-03
Accumulated dose (rem)  8.2568E-04  1.7429E-02  1.3789E-03

LPZ Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6665E-05  1.7140E-03  1.4105E-04
Accumulated dose (rem)  9.2255E-05  1.9474E-03  1.5406E-04

CR Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1774E-04  4.1244E-02  1.4262E-03
Accumulated dose (rem)  1.2380E-04  4.7524E-02  1.6318E-03

DW Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg          Atoms      Decay
Co-58                  2.1963E+01  6.9069E-07  7.1715E+18  1.3792E+15
Co-60                  2.6297E+01  2.3263E-05  2.3349E+20  1.6512E+15
Kr-85                  4.9869E+05  1.2711E+00  9.0055E+24  2.1469E+19
Kr-85m                 7.0415E+06  8.5564E-04  6.0621E+21  3.1473E+20
Kr-87                  9.5646E+06  3.3767E-04  2.3373E+21  4.7198E+20
Kr-88                  1.7529E+07  1.3979E-03  9.5665E+21  8.0098E+20
Rb-86                  7.5756E+02  9.3104E-06  6.5196E+19  2.1203E+17
Sr-89                  3.7226E+04  1.2813E-03  8.6701E+21  2.3378E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  3.0751E+17
Sr-91                  4.3069E+04  1.1881E-05  7.8626E+19  2.7517E+18
Sr-92                  3.7386E+04  2.9744E-06  1.9470E+19  2.4958E+18
Y-90                   5.2590E+01  9.6662E-08  6.4679E+17  3.2617E+15
Y-91                   4.7268E+02  1.9274E-05  1.2755E+20  2.9677E+16
Y-92                   7.5766E+02  7.8739E-08  5.1541E+17  4.2881E+16
Y-93                   4.9803E+02  1.4928E-07  9.6662E+17  3.1787E+16
Zr-95                  5.7684E+02  2.6851E-05  1.7021E+20  3.6225E+16
Zr-97                  5.3625E+02  2.8051E-07  1.7415E+18  3.4002E+16
Nb-95                  5.7824E+02  1.4788E-05  9.3740E+19  3.6309E+16
Mo-99                  7.3090E+03  1.5239E-05  9.2700E+19  4.6010E+17
Tc-99m                 6.5180E+03  1.2396E-06  7.5403E+18  4.0917E+17
Ru-103                 6.4043E+03  1.9844E-04  1.1602E+21  4.0221E+17
Ru-105                 3.9092E+03  5.8154E-07  3.3354E+18  2.5477E+17
Ru-106                 2.7875E+03  8.3320E-04  4.7337E+21  1.7504E+17
Rh-105                 4.2812E+03  5.0722E-06  2.9091E+19  2.6889E+17
Sb-127                 7.3024E+03  2.7345E-05  1.2966E+20  4.5936E+17
Sb-129                 1.9363E+04  3.4433E-06  1.6075E+19  1.2633E+18
Te-127                 7.2686E+03  2.7542E-06  1.3060E+19  4.5630E+17
Te-127m                1.2473E+03  1.3224E-04  6.2704E+20  7.8323E+16
Te-129                 2.0176E+04  9.6343E-07  4.4976E+18  1.2847E+18
Te-129m                4.1102E+03  1.3644E-04  6.3694E+20  2.5809E+17
Te-131m                1.5109E+04  1.8948E-05  8.7103E+19  9.5394E+17
Te-132                 1.0996E+05  3.6219E-04  1.6524E+21  6.9190E+18
I-131                  4.0160E+05  3.2394E-03  1.4892E+22  9.2575E+19
I-132                  5.7885E+05  5.6078E-05  2.5584E+20  1.3141E+20
I-133                  8.1089E+05  7.1582E-04  3.2412E+21  1.9039E+20
I-134                  4.3350E+05  1.6250E-05  7.3030E+19  1.6406E+20
I-135                  7.1342E+05  2.0315E-04  9.0620E+20  1.7498E+20
Xe-133                 5.3281E+07  2.8465E-01  1.2889E+24  2.2952E+21
Xe-135                 2.2407E+07  8.7742E-03  3.9140E+22  9.6498E+20
Cs-134                 8.2998E+04  6.4149E-02  2.8829E+23  2.3208E+19
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Cs-136	2.4777E+04	3.3806E-04	1.4969E+21	6.9376E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	1.8676E+19
Ba-139	3.5806E+04	2.1890E-06	9.4838E+18	2.5389E+18
Ba-140	5.7350E+04	7.8337E-04	3.3697E+21	3.6031E+18
La-140	6.3959E+02	1.1507E-06	4.9498E+18	3.9410E+16
La-141	4.5294E+02	8.0091E-08	3.4207E+17	2.9664E+16
La-142	3.3732E+02	2.3564E-08	9.9933E+16	2.3607E+16
Ce-141	1.3564E+03	4.7604E-05	2.0332E+20	8.5175E+16
Ce-143	1.2833E+03	1.9324E-06	8.1380E+18	8.0984E+16
Ce-144	1.0891E+03	3.4147E-04	1.4281E+21	6.8391E+16
Pr-143	5.0935E+02	7.5641E-06	3.1854E+19	3.1982E+16
Nd-147	2.1212E+02	2.6220E-06	1.0742E+19	1.3328E+16
Np-239	1.5245E+04	6.5714E-05	1.6558E+20	9.6008E+17
Pu-238	4.3973E+00	2.5685E-04	6.4992E+20	2.7612E+14
Pu-239	3.8516E-01	6.1967E-03	1.5614E+22	2.4185E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	4.5297E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	9.7632E+15
Am-241	1.0417E-01	3.0350E-05	7.5838E+19	6.5407E+12
Cm-242	2.6436E+01	7.9764E-06	1.9849E+19	1.6601E+15
Cm-244	1.7474E+00	2.1599E-05	5.3307E+19	1.0972E+14

DW Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	1.0351E+25	0.0000E+00	
Elemental I (atoms)	9.0808E+20	2.1014E+22	
Organic I (atoms)	6.7270E+20	0.0000E+00	
Aerosols (kg)	8.8772E-01	2.1825E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3210E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6621E-04
Total I (Ci)			2.9383E+06

DW to RB Transport Group Inventory:

Time (h) = 1.0000 Leakage Transport	
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.0872E+21
Elemental I (atoms)	0.0000E+00	5.3470E+17
Organic I (atoms)	0.0000E+00	9.7690E+16
Aerosols (kg)	0.0000E+00	5.8462E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	6.4058E-03	2.0145E-10	2.0917E+15	2.0440E+11
Co-60	7.6699E-03	6.7852E-09	6.8102E+16	2.4472E+11
Kr-85	9.9182E+01	2.5280E-04	1.7911E+21	3.2119E+15
Kr-85m	1.4004E+03	1.7017E-07	1.2057E+18	4.6801E+16
Kr-87	1.9023E+03	6.7157E-08	4.6486E+17	6.9051E+16
Kr-88	3.4862E+03	2.7803E-07	1.9026E+18	1.1868E+17
Rb-86	9.9015E-01	1.2169E-08	8.5212E+16	8.3217E+13
Sr-89	1.0857E+01	3.7372E-07	2.5288E+18	3.4646E+14
Sr-90	1.4284E+00	1.0471E-05	7.0067E+19	4.5575E+13
Sr-91	1.2562E+01	3.4653E-09	2.2933E+16	4.0549E+14
Sr-92	1.0904E+01	8.6753E-10	5.6787E+15	3.6249E+14
Y-90	1.8883E-02	3.4707E-11	2.3223E+14	5.5968E+11

Y-91	1.3847E-01	5.6465E-09	3.7367E+16	4.4113E+12
Y-92	7.1730E-01	7.4546E-11	4.8796E+14	1.7291E+13
Y-93	1.4526E-01	4.3539E-11	2.8193E+14	4.6857E+12
Zr-95	1.6824E-01	7.8316E-09	4.9645E+16	5.3686E+12
Zr-97	1.5641E-01	8.1817E-11	5.0795E+14	5.0231E+12
Nb-95	1.6865E-01	4.3131E-09	2.7341E+16	5.3812E+12
Mo-99	2.1318E+00	4.4448E-09	2.7038E+16	6.8133E+13
Tc-99m	1.9011E+00	3.6154E-10	2.1993E+15	6.0636E+13
Ru-103	1.8679E+00	5.7877E-08	3.3839E+17	5.9607E+13
Ru-105	1.1402E+00	1.6962E-10	9.7282E+14	3.7298E+13
Ru-106	8.1304E-01	2.4302E-07	1.3807E+18	2.5942E+13
Rh-105	1.2487E+00	1.4794E-09	8.4849E+15	3.9847E+13
Sb-127	2.1299E+00	7.9755E-09	3.7819E+16	6.8039E+13
Sb-129	5.6476E+00	1.0043E-09	4.6884E+15	1.8488E+14
Te-127	2.1200E+00	8.0331E-10	3.8092E+15	6.7624E+13
Te-127m	3.6381E-01	3.8569E-08	1.8289E+17	1.1608E+13
Te-129	5.8848E+00	2.8100E-10	1.3118E+15	1.8941E+14
Te-129m	1.1988E+00	3.9795E-08	1.8577E+17	3.8250E+13
Te-131m	4.4068E+00	5.5264E-09	2.5405E+16	1.4112E+14
Te-132	3.2071E+01	1.0564E-07	4.8194E+17	1.0247E+15
I-131	4.3161E+02	3.4815E-06	1.6004E+19	3.4959E+16
I-132	5.1533E+02	4.9925E-08	2.2777E+17	4.4666E+16
I-133	8.7180E+02	7.6959E-07	3.4846E+18	7.1369E+16
I-134	4.6606E+02	1.7471E-08	7.8515E+16	5.0764E+16
I-135	7.6700E+02	2.1840E-07	9.7426E+17	6.4424E+16
Xe-133	1.0592E+04	5.6588E-05	2.5622E+20	3.4327E+17
Xe-135	4.4075E+03	1.7259E-06	7.6990E+18	1.4348E+17
Cs-134	1.0848E+02	8.3844E-05	3.7681E+20	9.1123E+15
Cs-136	3.2384E+01	4.4185E-07	1.9565E+18	2.7223E+15
Cs-137	8.7298E+01	1.0036E-03	4.4117E+21	7.3329E+15
Ba-139	1.0443E+01	6.3846E-10	2.7661E+15	3.6149E+14
Ba-140	1.6727E+01	2.2848E-07	9.8283E+17	5.3390E+14
La-140	2.5245E-01	4.5419E-10	1.9537E+15	7.2597E+12
La-141	1.3211E-01	2.3360E-11	9.9771E+13	4.3357E+12
La-142	9.8385E-02	6.8728E-12	2.9147E+13	3.3757E+12
Ce-141	3.9557E-01	1.3883E-08	5.9294E+16	1.2622E+13
Ce-143	3.7430E-01	5.6363E-10	2.3736E+15	1.1983E+13
Ce-144	3.1766E-01	9.9597E-08	4.1652E+17	1.0136E+13
Pr-143	1.4867E-01	2.2078E-09	9.2979E+15	4.7423E+12
Nd-147	6.1867E-02	7.6475E-10	3.1330E+15	1.9748E+12
Np-239	4.4465E+00	1.9167E-08	4.8295E+16	1.4215E+14
Pu-238	1.2825E-03	7.4916E-08	1.8956E+17	4.0922E+10
Pu-239	1.1234E-04	1.8074E-06	4.5541E+18	3.5844E+09
Pu-240	2.1040E-04	9.2335E-07	2.3169E+18	6.7133E+09
Pu-241	4.5349E-02	4.4023E-07	1.1000E+18	1.4470E+12
Am-241	3.0383E-05	8.8524E-09	2.2120E+16	9.6939E+08
Cm-242	7.7105E-03	2.3264E-09	5.7893E+15	2.4603E+11
Cm-244	5.0965E-04	6.2996E-09	1.5548E+16	1.6262E+10

RB Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump	
Noble gases (atoms)	2.0585E+21	0.0000E+00	
Elemental I (atoms)	9.9991E+17	0.0000E+00	
Organic I (atoms)	1.8384E+17	0.0000E+00	
Aerosols (kg)	1.1072E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.7954E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.2499E-08
Total I (Ci)			3.0518E+03

DW to RB Transport Group Inventory:

Time (h) = 1.0000	Leakage Transport
Noble gases (atoms)	2.0591E+21
Elemental I (atoms)	1.0127E+18
Organic I (atoms)	1.8502E+17
Aerosols (kg)	1.1072E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 1.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00

Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 1.0000	Ci	kg	Atoms	Decay
Co-58	6.8028E-12	2.1394E-19	2.2213E+06	1.1500E+02
Co-60	8.1452E-12	7.2057E-18	7.2323E+07	1.3769E+02
Kr-85	5.8999E-04	1.5038E-09	1.0654E+16	1.5065E+10
Kr-85m	8.3306E-03	1.0123E-12	7.1719E+12	2.1835E+11
Kr-87	1.1316E-02	3.9948E-13	2.7652E+12	3.1760E+11
Kr-88	2.0738E-02	1.6538E-12	1.1318E+13	5.5197E+11
Rb-86	7.2070E-09	8.8574E-17	6.2024E+08	3.9138E+05
Sr-89	1.1530E-08	3.9689E-16	2.6855E+09	1.9492E+05
Sr-90	1.5169E-09	1.1120E-14	7.4410E+10	2.5642E+04
Sr-91	1.3340E-08	3.6801E-18	2.4354E+07	2.2713E+05
Sr-92	1.1580E-08	9.2130E-19	6.0307E+06	2.0076E+05
Y-90	2.1880E-11	4.0215E-20	2.6909E+05	3.4824E+02
Y-91	1.4737E-10	6.0093E-18	3.9768E+07	2.4876E+03
Y-92	1.0192E-09	1.0592E-19	6.9332E+05	1.4432E+04
Y-93	1.5426E-10	4.6238E-20	2.9941E+05	2.6253E+03
Zr-95	1.7867E-10	8.3170E-18	5.2722E+07	3.0204E+03
Zr-97	1.6610E-10	8.6888E-20	5.3943E+05	2.8191E+03
Nb-95	1.7911E-10	4.5804E-18	2.9035E+07	3.0276E+03
Mo-99	2.2639E-09	4.7203E-18	2.8713E+07	3.8309E+04
Tc-99m	2.0189E-09	3.8395E-19	2.3356E+06	3.4113E+04
Ru-103	1.9837E-09	6.1464E-17	3.5937E+08	3.3535E+04
Ru-105	1.2108E-09	1.8013E-19	1.0331E+06	2.0785E+04
Ru-106	8.6343E-10	2.5808E-16	1.4662E+09	1.4596E+04
Rh-105	1.3261E-09	1.5711E-18	9.0108E+06	2.2417E+04
Sb-127	2.2619E-09	8.4698E-18	4.0163E+07	3.8263E+04
Sb-129	5.9977E-09	1.0666E-18	4.9790E+06	1.0300E+05
Te-127	2.2514E-09	8.5310E-19	4.0453E+06	3.8046E+04
Te-127m	3.8635E-10	4.0960E-17	1.9422E+08	6.5309E+03
Te-129	6.2495E-09	2.9842E-19	1.3931E+06	1.0612E+05
Te-129m	1.2731E-09	4.2261E-17	1.9729E+08	2.1521E+04
Te-131m	4.6799E-09	5.8689E-18	2.6980E+07	7.9289E+04
Te-132	3.4059E-08	1.1219E-16	5.1181E+08	5.7623E+05
I-131	1.8119E-04	1.4615E-12	6.7186E+12	9.6143E+09
I-132	2.0488E-04	1.9848E-14	9.0552E+10	1.1682E+10
I-133	3.6602E-04	3.2310E-13	1.4630E+12	1.9578E+10
I-134	1.9567E-04	7.3349E-15	3.2964E+10	1.2965E+10
I-135	3.2202E-04	9.1694E-14	4.0903E+11	1.7561E+10
Xe-133	6.2967E-02	3.3639E-10	1.5232E+15	1.6088E+12
Xe-135	2.5778E-02	1.0094E-11	4.5028E+13	6.6121E+11
Cs-134	7.8960E-07	6.1028E-13	2.7427E+12	4.2862E+07
Cs-136	2.3571E-07	3.2161E-15	1.4241E+10	1.2803E+07
Cs-137	6.3542E-07	7.3052E-12	3.2112E+13	3.4492E+07
Ba-139	1.1091E-08	6.7804E-19	2.9376E+06	1.9710E+05
Ba-140	1.7764E-08	2.4265E-16	1.0437E+09	3.0035E+05
La-140	3.0205E-10	5.4343E-19	2.3376E+06	4.7045E+03
La-141	1.4030E-10	2.4808E-20	1.0595E+05	2.4131E+03
La-142	1.0448E-10	7.2988E-21	3.0954E+04	1.8468E+03
Ce-141	4.2007E-10	1.4743E-17	6.2966E+07	7.1012E+03
Ce-143	3.9750E-10	5.9856E-19	2.5207E+06	6.7331E+03
Ce-144	3.3735E-10	1.0577E-16	4.4234E+08	5.7027E+03
Pr-143	1.5795E-10	2.3455E-18	9.8777E+06	2.6692E+03
Nd-147	6.5702E-11	8.1215E-19	3.3271E+06	1.1109E+03
Np-239	4.7221E-09	2.0355E-17	5.1288E+07	7.9919E+04
Pu-238	1.3620E-12	7.9559E-17	2.0131E+08	2.3024E+01
Pu-239	1.1930E-13	1.9194E-15	4.8363E+09	2.0167E+00
Pu-240	2.2344E-13	9.8058E-16	2.4605E+09	3.7771E+00
Pu-241	4.8160E-11	4.6751E-16	1.1682E+09	8.1409E+02
Am-241	3.2267E-14	9.4012E-18	2.3492E+07	5.4542E-01
Cm-242	8.1884E-12	2.4706E-18	6.1482E+06	1.3842E+02
Cm-244	5.4124E-13	6.6900E-18	1.6512E+07	9.1492E+00

CR Transport Group Inventory:

Time (h) = 1.0000	Atmosphere	Sump
Noble gases (atoms)	1.2244E+16	0.0000E+00
Elemental I (atoms)	8.0280E+12	0.0000E+00

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Organic I (atoms)      5.5013E+11  0.0000E+00
Aerosols (kg)          7.9644E-12  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          8.8410E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.1068E-13
Total I (Ci)                                    1.2698E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.5192E+15
Elemental I (atoms)    0.0000E+00  1.0629E+13
Organic I (atoms)      0.0000E+00  6.5944E+11
Aerosols (kg)          0.0000E+00  1.0478E-11

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.7961E+15
Elemental I (atoms)    1.6213E+13  5.0145E+11
Organic I (atoms)      1.2981E+12  4.0147E+10
Aerosols (kg)          1.5981E-11  4.9426E-13

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   1.0000     Filtered   Transported
Noble gases (atoms)    2.0685E+15  0.0000E+00
Elemental I (atoms)    3.0359E+12  0.0000E+00
Organic I (atoms)      1.4619E+11  0.0000E+00
Aerosols (kg)          3.0077E-12  0.0000E+00

EAB Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.5584E-03  3.5186E-02  5.6741E-03
Accumulated dose (rem)  5.3841E-03  5.2615E-02  7.0530E-03

LPZ Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.0932E-04  3.9314E-03  6.3398E-04
Accumulated dose (rem)  6.0158E-04  5.8788E-03  7.8804E-04

CR Doses:

Time (h) =   1.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.3752E-04  9.2983E-02  3.8839E-03
Accumulated dose (rem)  1.0613E-03  1.4051E-01  5.5158E-03

DW Compartment Nuclide Inventory:

Time (h) =   1.5000       Ci           kg          Atoms      Decay
Co-58                  2.1958E+01  6.9055E-07  7.1700E+18  2.8418E+15
Co-60                  2.6296E+01  2.3263E-05  2.3349E+20  3.4026E+15
Kr-85                  9.2911E+05  2.3681E+00  1.6778E+25  7.1883E+19
Kr-85m                 1.2142E+07  1.4754E-03  1.0453E+22  9.9731E+20
Kr-87                  1.3569E+07  4.7902E-04  3.3158E+21  1.3078E+21
Kr-88                  2.8906E+07  2.3052E-03  1.5776E+22  2.4599E+21
Rb-86                  7.5697E+02  9.3032E-06  6.5145E+19  2.6247E+17
Sr-89                  3.7215E+04  1.2810E-03  8.6676E+21  4.8167E+18
Sr-90                  4.8973E+03  3.5902E-02  2.4023E+23  6.3367E+17
Sr-91                  4.1526E+04  1.1455E-05  7.5809E+19  5.5684E+18
Sr-92                  3.2898E+04  2.6173E-06  1.7132E+19  4.8331E+18
Y-90                   5.6082E+01  1.0308E-07  6.8974E+17  6.6431E+15
Y-91                   4.7317E+02  1.9294E-05  1.2768E+20  6.1135E+16
Y-92                   1.1457E+03  1.1907E-07  7.7940E+17  7.6140E+16
Y-93                   4.8123E+02  1.4424E-07  9.3402E+17  6.4393E+16
Zr-95                  5.7671E+02  2.6845E-05  1.7017E+20  7.4638E+16
Zr-97                  5.2537E+02  2.7482E-07  1.7062E+18  6.9353E+16
Nb-95                  5.7824E+02  1.4787E-05  9.3739E+19  7.4819E+16
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Mo-99	7.2707E+03	1.5159E-05	9.2214E+19	9.4560E+17
Tc-99m	6.5143E+03	1.2389E-06	7.5360E+18	8.4069E+17
Ru-103	6.4019E+03	1.9836E-04	1.1598E+21	8.2866E+17
Ru-105	3.6156E+03	5.3788E-07	3.0849E+18	5.0522E+17
Ru-106	2.7874E+03	8.3317E-04	4.7335E+21	3.6069E+17
Rh-105	4.2762E+03	5.0662E-06	2.9057E+19	5.5362E+17
Sb-127	7.2751E+03	2.7242E-05	1.2918E+20	9.4479E+17
Sb-129	1.7871E+04	3.1779E-06	1.4835E+19	2.5025E+18
Te-127	7.2671E+03	2.7536E-06	1.3057E+19	9.3857E+17
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	1.6139E+17
Te-129	1.9481E+04	9.3022E-07	4.3426E+18	2.5719E+18
Te-129m	4.1102E+03	1.3644E-04	6.3694E+20	5.3182E+17
Te-131m	1.4935E+04	1.8730E-05	8.6102E+19	1.9544E+18
Te-132	1.0947E+05	3.6058E-04	1.6451E+21	1.4226E+19
I-131	4.0967E+05	3.3045E-03	1.5191E+22	1.1965E+20
I-132	5.8016E+05	5.6206E-05	2.5642E+20	1.7014E+20
I-133	8.1478E+05	7.1925E-04	3.2567E+21	2.4465E+20
I-134	2.9827E+05	1.1181E-05	5.0248E+19	1.8820E+20
I-135	6.9164E+05	1.9695E-04	8.7854E+20	2.2187E+20
Xe-133	9.9114E+07	5.2951E-01	2.3976E+24	7.6776E+21
Xe-135	4.1427E+07	1.6222E-02	7.2365E+22	3.2270E+21
Cs-134	8.2996E+04	6.4148E-02	2.8829E+23	2.8736E+19
Cs-136	2.4749E+04	3.3769E-04	1.4953E+21	8.5868E+18
Cs-137	6.6791E+04	7.6788E-01	3.3754E+24	2.3124E+19
Ba-139	2.7845E+04	1.7023E-06	7.3754E+18	4.6473E+18
Ba-140	5.7285E+04	7.8248E-04	3.3659E+21	7.4204E+18
La-140	7.0439E+02	1.2673E-06	5.4513E+18	7.9751E+16
La-141	4.1471E+02	7.3331E-08	3.1320E+17	5.8538E+16
La-142	2.6941E+02	1.8820E-08	7.9814E+16	4.3726E+16
Ce-141	1.3562E+03	4.7598E-05	2.0329E+20	1.7550E+17
Ce-143	1.2699E+03	1.9123E-06	8.0530E+18	1.6600E+17
Ce-144	1.0891E+03	3.4146E-04	1.4280E+21	1.4093E+17
Pr-143	5.0946E+02	7.5657E-06	3.1861E+19	6.5898E+16
Nd-147	2.1184E+02	2.6186E-06	1.0727E+19	2.7445E+16
Np-239	1.5152E+04	6.5313E-05	1.6457E+20	1.9723E+18
Pu-238	4.3973E+00	2.5686E-04	6.4992E+20	5.6897E+14
Pu-239	3.8519E-01	6.1971E-03	1.5615E+22	4.9838E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	9.3340E+13
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	2.0118E+16
Am-241	1.0417E-01	3.0352E-05	7.5843E+19	1.3478E+13
Cm-242	2.6434E+01	7.9757E-06	1.9847E+19	3.4206E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	2.2610E+14

DW Transport Group Inventory:

Time (h) = 1.5000	Atmosphere	Sump	
Noble gases (atoms)	1.9277E+25	0.0000E+00	
Elemental I (atoms)	9.0098E+20	3.4595E+22	
Organic I (atoms)	1.0836E+21	0.0000E+00	
Aerosols (kg)	8.8768E-01	3.5140E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3398E-04
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6739E-04
Total I (Ci)			2.7945E+06

DW to RB Transport Group Inventory:

Time (h) = 1.5000 Leakage Transport

Noble gases (atoms)	6.6893E+21
Elemental I (atoms)	1.2956E+18
Organic I (atoms)	4.5988E+17
Aerosols (kg)	1.3847E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5320E+21
Elemental I (atoms)	0.0000E+00	6.8409E+17
Organic I (atoms)	0.0000E+00	2.4282E+17
Aerosols (kg)	0.0000E+00	7.3110E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 1.5000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.5320E+21
Elemental I (atoms)	0.0000E+00	6.8409E+17
Organic I (atoms)	0.0000E+00	2.4282E+17
Aerosols (kg)	0.0000E+00	7.3110E-04

RB Compartment Nuclide Inventory:

Time (h) = 1.5000	Ci	kg	Atoms	Decay
Co-58	1.3266E-02	4.1721E-10	4.3319E+15	9.0521E+11
Co-60	1.5887E-02	1.4055E-08	1.4107E+17	1.0839E+12
Kr-85	3.2228E+02	8.2145E-04	5.8199E+21	1.8016E+16
Kr-85m	4.2118E+03	5.1179E-07	3.6260E+18	2.4663E+17
Kr-87	4.7066E+03	1.6616E-07	1.1502E+18	3.1183E+17
Kr-88	1.0027E+04	7.9963E-07	5.4721E+18	6.0346E+17
Rb-86	1.2259E+00	1.5067E-08	1.0550E+17	1.5859E+14
Sr-89	2.2484E+01	7.7392E-07	5.2367E+18	1.5342E+15
Sr-90	2.9588E+00	2.1691E-05	1.4514E+20	2.0186E+14
Sr-91	2.5089E+01	6.9210E-09	4.5801E+16	1.7526E+15
Sr-92	1.9876E+01	1.5813E-09	1.0351E+16	1.4750E+15
Y-90	4.7686E-02	8.7648E-11	5.8648E+14	2.7550E+12
Y-91	2.8819E-01	1.1751E-08	7.7768E+16	1.9582E+13
Y-92	2.4287E+00	2.5240E-10	1.6521E+15	1.0861E+14
Y-93	2.9075E-01	8.7146E-11	5.6430E+14	2.0282E+13
Zr-95	3.4843E-01	1.6219E-08	1.0281E+17	2.3775E+13
Zr-97	3.1741E-01	1.6604E-10	1.0308E+15	2.1944E+13
Nb-95	3.4935E-01	8.9341E-09	5.6634E+16	2.3834E+13
Mo-99	4.3927E+00	9.1589E-09	5.5713E+16	3.0071E+14
Tc-99m	3.9357E+00	7.4848E-10	4.5530E+15	2.6740E+14
Ru-103	3.8678E+00	1.1984E-07	7.0070E+17	2.6394E+14
Ru-105	2.1844E+00	3.2497E-10	1.8638E+15	1.5682E+14
Ru-106	1.6841E+00	5.0338E-07	2.8598E+18	1.1490E+14
Rh-105	2.5835E+00	3.0609E-09	1.7555E+16	1.7627E+14
Sb-127	4.3954E+00	1.6459E-08	7.8045E+16	3.0060E+14
Sb-129	1.0797E+01	1.9200E-09	8.9631E+15	7.7619E+14
Te-127	4.3905E+00	1.6636E-09	7.8887E+15	2.9871E+14
Te-127m	7.5360E-01	7.9893E-08	3.7884E+17	5.1413E+13
Te-129	1.1770E+01	5.6201E-10	2.6236E+15	8.0507E+14
Te-129m	2.4833E+00	8.2431E-08	3.8482E+17	1.6941E+14
Te-131m	9.0235E+00	1.1316E-08	5.2020E+16	6.2022E+14
Te-132	6.6139E+01	2.1785E-07	9.9390E+17	4.5252E+15
I-131	5.5750E+02	4.4969E-06	2.0672E+19	6.8728E+16
I-132	6.1814E+02	5.9884E-08	2.7321E+17	8.3616E+16
I-133	1.1093E+03	9.7926E-07	4.4340E+18	1.3905E+17
I-134	4.0609E+02	1.5223E-08	6.8413E+16	8.0672E+16
I-135	9.4167E+02	2.6814E-07	1.1961E+18	1.2288E+17
Xe-133	3.4352E+04	1.8352E-04	8.3098E+20	1.9226E+18
Xe-135	1.4083E+04	5.5146E-06	2.4600E+19	7.9601E+17
Cs-134	1.3441E+02	1.0389E-04	4.6689E+20	1.7373E+16
Cs-136	4.0082E+01	5.4689E-07	2.4216E+18	5.1871E+15
Cs-137	1.0817E+02	1.2436E-03	5.4665E+21	1.3981E+16
Ba-139	1.6823E+01	1.0285E-09	4.4560E+15	1.3586E+15
Ba-140	3.4610E+01	4.7275E-07	2.0336E+18	2.3629E+15
La-140	6.8180E-01	1.2266E-09	5.2764E+15	3.7272E+13
La-141	2.5056E-01	4.4304E-11	1.8922E+14	1.8108E+13
La-142	1.6277E-01	1.1370E-11	4.8221E+13	1.2903E+13
Ce-141	8.1924E-01	2.8752E-08	1.2280E+17	5.5899E+13
Ce-143	7.6723E-01	1.1553E-09	4.8654E+15	5.2699E+13
Ce-144	6.5798E-01	2.0630E-07	8.6274E+17	4.4892E+13
Pr-143	3.0823E-01	4.5773E-09	1.9277E+16	2.1012E+13
Nd-147	1.2799E-01	1.5820E-09	6.4812E+15	8.7391E+12
Np-239	9.1543E+00	3.9460E-08	9.9428E+16	6.2702E+14
Pu-238	2.6567E-03	1.5518E-07	3.9266E+17	1.8125E+11
Pu-239	2.3272E-04	3.7441E-06	9.4341E+18	1.5876E+10
Pu-240	4.3583E-04	1.9126E-06	4.7993E+18	2.9734E+10
Pu-241	9.3937E-02	9.1190E-07	2.2787E+18	6.4088E+12
Am-241	6.2942E-05	1.8339E-08	4.5825E+16	4.2938E+09
Cm-242	1.5970E-02	4.8186E-09	1.1991E+16	1.0896E+12
Cm-244	1.0557E-03	1.3049E-08	3.2206E+16	7.2025E+10

RB Transport Group Inventory:

```
Time (h) =   1.5000    Atmosphere     Sump
Noble gases (atoms)    6.6857E+21  0.0000E+00
Elemental I (atoms)    1.2720E+18  0.0000E+00
Organic I (atoms)      4.5559E+17  0.0000E+00
Aerosols (kg)          1.3846E-03  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.3051E-08
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.8656E-08
Total I (Ci)                                   3.6327E+03

DW to  RB Transport Group Inventory:
Time (h) =   1.5000  Leakage Transport

Noble gases (atoms)      6.6893E+21
Elemental I (atoms)      1.2956E+18
Organic I (atoms)        4.5988E+17
Aerosols (kg)            1.3847E-03

RB toEnvironment Transport Group Inventory:

                        Pathway
Time (h) =   1.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   1.5000       Ci           kg          Atoms       Decay
Co-58                  5.1100E-11  1.6070E-18  1.6686E+07  2.0669E+03
Co-60                  6.1196E-11  5.4137E-17  5.4337E+08  2.4751E+03
Kr-85                  4.1560E-03  1.0593E-08  7.5050E+16  1.6971E+11
Kr-85m                 5.4314E-02  6.5999E-12  4.6759E+13  2.2972E+12
Kr-87                  6.0695E-02  2.1427E-12  1.4832E+13  2.8167E+12
Kr-88                  1.2930E-01  1.0312E-11  7.0566E+13  5.5831E+12
Rb-86                  1.4610E-08  1.7956E-16  1.2573E+09  1.1501E+06
Sr-89                  8.6605E-08  2.9810E-15  2.0171E+10  3.5031E+06
Sr-90                  1.1397E-08  8.3549E-14  5.5905E+11  4.6094E+05
Sr-91                  9.6637E-08  2.6659E-17  1.7642E+08  3.9679E+06
Sr-92                  7.6559E-08  6.0909E-18  3.9870E+07  3.2668E+06
Y-90                   2.0922E-10  3.8456E-19  2.5732E+06  7.4164E+03
Y-91                   1.1144E-09  4.5442E-17  3.0072E+08  4.4903E+04
Y-92                   1.2597E-08  1.3092E-18  8.5695E+06  3.9215E+05
Y-93                   1.1199E-09  3.3567E-19  2.1736E+06  4.5942E+04
Zr-95                  1.3421E-09  6.2472E-17  3.9602E+08  5.4285E+04
Zr-97                  1.2226E-09  6.3955E-19  3.9706E+06  4.9869E+04
Nb-95                  1.3456E-09  3.4413E-17  2.1815E+08  5.4423E+04
Mo-99                  1.6920E-08  3.5278E-17  2.1460E+08  6.8581E+05
Tc-99m                 1.5160E-08  2.8830E-18  1.7537E+07  6.0998E+05
Ru-103                 1.4898E-08  4.6162E-16  2.6990E+09  6.0265E+05
Ru-105                 8.4141E-09  1.2517E-18  7.1791E+06  3.5154E+05
Ru-106                 6.4868E-09  1.9389E-15  1.1015E+10  2.6236E+05
Rh-105                 9.9513E-09  1.1790E-17  6.7620E+07  4.0237E+05
Sb-127                 1.6930E-08  6.3397E-17  3.0062E+08  6.8580E+05
Sb-129                 4.1587E-08  7.3954E-18  3.4524E+07  1.7391E+06
Te-127                 1.6912E-08  6.4081E-18  3.0386E+07  6.8167E+05
Te-127m                2.9027E-09  3.0774E-16  1.4592E+09  1.1740E+05
Te-129                 4.5335E-08  2.1648E-18  1.0106E+07  1.8161E+06
Te-129m                9.5651E-09  3.1751E-16  1.4822E+09  3.8685E+05
Te-131m                3.4757E-08  4.3587E-17  2.0037E+08  1.4125E+06
Te-132                 2.5476E-07  8.3913E-16  3.8283E+09  1.0322E+07
I-131                  4.0067E-04  3.2319E-12  1.4857E+13  2.9771E+10
I-132                  4.0328E-04  3.9070E-14  1.7824E+11  3.3090E+10
I-133                  7.9739E-04  7.0391E-13  3.1872E+12  5.9956E+10
I-134                  2.9191E-04  1.0942E-14  4.9176E+10  3.0527E+10
I-135                  6.7689E-04  1.9274E-13  8.5980E+11  5.2382E+10
Xe-133                 4.4264E-01  2.3648E-09  1.0708E+16  1.8093E+13
Xe-135                 1.7802E-01  6.9709E-11  3.1096E+14  7.3473E+12
Cs-134                 1.6019E-06  1.2381E-12  5.5641E+12  1.2602E+08
Cs-136                 4.7767E-07  6.5175E-15  2.8860E+10  3.7613E+07
Cs-137                 1.2891E-06  1.4820E-11  6.5146E+13  1.0142E+08
Ba-139                 6.4800E-08  3.9616E-18  1.7164E+07  2.9167E+06
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Ba-140	1.3331E-07	1.8210E-15	7.8329E+09	5.3942E+06
La-140	3.1000E-09	5.5772E-18	2.3991E+07	1.0600E+05
La-141	9.6510E-10	1.7065E-19	7.2886E+05	4.0494E+04
La-142	6.2695E-10	4.3797E-20	1.8574E+05	2.7892E+04
Ce-141	3.1553E-09	1.1074E-16	4.7296E+08	1.2763E+05
Ce-143	2.9552E-09	4.4501E-18	1.8741E+07	1.2004E+05
Ce-144	2.5344E-09	7.9462E-16	3.3231E+09	1.0251E+05
Pr-143	1.1881E-09	1.7643E-17	7.4300E+07	4.8014E+04
Nd-147	4.9298E-10	6.0938E-18	2.4964E+07	1.9949E+04
Np-239	3.5261E-08	1.5199E-16	3.8298E+08	1.4297E+06
Pu-238	1.0233E-11	5.9774E-16	1.5125E+09	4.1388E+02
Pu-239	8.9640E-13	1.4422E-14	3.6338E+10	3.6253E+01
Pu-240	1.6787E-12	7.3672E-15	1.8486E+10	6.7897E+01
Pu-241	3.6183E-10	3.5125E-15	8.7770E+09	1.4634E+04
Am-241	2.4245E-13	7.0641E-17	1.7652E+08	9.8053E+00
Cm-242	6.1515E-11	1.8561E-17	4.6188E+07	2.4881E+03
Cm-244	4.0664E-12	5.0263E-17	1.2405E+08	1.6447E+02

CR Transport Group Inventory:

Time (h) = 1.5000	Atmosphere	Sump	
Noble gases (atoms)	8.6201E+16	0.0000E+00	
Elemental I (atoms)	1.6495E+13	0.0000E+00	
Organic I (atoms)	2.3568E+12	0.0000E+00	
Aerosols (kg)	1.6246E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.9430E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.4113E-13
Total I (Ci)			2.5701E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.9052E+16
Elemental I (atoms)	0.0000E+00	2.3479E+13
Organic I (atoms)	0.0000E+00	2.8690E+12
Aerosols (kg)	0.0000E+00	2.2985E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.7262E+16
Elemental I (atoms)	5.0490E+13	1.5615E+12
Organic I (atoms)	7.1921E+12	2.2243E+11
Aerosols (kg)	4.9343E-11	1.5261E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 1.5000	Filtered	Transported
Noble gases (atoms)	2.0083E+16	0.0000E+00
Elemental I (atoms)	8.3594E+12	0.0000E+00
Organic I (atoms)	7.1787E+11	0.0000E+00
Aerosols (kg)	8.2644E-12	0.0000E+00

EAB Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3731E-02	6.1618E-02	1.5683E-02
Accumulated dose (rem)	1.9115E-02	1.1423E-01	2.2736E-02

LPZ Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5342E-03	6.8847E-03	1.7523E-03
Accumulated dose (rem)	2.1358E-03	1.2763E-02	2.5403E-03

CR Doses:

Time (h) = 2.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.7621E-03	1.8657E-01	9.6681E-03
Accumulated dose (rem)	4.8234E-03	3.2708E-01	1.5184E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.1954E+01	6.9041E-07	7.1686E+18	4.3041E+15
Co-60	2.6296E+01	2.3263E-05	2.3349E+20	5.1539E+15
Kr-85	1.3592E+06	3.4645E+00	2.4546E+25	1.5095E+20
Kr-85m	1.6441E+07	1.9978E-03	1.4154E+22	1.9894E+21
Kr-87	1.5115E+07	5.3361E-04	3.6937E+21	2.3106E+21
Kr-88	3.7430E+07	2.9850E-03	2.0428E+22	4.7675E+21
Rb-86	7.5639E+02	9.2960E-06	6.5095E+19	3.1286E+17
Sr-89	3.7204E+04	1.2806E-03	8.6651E+21	7.2949E+18
Sr-90	4.8972E+03	3.5902E-02	2.4023E+23	9.5983E+17
Sr-91	4.0038E+04	1.1045E-05	7.3093E+19	8.2842E+18
Sr-92	2.8949E+04	2.3031E-06	1.5076E+19	6.8898E+18
Y-90	5.6074E+01	1.0306E-07	6.8963E+17	1.0026E+16
Y-91	4.7306E+02	1.9290E-05	1.2766E+20	9.2588E+16
Y-92	1.0497E+03	1.0909E-07	7.1409E+17	1.0861E+17
Y-93	4.6500E+02	1.3938E-07	9.0251E+17	9.5900E+16
Zr-95	5.7658E+02	2.6839E-05	1.7013E+20	1.1304E+17
Zr-97	5.1470E+02	2.6924E-07	1.6716E+18	1.0399E+17
Nb-95	5.7823E+02	1.4787E-05	9.3739E+19	1.1333E+17
Mo-99	7.2326E+03	1.5080E-05	9.1732E+19	1.4286E+18
Tc-99m	6.5089E+03	1.2378E-06	7.5298E+18	1.2719E+18
Ru-103	6.3996E+03	1.9829E-04	1.1593E+21	1.2550E+18
Ru-105	3.3441E+03	4.9749E-07	2.8533E+18	7.3686E+17
Ru-106	2.7873E+03	8.3314E-04	4.7333E+21	5.4633E+17
Rh-105	4.2684E+03	5.0571E-06	2.9004E+19	8.3794E+17
Sb-127	7.2478E+03	2.7140E-05	1.2869E+20	1.4284E+18
Sb-129	1.6493E+04	2.9329E-06	1.3692E+19	3.6462E+18
Te-127	7.2647E+03	2.7527E-06	1.3053E+19	1.4207E+18
Te-127m	1.2473E+03	1.3224E-04	6.2705E+20	2.4447E+17
Te-129	1.8672E+04	8.9158E-07	4.1622E+18	3.8108E+18
Te-129m	4.1101E+03	1.3643E-04	6.3691E+20	8.0555E+17
Te-131m	1.4764E+04	1.8515E-05	8.5114E+19	2.9434E+18
Te-132	1.0899E+05	3.5899E-04	1.6378E+21	2.1501E+19
I-131	4.1769E+05	3.3692E-03	1.5488E+22	1.4726E+20
I-132	5.9069E+05	5.7225E-05	2.6108E+20	2.0957E+20
I-133	8.1826E+05	7.2233E-04	3.2706E+21	2.9914E+20
I-134	2.0512E+05	7.6891E-06	3.4556E+19	2.0481E+20
I-135	6.7019E+05	1.9084E-04	8.5130E+20	2.6731E+20
Xe-133	1.4478E+08	7.7348E-01	3.5023E+24	1.6107E+22
Xe-135	6.0150E+07	2.3554E-02	1.0507E+23	6.7491E+21
Cs-134	8.2994E+04	6.4146E-02	2.8828E+23	3.4263E+19
Cs-136	2.4722E+04	3.3731E-04	1.4936E+21	1.0234E+19
Cs-137	6.6791E+04	7.6787E-01	3.3754E+24	2.7573E+19
Ba-139	2.1655E+04	1.3239E-06	5.7356E+18	6.2871E+18
Ba-140	5.7220E+04	7.8160E-04	3.3621E+21	1.1233E+19
La-140	7.0403E+02	1.2666E-06	5.4485E+18	1.2012E+17
La-141	3.7971E+02	6.7141E-08	2.8676E+17	8.4975E+16
La-142	2.1517E+02	1.5031E-08	6.3745E+16	5.9795E+16
Ce-141	1.3561E+03	4.7593E-05	2.0327E+20	2.6583E+17
Ce-143	1.2566E+03	1.8923E-06	7.9689E+18	2.5014E+17
Ce-144	1.0890E+03	3.4144E-04	1.4279E+21	2.1346E+17
Pr-143	5.0946E+02	7.5656E-06	3.1861E+19	9.9814E+16
Nd-147	2.1156E+02	2.6151E-06	1.0713E+19	4.1544E+16
Np-239	1.5059E+04	6.4914E-05	1.6356E+20	2.9783E+18
Pu-238	4.3973E+00	2.5686E-04	6.4993E+20	8.6183E+14
Pu-239	3.8521E-01	6.1975E-03	1.5616E+22	7.5492E+13
Pu-240	7.2137E-01	3.1658E-03	7.9436E+21	1.4138E+14
Pu-241	1.5548E+02	1.5093E-03	3.7716E+21	3.0473E+16
Am-241	1.0418E-01	3.0353E-05	7.5847E+19	2.0416E+13
Cm-242	2.6431E+01	7.9749E-06	1.9846E+19	5.1810E+15
Cm-244	1.7474E+00	2.1598E-05	5.3307E+19	3.4247E+14

DW Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8191E+25	0.0000E+00	
Elemental I (atoms)	8.9461E+20	4.8075E+22	
Organic I (atoms)	1.4880E+21	0.0000E+00	
Aerosols (kg)	8.8765E-01	4.8455E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3585E-04

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 1.6879E-04
Total I (Ci) 2.7020E+06

DW to RB Transport Group Inventory:
Time (h) = 2.0000 Leakage Transport

Noble gases (atoms) 1.4107E+22
Elemental I (atoms) 1.5765E+18
Organic I (atoms) 8.6220E+17
Aerosols (kg) 1.6620E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3237E+17
Organic I (atoms)	0.0000E+00	4.5524E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 2.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.4485E+21
Elemental I (atoms)	0.0000E+00	8.3237E+17
Organic I (atoms)	0.0000E+00	4.5524E+17
Aerosols (kg)	0.0000E+00	8.7756E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	2.0124E-02	6.3288E-10	6.5712E+15	2.0628E+12
Co-60	2.4105E-02	2.1324E-08	2.1403E+17	2.4704E+12
Kr-85	6.7985E+02	1.7328E-03	1.2277E+22	5.3052E+16
Kr-85m	8.2233E+03	9.9924E-07	7.0795E+18	6.8532E+17
Kr-87	7.5600E+03	2.6690E-07	1.8475E+18	7.5283E+17
Kr-88	1.8721E+04	1.4930E-06	1.0217E+19	1.6225E+18
Rb-86	1.4614E+00	1.7960E-08	1.2576E+17	2.4966E+14
Sr-89	3.4104E+01	1.1739E-06	7.9430E+18	3.4961E+15
Sr-90	4.4891E+00	3.2910E-05	2.2021E+20	4.6007E+14
Sr-91	3.6702E+01	1.0125E-08	6.7002E+16	3.9001E+15
Sr-92	2.6537E+01	2.1112E-09	1.3819E+16	3.0966E+15
Y-90	8.4673E-02	1.5563E-10	1.0414E+15	7.0885E+12
Y-91	4.3910E-01	1.7905E-08	1.1849E+17	4.4756E+13
Y-92	4.6961E+00	4.8804E-10	3.1946E+15	3.2918E+14
Y-93	4.2625E-01	1.2776E-10	8.2730E+14	4.5197E+13
Zr-95	5.2853E-01	2.4602E-08	1.5596E+17	5.4178E+13
Zr-97	4.7181E-01	2.4681E-10	1.5323E+15	4.9344E+13
Nb-95	5.3005E-01	1.3555E-08	8.5927E+16	5.4320E+13
Mo-99	6.6299E+00	1.3823E-08	8.4087E+16	6.8299E+14
Tc-99m	5.9665E+00	1.1347E-09	6.9023E+15	6.0878E+14
Ru-103	5.8663E+00	1.8177E-07	1.0627E+18	6.0142E+14
Ru-105	3.0655E+00	4.5603E-10	2.6155E+15	3.3975E+14
Ru-106	2.5551E+00	7.6371E-07	4.3388E+18	2.6186E+14
Rh-105	3.9127E+00	4.6356E-09	2.6587E+16	4.0135E+14
Sb-127	6.6439E+00	2.4879E-08	1.1797E+17	6.8341E+14
Sb-129	1.5118E+01	2.6885E-09	1.2551E+16	1.6793E+15
Te-127	6.6594E+00	2.5233E-09	1.1965E+16	6.8040E+14
Te-127m	1.1434E+00	1.2122E-07	5.7480E+17	1.1718E+14
Te-129	1.7116E+01	8.1728E-10	3.8153E+15	1.7846E+15
Te-129m	3.7676E+00	1.2506E-07	5.8384E+17	3.8611E+14
Te-131m	1.3534E+01	1.6972E-08	7.8021E+16	1.4029E+15
Te-132	9.9905E+01	3.2907E-07	1.5013E+18	1.0283E+16
I-131	6.8567E+02	5.5308E-06	2.5425E+19	1.1097E+17
I-132	7.1430E+02	6.9200E-08	3.1571E+17	1.2917E+17
I-133	1.3440E+03	1.1865E-06	5.3722E+18	2.2246E+17
I-134	3.3692E+02	1.2630E-08	5.6760E+16	1.0595E+17
I-135	1.1008E+03	3.1346E-07	1.3983E+18	1.9240E+17
Xe-133	7.2325E+04	3.8639E-04	1.7495E+21	5.6534E+18
Xe-135	2.9189E+04	1.1430E-05	5.0987E+19	2.3148E+18
Cs-134	1.6035E+02	1.2393E-04	5.5697E+20	2.7362E+16

Cs-136	4.7764E+01	6.5170E-07	2.8857E+18	8.1639E+15
Cs-137	1.2904E+02	1.4836E-03	6.5213E+21	2.2019E+16
Ba-139	1.9850E+01	1.2136E-09	5.2577E+15	2.6464E+15
Ba-140	5.2451E+01	7.1646E-07	3.0819E+18	5.3814E+15
La-140	1.2619E+00	2.2703E-09	9.7658E+15	9.9928E+13
La-141	3.4806E-01	6.1546E-11	2.6286E+14	3.8979E+13
La-142	1.9724E-01	1.3778E-11	5.8433E+13	2.5534E+13
Ce-141	1.2427E+00	4.3614E-08	1.8628E+17	1.2738E+14
Ce-143	1.1519E+00	1.7346E-09	7.3048E+15	1.1928E+14
Ce-144	9.9827E-01	3.1299E-07	1.3089E+18	1.0231E+14
Pr-143	4.6804E-01	6.9505E-09	2.9271E+16	4.7913E+13
Nd-147	1.9393E-01	2.3972E-09	9.8206E+15	1.9900E+13
Np-239	1.3804E+01	5.9504E-08	1.4993E+17	1.4233E+15
Pu-238	4.0308E-03	2.3545E-07	5.9576E+17	4.1310E+11
Pu-239	3.5311E-04	5.6810E-06	1.4315E+19	3.6186E+10
Pu-240	6.6126E-04	2.9019E-06	7.2816E+18	6.7768E+10
Pu-241	1.4252E-01	1.3836E-06	3.4573E+18	1.4607E+13
Am-241	9.5507E-05	2.7827E-08	6.9535E+16	9.7869E+09
Cm-242	2.4229E-02	7.3104E-09	1.8192E+16	2.4833E+12
Cm-244	1.6018E-03	1.9799E-08	4.8865E+16	1.6415E+11

RB Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	1.4097E+22	0.0000E+00	
Elemental I (atoms)	1.5405E+18	0.0000E+00	
Organic I (atoms)	8.5205E+17	0.0000E+00	
Aerosols (kg)	1.6619E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8188E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.4808E-08
Total I (Ci)			4.1818E+03

DW to RB Transport Group Inventory:

Time (h) = 2.0000 Leakage Transport

Noble gases (atoms)	1.4107E+22
Elemental I (atoms)	1.5765E+18
Organic I (atoms)	8.6220E+17
Aerosols (kg)	1.6620E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.0000	Ci	kg	Atoms	Decay
Co-58	1.5289E-10	4.8081E-18	4.9923E+07	9.2064E+03
Co-60	1.8313E-10	1.6201E-16	1.6260E+09	1.1026E+04
Kr-85	1.5432E-02	3.9333E-08	2.7867E+17	8.4153E+11
Kr-85m	1.8666E-01	2.2682E-11	1.6070E+14	1.0683E+13
Kr-87	1.7160E-01	6.0583E-12	4.1935E+13	1.1179E+13
Kr-88	4.2495E-01	3.3890E-11	2.3192E+14	2.5027E+13
Rb-86	2.4767E-08	3.0439E-16	2.1315E+09	2.5167E+06
Sr-89	2.5910E-07	8.9183E-15	6.0345E+10	1.5603E+07
Sr-90	3.4105E-08	2.5002E-13	1.6730E+12	2.0534E+06
Sr-91	2.7883E-07	7.6919E-17	5.0903E+08	1.7189E+07
Sr-92	2.0160E-07	1.6039E-17	1.0499E+08	1.3205E+07
Y-90	7.5787E-10	1.3930E-18	9.3208E+06	3.9145E+04
Y-91	3.3552E-09	1.3681E-16	9.0539E+08	2.0100E+05
Y-92	4.8745E-08	5.0658E-18	3.3160E+07	2.3398E+06
Y-93	3.2383E-09	9.7063E-19	6.2852E+06	1.9935E+05
Zr-95	4.0154E-09	1.8691E-16	1.1848E+09	2.4179E+05
Zr-97	3.5845E-09	1.8750E-18	1.1641E+07	2.1869E+05
Nb-95	4.0269E-09	1.0298E-16	6.5281E+08	2.4244E+05
Mo-99	5.0369E-08	1.0502E-16	6.3883E+08	3.0429E+06
Tc-99m	4.5329E-08	8.6205E-18	5.2438E+07	2.7153E+06
Ru-103	4.4568E-08	1.3809E-15	8.0738E+09	2.6840E+06

Ru-105	2.3289E-08	3.4646E-18	1.9871E+07	1.4754E+06
Ru-106	1.9411E-08	5.8021E-15	3.2963E+10	1.1688E+06
Rh-105	2.9726E-08	3.5218E-17	2.0199E+08	1.7904E+06
Sb-127	5.0475E-08	1.8901E-16	8.9625E+08	3.0464E+06
Sb-129	1.1486E-07	2.0425E-17	9.5351E+07	7.2872E+06
Te-127	5.0593E-08	1.9170E-17	9.0903E+07	3.0357E+06
Te-127m	8.6867E-09	9.2092E-16	4.3669E+09	5.2300E+05
Te-129	1.3003E-07	6.2091E-18	2.8986E+07	7.8448E+06
Te-129m	2.8623E-08	9.5014E-16	4.4356E+09	1.7233E+06
Te-131m	1.0282E-07	1.2894E-16	5.9274E+08	6.2367E+06
Te-132	7.5900E-07	2.5001E-15	1.1406E+10	4.5828E+07
I-131	7.5492E-04	6.0893E-12	2.7993E+13	6.9864E+10
I-132	6.8513E-04	6.6375E-14	3.0282E+11	7.1372E+10
I-133	1.4801E-03	1.3066E-12	5.9162E+12	1.3910E+11
I-134	3.7103E-04	1.3909E-14	6.2507E+10	5.4210E+10
I-135	1.2123E-03	3.4520E-13	1.5399E+12	1.1826E+11
Xe-133	1.6401E+00	8.7618E-09	3.9673E+16	8.9559E+13
Xe-135	6.4615E-01	2.5302E-10	1.1287E+15	3.5782E+13
Cs-134	2.7176E-06	2.1004E-12	9.4395E+12	2.7592E+08
Cs-136	8.0950E-07	1.1045E-14	4.8908E+10	8.2287E+07
Cs-137	2.1870E-06	2.5143E-11	1.1052E+14	2.2205E+08
Ba-139	1.5081E-07	9.2196E-18	3.9944E+07	1.0761E+07
Ba-140	3.9849E-07	5.4431E-15	2.3414E+10	2.4010E+07
La-140	1.1708E-08	2.1064E-17	9.0606E+07	5.8508E+05
La-141	2.6443E-09	4.6758E-19	1.9970E+06	1.6866E+05
La-142	1.4985E-09	1.0468E-19	4.4393E+05	1.0493E+05
Ce-141	9.4399E-09	3.3130E-16	1.4150E+09	5.6845E+05
Ce-143	8.7513E-09	1.3178E-17	5.5496E+07	5.3048E+05
Ce-144	7.5841E-09	2.3778E-15	9.9442E+09	4.5664E+05
Pr-143	3.5594E-09	5.2858E-17	2.2260E+08	2.1408E+05
Nd-147	1.4733E-09	1.8212E-17	7.4609E+07	8.8782E+04
Np-239	1.0488E-07	4.5207E-16	1.1391E+09	6.3393E+06
Pu-238	3.0623E-11	1.7888E-15	4.5261E+09	1.8438E+03
Pu-239	2.6827E-12	4.3160E-14	1.0875E+11	1.6151E+02
Pu-240	5.0237E-12	2.2047E-14	5.5320E+10	3.0247E+02
Pu-241	1.0828E-09	1.0511E-14	2.6266E+10	6.5193E+04
Am-241	7.2563E-13	2.1142E-16	5.2830E+08	4.3685E+01
Cm-242	1.8407E-10	5.5539E-17	1.3821E+08	1.1083E+04
Cm-244	1.2169E-11	1.5041E-16	3.7124E+08	7.3267E+02

CR Transport Group Inventory:

Time (h) = 2.0000	Atmosphere	Sump	
Noble gases (atoms)	3.1991E+17	0.0000E+00	
Elemental I (atoms)	2.8379E+13	0.0000E+00	
Organic I (atoms)	6.9549E+12	0.0000E+00	
Aerosols (kg)	2.7718E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.6393E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.4840E-13
Total I (Ci)			4.5035E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1340E+17
Elemental I (atoms)	0.0000E+00	4.3785E+13
Organic I (atoms)	0.0000E+00	8.9519E+12
Aerosols (kg)	0.0000E+00	4.2538E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0921E+17
Elemental I (atoms)	1.0465E+14	3.2367E+12
Organic I (atoms)	2.3418E+13	7.2428E+11
Aerosols (kg)	1.0150E-10	3.1392E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.0000	Filtered	Transported

```
Noble gases (atoms)    1.0255E+17  0.0000E+00
Elemental I (atoms)    1.8255E+13  0.0000E+00
Organic I (atoms)      2.6630E+12  0.0000E+00
Aerosols (kg)          1.7957E-11  0.0000E+00

EAB Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.4448E-03  9.1791E-03  2.7353E-03
Accumulated dose (rem)  2.1560E-02  1.2341E-01  2.5471E-02

LPZ Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7316E-04  1.0256E-03  3.0562E-04
Accumulated dose (rem)  2.4089E-03  1.3789E-02  2.8459E-03

CR Doses:

Time (h) =   2.1000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2452E-03  4.9548E-02  2.8128E-03
Accumulated dose (rem)  6.0687E-03  3.7663E-01  1.7997E-02

DW Compartment Nuclide Inventory:

Time (h) =   2.1000       Ci           kg          Atoms       Decay
Co-58                  1.0928E+00  3.4368E-08  3.5684E+17  4.3186E+15
Co-60                  1.3091E+00  1.1581E-06  1.1623E+19  5.1714E+15
Kr-85                  1.3591E+06  3.4642E+00  2.4543E+25  1.6905E+20
Kr-85m                 1.6187E+07  1.9669E-03  1.3936E+22  2.2067E+21
Kr-87                  1.4312E+07  5.0526E-04  3.4974E+21  2.5065E+21
Kr-88                  3.6524E+07  2.9128E-03  1.9933E+22  5.2599E+21
Rb-86                  3.7648E+01  4.6269E-07  3.2400E+18  3.1336E+17
Sr-89                  1.8520E+03  6.3746E-05  4.3133E+20  7.3195E+18
Sr-90                  2.4379E+02  1.7872E-03  1.1959E+22  9.6308E+17
Sr-91                  1.9787E+03  5.4584E-07  3.6122E+18  8.3106E+18
Sr-92                  1.4047E+03  1.1176E-07  7.3154E+17  6.9087E+18
Y-90                   3.0524E+00  5.6104E-09  3.7541E+16  1.0064E+16
Y-91                   2.3590E+01  9.6191E-07  6.3656E+18  9.2902E+16
Y-92                   7.9102E+01  8.2207E-09  5.3811E+16  1.0930E+17
Y-93                   2.2990E+01  6.8908E-09  4.4621E+16  9.6207E+16
Zr-95                  2.8701E+01  1.3360E-06  8.4691E+18  1.1342E+17
Zr-97                  2.5518E+01  1.3348E-08  8.2871E+16  1.0433E+17
Nb-95                  2.8785E+01  7.3613E-07  4.6664E+18  1.1371E+17
Mo-99                  3.5967E+02  7.4991E-07  4.5617E+18  1.4334E+18
Tc-99m                 3.2396E+02  6.1609E-08  3.7477E+17  1.2762E+18
Ru-103                 3.1855E+02  9.8703E-06  5.7709E+19  1.2592E+18
Ru-105                 1.6390E+02  2.4382E-08  1.3984E+17  7.3906E+17
Ru-106                 1.3876E+02  4.1474E-05  2.3563E+20  5.4818E+17
Rh-105                 2.1239E+02  2.5164E-07  1.4432E+18  8.4077E+17
Sb-127                 3.6054E+02  1.3501E-06  6.4017E+18  1.4332E+18
Sb-129                 8.0796E+02  1.4368E-07  6.7074E+17  3.6570E+18
Te-127                 3.6162E+02  1.3702E-07  6.4974E+17  1.4255E+18
Te-127m                6.2094E+01  6.5830E-06  3.1215E+19  2.4529E+17
Te-129                 9.2100E+02  4.3978E-08  2.0530E+17  3.8228E+18
Te-129m                2.0460E+02  6.7917E-06  3.1706E+19  8.0827E+17
Te-131m                7.3326E+02  9.1956E-07  4.2273E+18  2.9532E+18
Te-132                 5.4207E+03  1.7855E-05  8.1459E+19  2.1573E+19
I-131                  5.0440E+04  4.0686E-04  1.8704E+21  1.4793E+20
I-132                  6.9402E+04  6.7236E-06  3.0674E+19  2.1050E+20
I-133                  9.8518E+04  8.6968E-05  3.9379E+20  3.0046E+20
I-134                  2.2895E+04  8.5824E-07  3.8571E+18  2.0512E+20
I-135                  8.0116E+04  2.2813E-05  1.0177E+20  2.6838E+20
Xe-133                 1.4469E+08  7.7298E-01  3.5000E+24  1.8034E+22
Xe-135                 5.9688E+07  2.3373E-02  1.0426E+23  7.5472E+21
Cs-134                 4.1315E+03  3.1933E-03  1.4351E+22  3.4318E+19
Cs-136                 1.2304E+03  1.6788E-05  7.4338E+19  1.0251E+19
Cs-137                 3.3249E+03  3.8226E-02  1.6803E+23  2.7617E+19
Ba-139                 1.0251E+03  6.2672E-08  2.7152E+17  6.3011E+18
Ba-140                 2.8478E+03  3.8900E-05  1.6733E+20  1.1271E+19
La-140                 3.9889E+01  7.1765E-08  3.0870E+17  1.2059E+17
La-141                 1.8572E+01  3.2839E-09  1.4026E+16  8.5225E+16
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La-142	1.0240E+01	7.1536E-10	3.0338E+15	5.9934E+16
Ce-141	6.7503E+01	2.3691E-06	1.0118E+19	2.6672E+17
Ce-143	6.2425E+01	9.4002E-08	3.9587E+17	2.5097E+17
Ce-144	5.4212E+01	1.6997E-05	7.1082E+19	2.1418E+17
Pr-143	2.5369E+01	3.7674E-07	1.5866E+18	1.0015E+17
Nd-147	1.0529E+01	1.3015E-07	5.3318E+17	4.1685E+16
Np-239	7.4875E+02	3.2275E-06	8.1324E+18	2.9883E+18
Pu-238	2.1890E-01	1.2787E-05	3.2354E+19	8.6475E+14
Pu-239	1.9177E-02	3.0852E-04	7.7739E+20	7.5747E+13
Pu-240	3.5911E-02	1.5759E-04	3.9544E+20	1.4186E+14
Pu-241	7.7400E+00	7.5136E-05	1.8775E+20	3.0576E+16
Am-241	5.1862E-03	1.5111E-06	3.7759E+18	2.0485E+13
Cm-242	1.3158E+00	3.9699E-07	9.8792E+17	5.1986E+15
Cm-244	8.6986E-02	1.0752E-06	2.6537E+18	3.4363E+14

DW Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	2.8185E+25	0.0000E+00	
Elemental I (atoms)	4.4456E+19	4.8566E+22	
Organic I (atoms)	1.4852E+21	0.0000E+00	
Aerosols (kg)	4.4188E-02	4.8943E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.6385E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.0325E-05
Total I (Ci)			3.2137E+05

DW to RB Transport Group Inventory:

Time (h) = 2.1000 Leakage Transport

Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5520E+17
Aerosols (kg)	1.6722E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3550E+17
Organic I (atoms)	0.0000E+00	4.8369E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.9875E+21
Elemental I (atoms)	0.0000E+00	8.3550E+17
Organic I (atoms)	0.0000E+00	4.8369E+17
Aerosols (kg)	0.0000E+00	8.8067E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	2.0558E-02	6.4652E-10	6.7128E+15	2.3367E+12
Co-60	2.4625E-02	2.1785E-08	2.1865E+17	2.7984E+12
Kr-85	7.6480E+02	1.9494E-03	1.3811E+22	6.3239E+16
Kr-85m	9.1088E+03	1.1068E-06	7.8418E+18	8.0759E+17
Kr-87	8.0535E+03	2.8432E-07	1.9680E+18	8.6308E+17
Kr-88	2.0553E+04	1.6391E-06	1.1217E+19	1.8997E+18
Rb-86	1.4761E+00	1.8141E-08	1.2703E+17	2.6932E+14
Sr-89	3.4838E+01	1.1992E-06	8.1141E+18	3.9602E+15
Sr-90	4.5861E+00	3.3621E-05	2.2496E+20	5.2115E+14
Sr-91	3.7222E+01	1.0268E-08	6.7952E+16	4.3977E+15
Sr-92	2.6425E+01	2.1023E-09	1.3761E+16	3.4531E+15
Y-90	9.0657E-02	1.6663E-10	1.1150E+15	8.2305E+12
Y-91	4.4922E-01	1.8318E-08	1.2122E+17	5.0729E+13
Y-92	5.1495E+00	5.3516E-10	3.5030E+15	3.9139E+14
Y-93	4.3248E-01	1.2963E-10	8.3939E+14	5.0978E+13
Zr-95	5.3992E-01	2.5132E-08	1.5932E+17	6.1370E+13
Zr-97	4.8003E-01	2.5110E-10	1.5589E+15	5.5751E+13
Nb-95	5.4149E-01	1.3848E-08	8.7783E+16	6.1532E+13

Mo-99	6.7660E+00	1.4107E-08	8.5813E+16	7.7316E+14
Tc-99m	6.0941E+00	1.1590E-09	7.0500E+15	6.8950E+14
Ru-103	5.9925E+00	1.8568E-07	1.0856E+18	6.8124E+14
Ru-105	3.0831E+00	4.5866E-10	2.6306E+15	3.8114E+14
Ru-106	2.6102E+00	7.8020E-07	4.4325E+18	2.9663E+14
Rh-105	3.9955E+00	4.7337E-09	2.7149E+16	4.5454E+14
Sb-127	6.7823E+00	2.5397E-08	1.2043E+17	7.7379E+14
Sb-129	1.5199E+01	2.7028E-09	1.2618E+16	1.8834E+15
Te-127	6.8026E+00	2.5776E-09	1.2223E+16	7.7068E+14
Te-127m	1.1681E+00	1.2384E-07	5.8721E+17	1.3274E+14
Te-129	1.7326E+01	8.2730E-10	3.8621E+15	2.0107E+15
Te-129m	3.8489E+00	1.2776E-07	5.9644E+17	4.3738E+14
Te-131m	1.3794E+01	1.7298E-08	7.9522E+16	1.5868E+15
Te-132	1.0197E+02	3.3588E-07	1.5324E+18	1.1642E+16
I-131	6.9503E+02	5.6062E-06	2.5772E+19	1.2023E+17
I-132	7.0934E+02	6.8720E-08	3.1352E+17	1.3872E+17
I-133	1.3583E+03	1.1991E-06	5.4293E+18	2.4059E+17
I-134	3.1567E+02	1.1833E-08	5.3179E+16	1.1032E+17
I-135	1.1046E+03	3.1453E-07	1.4031E+18	2.0719E+17
Xe-133	8.1329E+04	4.3449E-04	1.9674E+21	6.7369E+18
Xe-135	3.2705E+04	1.2807E-05	5.7129E+19	2.7520E+18
Cs-134	1.6199E+02	1.2520E-04	5.6267E+20	2.9519E+16
Cs-136	4.8242E+01	6.5823E-07	2.9147E+18	8.8066E+15
Cs-137	1.3036E+02	1.4988E-03	6.5881E+21	2.3756E+16
Ba-139	1.9284E+01	1.1790E-09	5.1078E+15	2.9098E+15
Ba-140	5.3572E+01	7.3177E-07	3.1477E+18	6.0951E+15
La-140	1.3659E+00	2.4573E-09	1.0570E+16	1.1691E+14
La-141	3.4936E-01	6.1776E-11	2.6385E+14	4.3673E+13
La-142	1.9264E-01	1.3457E-11	5.7070E+13	2.8159E+13
Ce-141	1.2695E+00	4.4553E-08	1.9029E+17	1.4429E+14
Ce-143	1.1743E+00	1.7683E-09	7.4469E+15	1.3494E+14
Ce-144	1.0198E+00	3.1974E-07	1.3372E+18	1.1590E+14
Pr-143	4.7827E-01	7.1025E-09	2.9911E+16	5.4281E+13
Nd-147	1.9807E-01	2.4483E-09	1.0030E+16	2.2539E+13
Np-239	1.4085E+01	6.0715E-08	1.5298E+17	1.6110E+15
Pu-238	4.1179E-03	2.4054E-07	6.0863E+17	4.6795E+11
Pu-239	3.6074E-04	5.8038E-06	1.4624E+19	4.0991E+10
Pu-240	6.7554E-04	2.9646E-06	7.4389E+18	7.6767E+10
Pu-241	1.4560E-01	1.4134E-06	3.5319E+18	1.6546E+13
Am-241	9.7572E-05	2.8429E-08	7.1038E+16	1.1087E+10
Cm-242	2.4752E-02	7.4681E-09	1.8584E+16	2.8130E+12
Cm-244	1.6363E-03	2.0226E-08	4.9920E+16	1.8595E+11

RB Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	1.5856E+22	0.0000E+00	
Elemental I (atoms)	1.5557E+18	0.0000E+00	
Organic I (atoms)	9.4348E+17	0.0000E+00	
Aerosols (kg)	1.6795E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8539E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5194E-08
Total I (Ci)			4.1829E+03

DW to RB Transport Group Inventory:

Time (h) = 2.1000	Leakage Transport
Noble gases (atoms)	1.5869E+22
Elemental I (atoms)	1.5867E+18
Organic I (atoms)	9.5520E+17
Aerosols (kg)	1.6722E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.1000	Ci	kg	Atoms	Decay
Co-58	1.5688E-10	4.9336E-18	5.1225E+07	1.1296E+04
Co-60	1.8791E-10	1.6624E-16	1.6685E+09	1.3529E+04
Kr-85	1.6164E-02	4.1200E-08	2.9190E+17	1.0568E+12
Kr-85m	1.9252E-01	2.3393E-11	1.6574E+14	1.3267E+13
Kr-87	1.7021E-01	6.0091E-12	4.1595E+13	1.3509E+13
Kr-88	4.3439E-01	3.4642E-11	2.3707E+14	3.0884E+13
Rb-86	2.4507E-08	3.0119E-16	2.1091E+09	2.8432E+06
Sr-89	2.6585E-07	9.1508E-15	6.1918E+10	1.9144E+07
Sr-90	3.4996E-08	2.5656E-13	1.7167E+12	2.5196E+06
Sr-91	2.8404E-07	7.8355E-17	5.1853E+08	2.0986E+07
Sr-92	2.0165E-07	1.6043E-17	1.0501E+08	1.5926E+07
Y-90	8.1000E-10	1.4888E-18	9.9619E+06	4.9435E+04
Y-91	3.4478E-09	1.4059E-16	9.3038E+08	2.4685E+05
Y-92	5.2515E-08	5.4576E-18	3.5725E+07	2.9924E+06
Y-93	3.3002E-09	9.8918E-19	6.4053E+06	2.4346E+05
Zr-95	4.1201E-09	1.9178E-16	1.2157E+09	2.9667E+05
Zr-97	3.6631E-09	1.9162E-18	1.1896E+07	2.6758E+05
Nb-95	4.1321E-09	1.0567E-16	6.6987E+08	2.9748E+05
Mo-99	5.1631E-08	1.0765E-16	6.5483E+08	3.7310E+06
Tc-99m	4.6504E-08	8.8440E-18	5.3798E+07	3.3313E+06
Ru-103	4.5729E-08	1.4169E-15	8.2842E+09	3.2931E+06
Ru-105	2.3527E-08	3.5000E-18	2.0074E+07	1.7913E+06
Ru-106	1.9918E-08	5.9536E-15	3.3824E+10	1.4341E+06
Rh-105	3.0489E-08	3.6123E-17	2.0718E+08	2.1963E+06
Sb-127	5.1755E-08	1.9380E-16	9.1897E+08	3.7360E+06
Sb-129	1.1598E-07	2.0625E-17	9.6285E+07	8.8445E+06
Te-127	5.1911E-08	1.9670E-17	9.3271E+07	3.7246E+06
Te-127m	8.9137E-09	9.4499E-16	4.4810E+09	6.4173E+05
Te-129	1.3221E-07	6.3131E-18	2.9472E+07	9.5700E+06
Te-129m	2.9371E-08	9.7495E-16	4.5514E+09	2.1145E+06
Te-131m	1.0526E-07	1.3200E-16	6.0683E+08	7.6404E+06
Te-132	7.7814E-07	2.5631E-15	1.1693E+10	5.6198E+07
I-131	7.5432E-04	6.0844E-12	2.7971E+13	7.9913E+10
I-132	6.6759E-04	6.4676E-14	2.9507E+11	8.0399E+10
I-133	1.4745E-03	1.3017E-12	5.8938E+12	1.5877E+11
I-134	3.4267E-04	1.2845E-14	5.7729E+10	5.8960E+10
I-135	1.1991E-03	3.4145E-13	1.5231E+12	1.3432E+11
Xe-133	1.7170E+00	9.1731E-09	4.1535E+16	1.1244E+14
Xe-135	6.7259E-01	2.6338E-10	1.1749E+15	4.4775E+13
Cs-134	2.6894E-06	2.0786E-12	9.3417E+12	3.1175E+08
Cs-136	8.0093E-07	1.0928E-14	4.8390E+10	9.2957E+07
Cs-137	2.1643E-06	2.4883E-11	1.0938E+14	2.5088E+08
Ba-139	1.4716E-07	8.9965E-18	3.8977E+07	1.2771E+07
Ba-140	4.0881E-07	5.5841E-15	2.4020E+10	2.9456E+07
La-140	1.2609E-08	2.2686E-17	9.7582E+07	7.4380E+05
La-141	2.6660E-09	4.7141E-19	2.0134E+06	2.0448E+05
La-142	1.4700E-09	1.0269E-19	4.3550E+05	1.2496E+05
Ce-141	9.6860E-09	3.3994E-16	1.4519E+09	6.9747E+05
Ce-143	8.9611E-09	1.3494E-17	5.6827E+07	6.4996E+05
Ce-144	7.7822E-09	2.4399E-15	1.0204E+10	5.6030E+05
Pr-143	3.6534E-09	5.4254E-17	2.2848E+08	2.6273E+05
Nd-147	1.5114E-09	1.8683E-17	7.6538E+07	1.0892E+05
Np-239	1.0748E-07	4.6331E-16	1.1674E+09	7.7719E+06
Pu-238	3.1423E-11	1.8355E-15	4.6444E+09	2.2623E+03
Pu-239	2.7528E-12	4.4288E-14	1.1159E+11	1.9818E+02
Pu-240	5.1550E-12	2.2623E-14	5.6766E+10	3.7113E+02
Pu-241	1.1111E-09	1.0786E-14	2.6952E+10	7.9993E+04
Am-241	7.4461E-13	2.1695E-16	5.4212E+08	5.3603E+01
Cm-242	1.8888E-10	5.6989E-17	1.4182E+08	1.3599E+04
Cm-244	1.2487E-11	1.5434E-16	3.8094E+08	8.9900E+02

CR Transport Group Inventory:

Time (h) = 2.1000	Atmosphere	Sump	
Noble gases (atoms)	3.3505E+17	0.0000E+00	
Elemental I (atoms)	2.8091E+13	0.0000E+00	
Organic I (atoms)	7.1729E+12	0.0000E+00	
Aerosols (kg)	2.7444E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.6321E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.4689E-13
Total I (Ci)			4.4382E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2522E+17
Elemental I (atoms)	0.0000E+00	4.5888E+13
Organic I (atoms)	0.0000E+00	9.7459E+12
Aerosols (kg)	0.0000E+00	4.4555E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.4174E+17
Elemental I (atoms)	1.1027E+14	3.4103E+12
Organic I (atoms)	2.5536E+13	7.8978E+11
Aerosols (kg)	1.0688E-10	3.3056E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.1000	Filtered	Transported
Noble gases (atoms)	1.3171E+17	0.0000E+00
Elemental I (atoms)	2.0772E+13	0.0000E+00
Organic I (atoms)	3.2926E+12	0.0000E+00
Aerosols (kg)	2.0414E-11	0.0000E+00

EAB Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	5.4472E-03	1.9727E-02	6.0713E-03
Accumulated dose (rem)	2.7007E-02	1.4314E-01	3.1542E-02

LPZ Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	6.0862E-04	2.2042E-03	6.7835E-04
Accumulated dose (rem)	3.0176E-03	1.5993E-02	3.5243E-03

CR Doses:

Time (h) = 2.3000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.5950E-03	9.9337E-02	5.7366E-03
Accumulated dose (rem)	8.6637E-03	4.7596E-01	2.3733E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	5.9959E-01	1.8856E-08	1.9578E+17	4.3374E+15
Co-60	7.1828E-01	6.3543E-07	6.3777E+18	5.1938E+15
Kr-85	1.3588E+06	3.4635E+00	2.4538E+25	2.0526E+20
Kr-85m	1.5691E+07	1.9066E-03	1.3508E+22	2.6313E+21
Kr-87	1.2831E+07	4.5298E-04	3.1355E+21	2.8677E+21
Kr-88	3.4777E+07	2.7734E-03	1.8980E+22	6.2094E+21
Rb-86	2.0651E+01	2.5380E-07	1.7772E+18	3.1401E+17
Sr-89	1.0161E+03	3.4974E-05	2.3665E+20	7.3513E+18
Sr-90	1.3377E+02	9.8065E-04	6.5618E+21	9.6726E+17
Sr-91	1.0700E+03	2.9516E-07	1.9533E+18	8.3444E+18
Sr-92	7.3233E+02	5.8263E-08	3.8138E+17	6.9323E+18
Y-90	1.9608E+00	3.6041E-09	2.4116E+16	1.0118E+16
Y-91	1.2987E+01	5.2957E-07	3.5045E+18	9.3307E+16
Y-92	7.0873E+01	7.3654E-09	4.8213E+16	1.1083E+17
Y-93	1.2443E+01	3.7294E-09	2.4150E+16	9.6599E+16
Zr-95	1.5747E+01	7.3300E-07	4.6466E+18	1.1392E+17
Zr-97	1.3887E+01	7.2644E-09	4.5100E+16	1.0476E+17
Nb-95	1.5794E+01	4.0392E-07	2.5605E+18	1.1421E+17
Mo-99	1.9694E+02	4.1062E-07	2.4978E+18	1.4395E+18
Tc-99m	1.7768E+02	3.3791E-08	2.0555E+17	1.2817E+18
Ru-103	1.7477E+02	5.4151E-06	3.1660E+19	1.2647E+18
Ru-105	8.7165E+01	1.2967E-08	7.4371E+16	7.4184E+17
Ru-106	7.6134E+01	2.2757E-05	1.2929E+20	5.5056E+17
Rh-105	1.1643E+02	1.3794E-07	7.9116E+17	8.4441E+17

Sb-127	1.9753E+02	7.3967E-07	3.5074E+18	1.4394E+18
Sb-129	4.2933E+02	7.6347E-08	3.5641E+17	3.6707E+18
Te-127	1.9839E+02	7.5173E-08	3.5646E+17	1.4317E+18
Te-127m	3.4071E+01	3.6121E-06	1.7128E+19	2.4636E+17
Te-129	4.9587E+02	2.3678E-08	1.1054E+17	3.8381E+18
Te-129m	1.1226E+02	3.7265E-06	1.7397E+19	8.1179E+17
Te-131m	4.0049E+02	5.0224E-07	2.3088E+18	2.9657E+18
Te-132	2.9691E+03	9.7797E-06	4.4617E+19	2.1666E+19
I-131	4.2146E+04	3.3996E-04	1.5628E+21	1.4910E+20
I-132	5.4834E+04	5.3123E-06	2.4236E+19	2.1207E+20
I-133	8.1830E+04	7.2236E-05	3.2708E+20	3.0274E+20
I-134	1.6344E+04	6.1266E-07	2.7534E+18	2.0562E+20
I-135	6.5599E+04	1.8679E-05	8.3326E+19	2.7022E+20
Xe-133	1.4450E+08	7.7197E-01	3.4954E+24	2.1886E+22
Xe-135	5.8773E+07	2.3015E-02	1.0267E+23	9.1250E+21
Cs-134	2.2670E+03	1.7521E-03	7.8743E+21	3.4389E+19
Cs-136	6.7483E+02	9.2076E-06	4.0772E+19	1.0272E+19
Cs-137	1.8244E+03	2.0974E-02	9.2198E+22	2.7674E+19
Ba-139	5.0866E+02	3.1098E-08	1.3473E+17	6.3179E+18
Ba-140	1.5619E+03	2.1335E-05	9.1772E+19	1.1320E+19
La-140	2.7185E+01	4.8909E-08	2.1038E+17	1.2131E+17
La-141	9.8371E+00	1.7394E-09	7.4291E+15	8.5538E+16
La-142	5.1357E+00	3.5876E-10	1.5215E+15	6.0103E+16
Ce-141	3.7034E+01	1.2997E-06	5.5512E+18	2.6788E+17
Ce-143	3.4109E+01	5.1363E-08	2.1630E+17	2.5204E+17
Ce-144	2.9746E+01	9.3261E-06	3.9002E+19	2.1511E+17
Pr-143	1.3929E+01	2.0685E-07	8.7109E+17	1.0059E+17
Nd-147	5.7742E+00	7.1375E-08	2.9240E+17	4.1866E+16
Np-239	4.0984E+02	1.7666E-06	4.4513E+18	3.0012E+18
Pu-238	1.2011E-01	7.0160E-06	1.7753E+19	8.6851E+14
Pu-239	1.0523E-02	1.6929E-04	4.2657E+20	7.6077E+13
Pu-240	1.9704E-02	8.6473E-05	2.1698E+20	1.4248E+14
Pu-241	4.2469E+00	4.1227E-05	1.0302E+20	3.0709E+16
Am-241	2.8458E-03	8.2917E-07	2.0719E+18	2.0574E+13
Cm-242	7.2193E-01	2.1782E-07	5.4205E+17	5.2212E+15
Cm-244	4.7729E-02	5.8996E-07	1.4561E+18	3.4513E+14

DW Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	2.8172E+25	0.0000E+00	
Elemental I (atoms)	4.4293E+19	4.8566E+22	
Organic I (atoms)	1.4797E+21	0.0000E+00	
Aerosols (kg)	2.4245E-02	4.8963E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.3657E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.6888E-05
Total I (Ci)			2.6075E+05

DW to RB Transport Group Inventory:

Time (h) = 2.3000	Leakage Transport
Noble gases (atoms)	1.9391E+22
Elemental I (atoms)	1.5922E+18
Organic I (atoms)	1.1407E+18
Aerosols (kg)	1.6764E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3720E+17
Organic I (atoms)	0.0000E+00	5.4043E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	9.0651E+21
Elemental I (atoms)	0.0000E+00	8.3720E+17
Organic I (atoms)	0.0000E+00	5.4043E+17
Aerosols (kg)	0.0000E+00	8.8194E-04

RB Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	2.0659E-02	6.4970E-10	6.7458E+15	2.8865E+12
Co-60	2.4748E-02	2.1894E-08	2.1975E+17	3.4570E+12
Kr-85	9.3467E+02	2.3823E-03	1.6879E+22	8.7008E+16
Kr-85m	1.0793E+04	1.3115E-06	9.2916E+18	1.0862E+18
Kr-87	8.8257E+03	3.1158E-07	2.1568E+18	1.0999E+18
Kr-88	2.3921E+04	1.9077E-06	1.3055E+19	2.5227E+18
Rb-86	1.4792E+00	1.8179E-08	1.2730E+17	3.0871E+14
Sr-89	3.5009E+01	1.2050E-06	8.1537E+18	4.8919E+15
Sr-90	4.6090E+00	3.3789E-05	2.2609E+20	6.4381E+14
Sr-91	3.6866E+01	1.0170E-08	6.7302E+16	5.3860E+15
Sr-92	2.5233E+01	2.0075E-09	1.3140E+16	4.1421E+15
Y-90	1.0073E-01	1.8514E-10	1.2388E+15	1.0715E+13
Y-91	4.5293E-01	1.8469E-08	1.2222E+17	6.2753E+13
Y-92	5.9627E+00	6.1968E-10	4.0563E+15	5.3285E+14
Y-93	4.2871E-01	1.2850E-10	8.3208E+14	6.2465E+13
Zr-95	5.4257E-01	2.5256E-08	1.6010E+17	7.5809E+13
Zr-97	4.7848E-01	2.5030E-10	1.5539E+15	6.8537E+13
Nb-95	5.4420E-01	1.3917E-08	8.8221E+16	7.6014E+13
Mo-99	6.7855E+00	1.4148E-08	8.6061E+16	9.5392E+14
Tc-99m	6.1220E+00	1.1643E-09	7.0822E+15	8.5154E+14
Ru-103	6.0216E+00	1.8658E-07	1.0909E+18	8.4150E+14
Ru-105	3.0033E+00	4.4679E-10	2.5625E+15	4.6232E+14
Ru-106	2.6232E+00	7.8408E-07	4.4546E+18	3.6644E+14
Rh-105	4.0117E+00	4.7529E-09	2.7260E+16	5.6127E+14
Sb-127	6.8059E+00	2.5485E-08	1.2085E+17	9.5504E+14
Sb-129	1.4793E+01	2.6306E-09	1.2280E+16	2.2834E+15
Te-127	6.8355E+00	2.5901E-09	1.2282E+16	9.5194E+14
Te-127m	1.1739E+00	1.2446E-07	5.9015E+17	1.6398E+14
Te-129	1.7085E+01	8.1583E-10	3.8086E+15	2.4584E+15
Te-129m	3.8680E+00	1.2840E-07	5.9941E+17	5.4031E+14
Te-131m	1.3799E+01	1.7305E-08	7.9551E+16	1.9549E+15
Te-132	1.0230E+02	3.3696E-07	1.5373E+18	1.4367E+16
I-131	7.0027E+02	5.6485E-06	2.5966E+19	1.3886E+17
I-132	6.8136E+02	6.6010E-08	3.0115E+17	1.5725E+17
I-133	1.3604E+03	1.2009E-06	5.4377E+18	2.7688E+17
I-134	2.7172E+02	1.0186E-08	4.5775E+16	1.1815E+17
I-135	1.0906E+03	3.1055E-07	1.3853E+18	2.3649E+17
Xe-133	9.9306E+04	5.3053E-04	2.4022E+21	9.2635E+18
Xe-135	3.9572E+04	1.5496E-05	6.9124E+19	3.7645E+18
Cs-134	1.6238E+02	1.2550E-04	5.6402E+20	3.3843E+16
Cs-136	4.8337E+01	6.5952E-07	2.9204E+18	1.0094E+16
Cs-137	1.3068E+02	1.5023E-03	6.6039E+21	2.7235E+16
Ba-139	1.7526E+01	1.0715E-09	4.6421E+15	3.4004E+15
Ba-140	5.3815E+01	7.3509E-07	3.1620E+18	7.5276E+15
La-140	1.5500E+00	2.7887E-09	1.1996E+16	1.5454E+14
La-141	3.3894E-01	5.9933E-11	2.5597E+14	5.2854E+13
La-142	1.7695E-01	1.2361E-11	5.2423E+13	3.3086E+13
Ce-141	1.2757E+00	4.4770E-08	1.9121E+17	1.7824E+14
Ce-143	1.1752E+00	1.7697E-09	7.4528E+15	1.6628E+14
Ce-144	1.0249E+00	3.2133E-07	1.3438E+18	1.4317E+14
Pr-143	4.8095E-01	7.1423E-09	3.0078E+16	6.7073E+13
Nd-147	1.9895E-01	2.4593E-09	1.0075E+16	2.7835E+13
Np-239	1.4121E+01	6.0868E-08	1.5337E+17	1.9873E+15
Pu-238	4.1385E-03	2.4174E-07	6.1167E+17	5.7808E+11
Pu-239	3.6256E-04	5.8329E-06	1.4697E+19	5.0639E+10
Pu-240	6.7891E-04	2.9794E-06	7.4761E+18	9.4834E+10
Pu-241	1.4633E-01	1.4205E-06	3.5496E+18	2.0440E+13
Am-241	9.8065E-05	2.8572E-08	7.1397E+16	1.3696E+10
Cm-242	2.4874E-02	7.5052E-09	1.8676E+16	3.4749E+12
Cm-244	1.6445E-03	2.0327E-08	5.0169E+16	2.2971E+11

RB Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	1.9374E+22	0.0000E+00	
Elemental I (atoms)	1.5562E+18	0.0000E+00	
Organic I (atoms)	1.1254E+18	0.0000E+00	
Aerosols (kg)	1.6836E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8688E-08

Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 3.5280E-08
Total I (Ci) 4.1044E+03

DW to RB Transport Group Inventory:
Time (h) = 2.3000 Leakage Transport

Noble gases (atoms) 1.9391E+22
Elemental I (atoms) 1.5922E+18
Organic I (atoms) 1.1407E+18
Aerosols (kg) 1.6764E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 2.3000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.3000	Ci	kg	Atoms	Decay
Co-58	1.6719E-10	5.2578E-18	5.4592E+07	1.5677E+04
Co-60	2.0028E-10	1.7718E-16	1.7783E+09	1.8776E+04
Kr-85	1.8070E-02	4.6058E-08	3.2631E+17	1.5246E+12
Kr-85m	2.0866E-01	2.5355E-11	1.7963E+14	1.8751E+13
Kr-87	1.7063E-01	6.0238E-12	4.1697E+13	1.8171E+13
Kr-88	4.6246E-01	3.6881E-11	2.5239E+14	4.3147E+13
Rb-86	2.4237E-08	2.9788E-16	2.0859E+09	3.4902E+06
Sr-89	2.8331E-07	9.7519E-15	6.5985E+10	2.6567E+07
Sr-90	3.7299E-08	2.7344E-13	1.8297E+12	3.4968E+06
Sr-91	2.9834E-07	8.2302E-17	5.4465E+08	2.8860E+07
Sr-92	2.0420E-07	1.6246E-17	1.0634E+08	2.1414E+07
Y-90	9.3101E-10	1.7112E-18	1.1450E+07	7.2347E+04
Y-91	3.6849E-09	1.5026E-16	9.9436E+08	3.4317E+05
Y-92	6.0736E-08	6.3120E-18	4.1317E+07	4.4610E+06
Y-93	3.4694E-09	1.0399E-18	6.7338E+06	3.3498E+05
Zr-95	4.3908E-09	2.0439E-16	1.2956E+09	4.1172E+05
Zr-97	3.8722E-09	2.0256E-18	1.2576E+07	3.6945E+05
Nb-95	4.4040E-09	1.1263E-16	7.1395E+08	4.1286E+05
Mo-99	5.4913E-08	1.1449E-16	6.9646E+08	5.1712E+06
Tc-99m	4.9544E-08	9.4221E-18	5.7314E+07	4.6224E+06
Ru-103	4.8731E-08	1.5099E-15	8.8280E+09	4.5700E+06
Ru-105	2.4305E-08	3.6157E-18	2.0737E+07	2.4380E+06
Ru-106	2.1229E-08	6.3453E-15	3.6050E+10	1.9903E+06
Rh-105	3.2465E-08	3.8464E-17	2.2060E+08	3.0467E+06
Sb-127	5.5078E-08	2.0624E-16	9.7798E+08	5.1801E+06
Sb-129	1.1971E-07	2.1288E-17	9.9380E+07	1.2031E+07
Te-127	5.5318E-08	2.0961E-17	9.9393E+07	5.1688E+06
Te-127m	9.5003E-09	1.0072E-15	4.7759E+09	8.9064E+05
Te-129	1.3827E-07	6.6023E-18	3.0822E+07	1.3137E+07
Te-129m	3.1303E-08	1.0391E-15	4.8508E+09	2.9347E+06
Te-131m	1.1167E-07	1.4004E-16	6.4378E+08	1.0573E+07
Te-132	8.2788E-07	2.7269E-15	1.2441E+10	7.7908E+07
I-131	7.6276E-04	6.1526E-12	2.8284E+13	1.0016E+11
I-132	6.4287E-04	6.2280E-14	2.8414E+11	9.7931E+10
I-133	1.4822E-03	1.3084E-12	5.9244E+12	1.9823E+11
I-134	2.9604E-04	1.1097E-14	4.9872E+10	6.7469E+10
I-135	1.1882E-03	3.3834E-13	1.5093E+12	1.6618E+11
Xe-133	1.9176E+00	1.0245E-08	4.6387E+16	1.6210E+14
Xe-135	7.4281E-01	2.9087E-10	1.2975E+15	6.4132E+13
Cs-134	2.6606E-06	2.0564E-12	9.2418E+12	3.8276E+08
Cs-136	7.9202E-07	1.0807E-14	4.7852E+10	1.1410E+08
Cs-137	2.1412E-06	2.4617E-11	1.0821E+14	3.0803E+08
Ba-139	1.4183E-07	8.6711E-18	3.7567E+07	1.6679E+07
Ba-140	4.3551E-07	5.9489E-15	2.5589E+10	4.0869E+07
La-140	1.4685E-08	2.6419E-17	1.1364E+08	1.1012E+06
La-141	2.7429E-09	4.8501E-19	2.0715E+06	2.7762E+05
La-142	1.4320E-09	1.0004E-19	4.2424E+05	1.6420E+05
Ce-141	1.0322E-08	3.6227E-16	1.5472E+09	9.6793E+05
Ce-143	9.5108E-09	1.4322E-17	6.0313E+07	8.9967E+05

Ce-144	8.2941E-09	2.6005E-15	1.0875E+10	7.7761E+05
Pr-143	3.8958E-09	5.7854E-17	2.4364E+08	3.6474E+05
Nd-147	1.6100E-09	1.9902E-17	8.1532E+07	1.5111E+05
Np-239	1.1428E-07	4.9259E-16	1.2412E+09	1.0770E+07
Pu-238	3.3491E-11	1.9563E-15	4.9501E+09	3.1398E+03
Pu-239	2.9340E-12	4.7204E-14	1.1894E+11	2.7505E+02
Pu-240	5.4942E-12	2.4112E-14	6.0501E+10	5.1509E+02
Pu-241	1.1842E-09	1.1496E-14	2.8725E+10	1.1102E+05
Am-241	7.9365E-13	2.3124E-16	5.7782E+08	7.4396E+01
Cm-242	2.0130E-10	6.0737E-17	1.5114E+08	1.8873E+04
Cm-244	1.3309E-11	1.6450E-16	4.0600E+08	1.2477E+03

CR Transport Group Inventory:

Time (h) = 2.3000	Atmosphere	Sump	
Noble gases (atoms)	3.7447E+17	0.0000E+00	
Elemental I (atoms)	2.7815E+13	0.0000E+00	
Organic I (atoms)	7.7647E+12	0.0000E+00	
Aerosols (kg)	2.7179E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.6643E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.4965E-13
Total I (Ci)			4.3720E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5257E+17
Elemental I (atoms)	0.0000E+00	5.0318E+13
Organic I (atoms)	0.0000E+00	1.1543E+13
Aerosols (kg)	0.0000E+00	4.8802E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.1694E+17
Elemental I (atoms)	1.2208E+14	3.7758E+12
Organic I (atoms)	3.0331E+13	9.3808E+11
Aerosols (kg)	1.1821E-10	3.6560E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.3000	Filtered	Transported
Noble gases (atoms)	1.9475E+17	0.0000E+00
Elemental I (atoms)	2.5753E+13	0.0000E+00
Organic I (atoms)	4.6217E+12	0.0000E+00
Aerosols (kg)	2.5276E-11	0.0000E+00

EAB Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.0094E-03	1.0554E-02	3.3432E-03
Accumulated dose (rem)	3.0017E-02	1.5369E-01	3.4885E-02

LPZ Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.3625E-04	1.1792E-03	3.7354E-04
Accumulated dose (rem)	3.3538E-03	1.7172E-02	3.8978E-03

CR Doses:

Time (h) = 2.4000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3670E-03	5.0190E-02	2.9538E-03
Accumulated dose (rem)	1.0031E-02	5.2615E-01	2.6687E-02

DW Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	4.4412E-01	1.3967E-08	1.4502E+17	4.3433E+15
Co-60	5.3206E-01	4.7069E-07	4.7242E+18	5.2009E+15

Kr-85	1.3587E+06	3.4631E+00	2.4536E+25	2.2335E+20
Kr-85m	1.5448E+07	1.8772E-03	1.3299E+22	2.8387E+21
Kr-87	1.2149E+07	4.2891E-04	2.9689E+21	3.0340E+21
Kr-88	3.3935E+07	2.7063E-03	1.8520E+22	6.6670E+21
Rb-86	1.5295E+01	1.8797E-07	1.3163E+18	3.1422E+17
Sr-89	7.5260E+02	2.5905E-05	1.7528E+20	7.3614E+18
Sr-90	9.9088E+01	7.2641E-04	4.8606E+21	9.6858E+17
Sr-91	7.8681E+02	2.1705E-07	1.4364E+18	8.3549E+18
Sr-92	5.2877E+02	4.2068E-08	2.7537E+17	6.9394E+18
Y-90	1.5582E+00	2.8640E-09	1.9164E+16	1.0137E+16
Y-91	9.6360E+00	3.9292E-07	2.6003E+18	9.3435E+16
Y-92	6.1968E+01	6.4400E-09	4.2155E+16	1.1153E+17
Y-93	9.1537E+00	2.7437E-09	1.7766E+16	9.6722E+16
Zr-95	1.1664E+01	5.4294E-07	3.4418E+18	1.1407E+17
Zr-97	1.0245E+01	5.3590E-09	3.3271E+16	1.0490E+17
Nb-95	1.1700E+01	2.9920E-07	1.8966E+18	1.1436E+17
Mo-99	1.4573E+02	3.0384E-07	1.8483E+18	1.4415E+18
Tc-99m	1.3159E+02	2.5025E-08	1.5223E+17	1.2835E+18
Ru-103	1.2945E+02	4.0109E-06	2.3451E+19	1.2664E+18
Ru-105	6.3567E+01	9.4565E-09	5.4237E+16	7.4269E+17
Ru-106	5.6395E+01	1.6857E-05	9.5767E+19	5.5131E+17
Rh-105	8.6203E+01	1.0213E-07	5.8575E+17	8.4556E+17
Sb-127	1.4621E+02	5.4749E-07	2.5961E+18	1.4413E+18
Sb-129	3.1296E+02	5.5653E-08	2.5981E+17	3.6749E+18
Te-127	1.4694E+02	5.5679E-08	2.6402E+17	1.4336E+18
Te-127m	2.5238E+01	2.6756E-06	1.2687E+19	2.4670E+17
Te-129	3.6375E+02	1.7369E-08	8.1086E+16	3.8429E+18
Te-129m	8.3157E+01	2.7604E-06	1.2886E+19	8.1289E+17
Te-131m	2.9597E+02	3.7117E-07	1.7063E+18	2.9697E+18
Te-132	2.1974E+03	7.2379E-06	3.3021E+19	2.1695E+19
I-131	3.9528E+04	3.1884E-04	1.4657E+21	1.4963E+20
I-132	4.9985E+04	4.8425E-06	2.2092E+19	2.1275E+20
I-133	7.6518E+04	6.7547E-05	3.0585E+20	3.0376E+20
I-134	1.4168E+04	5.3111E-07	2.3869E+18	2.0581E+20
I-135	6.0904E+04	1.7342E-05	7.7361E+19	2.7104E+20
Xe-133	1.4441E+08	7.7147E-01	3.4932E+24	2.3810E+22
Xe-135	5.8321E+07	2.2838E-02	1.0188E+23	9.9048E+21
Cs-134	1.6792E+03	1.2979E-03	5.8328E+21	3.4412E+19
Cs-136	4.9977E+02	6.8190E-06	3.0195E+19	1.0278E+19
Cs-137	1.3514E+03	1.5537E-02	6.8295E+22	2.7692E+19
Ba-139	3.5831E+02	2.1906E-08	9.4905E+16	6.3228E+18
Ba-140	1.1567E+03	1.5800E-05	6.7964E+19	1.1336E+19
La-140	2.2094E+01	3.9749E-08	1.7098E+17	1.2158E+17
La-141	7.1594E+00	1.2659E-09	5.4069E+15	8.5635E+16
La-142	3.6370E+00	2.5407E-10	1.0775E+15	6.0153E+16
Ce-141	2.7431E+01	9.6271E-07	4.1118E+18	2.6825E+17
Ce-143	2.5213E+01	3.7967E-08	1.5989E+17	2.5238E+17
Ce-144	2.2034E+01	6.9082E-06	2.8890E+19	2.1540E+17
Pr-143	1.0321E+01	1.5327E-07	6.4545E+17	1.0072E+17
Nd-147	4.2761E+00	5.2857E-08	2.1654E+17	4.1923E+16
Np-239	3.0321E+02	1.3070E-06	3.2933E+18	3.0052E+18
Pu-238	8.8972E-02	5.1971E-06	1.3150E+19	8.6969E+14
Pu-239	7.7946E-03	1.2540E-04	3.1598E+20	7.6180E+13
Pu-240	1.4596E-02	6.4054E-05	1.6073E+20	1.4267E+14
Pu-241	3.1459E+00	3.0539E-05	7.6311E+19	3.0751E+16
Am-241	2.1081E-03	6.1422E-07	1.5348E+18	2.0602E+13
Cm-242	5.3476E-01	1.6135E-07	4.0151E+17	5.2283E+15
Cm-244	3.5355E-02	4.3701E-07	1.0786E+18	3.4560E+14

DW Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.8166E+25	0.0000E+00	
Elemental I (atoms)	4.4213E+19	4.8566E+22	
Organic I (atoms)	1.4771E+21	0.0000E+00	
Aerosols (kg)	1.7959E-02	4.8970E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.2793E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5795E-05
Total I (Ci)			2.4110E+05

DW to RB Transport Group Inventory:

Time (h) = 2.4000	Leakage Transport

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Noble gases (atoms)      2.1152E+22
Elemental I (atoms)      1.5950E+18
Organic I (atoms)        1.2331E+18
Aerosols (kg)            1.6777E-03

DW to  MSL "B" Volume 1 Transport Group Inventory:

                          Pathway
Time (h) =   2.4000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.6038E+21
Elemental I (atoms)    0.0000E+00  8.3805E+17
Organic I (atoms)      0.0000E+00  5.6872E+17
Aerosols (kg)          0.0000E+00  8.8234E-04

DW to  MSL "C" Volume 3 Transport Group Inventory:

                          Pathway
Time (h) =   2.4000      Filtered   Transported
Noble gases (atoms)    0.0000E+00  9.6038E+21
Elemental I (atoms)    0.0000E+00  8.3805E+17
Organic I (atoms)      0.0000E+00  5.6872E+17
Aerosols (kg)          0.0000E+00  8.8234E-04

RB Compartment Nuclide Inventory:

Time (h) =   2.4000       Ci           kg          Atoms       Decay
Co-58                  2.0691E-02  6.5069E-10  6.7561E+15  3.1621E+12
Co-60                  2.4787E-02  2.1928E-08  2.2009E+17  3.7872E+12
Kr-85                  1.0196E+03  2.5988E-03  1.8412E+22  1.0059E+17
Kr-85m                 1.1593E+04  1.4087E-06  9.9802E+18  1.2418E+18
Kr-87                  9.1169E+03  3.2186E-07  2.2279E+18  1.2247E+18
Kr-88                  2.5465E+04  2.0308E-06  1.3898E+19  2.8661E+18
Rb-86                  1.4801E+00  1.8190E-08  1.2738E+17  3.2843E+14
Sr-89                  3.5061E+01  1.2068E-06  8.1660E+18  5.3589E+15
Sr-90                  4.6162E+00  3.3842E-05  2.2644E+20  7.0530E+14
Sr-91                  3.6655E+01  1.0112E-08  6.6917E+16  5.8760E+15
Sr-92                  2.4634E+01  1.9598E-09  1.2829E+16  4.4745E+15
Y-90                   1.0572E-01  1.9432E-10  1.3002E+15  1.2058E+13
Y-91                   4.5437E-01  1.8528E-08  1.2261E+17  6.8795E+13
Y-92                   6.3394E+00  6.5883E-10  4.3125E+15  6.1155E+14
Y-93                   4.2645E-01  1.2782E-10  8.2769E+14  6.8165E+13
Zr-95                  5.4339E-01  2.5294E-08  1.6034E+17  8.3047E+13
Zr-97                  4.7727E-01  2.4966E-10  1.5500E+15  7.4907E+13
Nb-95                  5.4505E-01  1.3939E-08  8.8359E+16  8.3274E+13
Mo-99                  6.7890E+00  1.4155E-08  8.6105E+16  1.0444E+15
Tc-99m                 6.1302E+00  1.1658E-09  7.0918E+15  9.3274E+14
Ru-103                 6.0306E+00  1.8686E-07  1.0925E+18  9.2183E+14
Ru-105                 2.9614E+00  4.4055E-10  2.5267E+15  5.0208E+14
Ru-106                 2.6273E+00  7.8531E-07  4.4615E+18  4.0144E+14
Rh-105                 4.0160E+00  4.7579E-09  2.7289E+16  6.1474E+14
Sb-127                 6.8115E+00  2.5506E-08  1.2095E+17  1.0458E+15
Sb-129                 1.4580E+01  2.5927E-09  1.2104E+16  2.4792E+15
Te-127                 6.8456E+00  2.5939E-09  1.2300E+16  1.0428E+15
Te-127m                1.1758E+00  1.2465E-07  5.9107E+17  1.7964E+14
Te-129                 1.6946E+01  8.0919E-10  3.7776E+15  2.6796E+15
Te-129m                3.8740E+00  1.2860E-07  6.0034E+17  5.9191E+14
Te-131m                1.3789E+01  1.7292E-08  7.9491E+16  2.1388E+15
Te-132                 1.0237E+02  3.3719E-07  1.5383E+18  1.5731E+16
I-131                  7.0257E+02  5.6671E-06  2.6052E+19  1.4822E+17
I-132                  6.6744E+02  6.4661E-08  2.9500E+17  1.6624E+17
I-133                  1.3608E+03  1.2013E-06  5.4393E+18  2.9503E+17
I-134                  2.5197E+02  9.4455E-09  4.2449E+16  1.2164E+17
I-135                  1.0831E+03  3.0843E-07  1.3758E+18  2.5099E+17
Xe-133                 1.0828E+05  5.7846E-04  2.6192E+21  1.0706E+19
Xe-135                 4.2923E+04  1.6808E-05  7.4979E+19  4.3383E+18
Cs-134                 1.6250E+02  1.2559E-04  5.6444E+20  3.6007E+16
Cs-136                 4.8362E+01  6.5987E-07  2.9219E+18  1.0738E+16
Cs-137                 1.3078E+02  1.5035E-03  6.6089E+21  2.8977E+16
Ba-139                 1.6693E+01  1.0205E-09  4.4214E+15  3.6285E+15
Ba-140                 5.3887E+01  7.3608E-07  3.1663E+18  8.2454E+15
La-140                 1.6416E+00  2.9534E-09  1.2704E+16  1.7519E+14
La-141                 3.3354E-01  5.8977E-11  2.5189E+14  5.7336E+13
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La-142	1.6944E-01	1.1836E-11	5.0197E+13	3.5394E+13
Ce-141	1.2776E+00	4.4838E-08	1.9150E+17	1.9526E+14
Ce-143	1.1746E+00	1.7688E-09	7.4488E+15	1.8194E+14
Ce-144	1.0265E+00	3.2183E-07	1.3459E+18	1.5684E+14
Pr-143	4.8185E-01	7.1557E-09	3.0134E+16	7.3488E+13
Nd-147	1.9921E-01	2.4625E-09	1.0088E+16	3.0489E+13
Np-239	1.4126E+01	6.0889E-08	1.5342E+17	2.1756E+15
Pu-238	4.1450E-03	2.4212E-07	6.1263E+17	6.3329E+11
Pu-239	3.6313E-04	5.8422E-06	1.4721E+19	5.5476E+10
Pu-240	6.7998E-04	2.9841E-06	7.4878E+18	1.0389E+11
Pu-241	1.4656E-01	1.4227E-06	3.5551E+18	2.2392E+13
Am-241	9.8221E-05	2.8618E-08	7.1511E+16	1.5004E+10
Cm-242	2.4913E-02	7.5168E-09	1.8705E+16	3.8068E+12
Cm-244	1.6471E-03	2.0359E-08	5.0248E+16	2.5165E+11

RB Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	2.1132E+22	0.0000E+00	
Elemental I (atoms)	1.5565E+18	0.0000E+00	
Organic I (atoms)	1.2160E+18	0.0000E+00	
Aerosols (kg)	1.6849E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8749E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5308E-08
Total I (Ci)			4.0660E+03

DW to RB Transport Group Inventory:

Time (h) = 2.4000 Leakage Transport

Noble gases (atoms)	2.1152E+22
Elemental I (atoms)	1.5950E+18
Organic I (atoms)	1.2331E+18
Aerosols (kg)	1.6777E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 2.4000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 2.4000	Ci	kg	Atoms	Decay
Co-58	1.7332E-10	5.4507E-18	5.6595E+07	1.7985E+04
Co-60	2.0764E-10	1.8369E-16	1.8437E+09	2.1542E+04
Kr-85	1.9242E-02	4.9046E-08	3.4748E+17	1.7809E+12
Kr-85m	2.1878E-01	2.6585E-11	1.8835E+14	2.1688E+13
Kr-87	1.7206E-01	6.0743E-12	4.2046E+13	2.0527E+13
Kr-88	4.8059E-01	3.8327E-11	2.6229E+14	4.9627E+13
Rb-86	2.4211E-08	2.9755E-16	2.0836E+09	3.8127E+06
Sr-89	2.9370E-07	1.0110E-14	6.8405E+10	3.0479E+07
Sr-90	3.8669E-08	2.8349E-13	1.8969E+12	4.0119E+06
Sr-91	3.0705E-07	8.4705E-17	5.6056E+08	3.2965E+07
Sr-92	2.0636E-07	1.6417E-17	1.0746E+08	2.4198E+07
Y-90	1.0000E-09	1.8381E-18	1.2299E+07	8.5117E+04
Y-91	3.8254E-09	1.5599E-16	1.0323E+09	3.9404E+05
Y-92	6.5202E-08	6.7761E-18	4.4355E+07	5.2830E+06
Y-93	3.5723E-09	1.0707E-18	6.9334E+06	3.8273E+05
Zr-95	4.5519E-09	2.1189E-16	1.3432E+09	4.7235E+05
Zr-97	3.9980E-09	2.0914E-18	1.2984E+07	4.2281E+05
Nb-95	4.5658E-09	1.1676E-16	7.4017E+08	4.7368E+05
Mo-99	5.6871E-08	1.1858E-16	7.2129E+08	5.9291E+06
Tc-99m	5.1352E-08	9.7660E-18	5.9406E+07	5.3026E+06
Ru-103	5.0517E-08	1.5653E-15	9.1517E+09	5.2429E+06
Ru-105	2.4807E-08	3.6904E-18	2.1166E+07	2.7711E+06
Ru-106	2.2009E-08	6.5784E-15	3.7374E+10	2.2834E+06
Rh-105	3.3641E-08	3.9857E-17	2.2859E+08	3.4945E+06
Sb-127	5.7059E-08	2.1366E-16	1.0131E+09	5.9404E+06
Sb-129	1.2213E-07	2.1719E-17	1.0139E+08	1.3671E+07
Te-127	5.7345E-08	2.1729E-17	1.0303E+08	5.9299E+06

Te-127m	9.8493E-09	1.0442E-15	4.9513E+09	1.0218E+06
Te-129	1.4196E-07	6.7785E-18	3.1644E+07	1.4990E+07
Te-129m	3.2452E-08	1.0772E-15	5.0289E+09	3.3669E+06
Te-131m	1.1550E-07	1.4485E-16	6.6589E+08	1.2113E+07
Te-132	8.5753E-07	2.8246E-15	1.2886E+10	8.9335E+07
I-131	7.7133E-04	6.2216E-12	2.8601E+13	1.1044E+11
I-132	6.3473E-04	6.1492E-14	2.8054E+11	1.0651E+11
I-133	1.4944E-03	1.3192E-12	5.9730E+12	2.1817E+11
I-134	2.7670E-04	1.0372E-14	4.6614E+10	7.1305E+10
I-135	1.1894E-03	3.3869E-13	1.5108E+12	1.8211E+11
Xe-133	2.0410E+00	1.0904E-08	4.9372E+16	1.8929E+14
Xe-135	7.8632E-01	3.0791E-10	1.3735E+15	7.4645E+13
Cs-134	2.6581E-06	2.0545E-12	9.2330E+12	4.1817E+08
Cs-136	7.9110E-07	1.0794E-14	4.7796E+10	1.2464E+08
Cs-137	2.1392E-06	2.4593E-11	1.0811E+14	3.3652E+08
Ba-139	1.3983E-07	8.5487E-18	3.7037E+07	1.8589E+07
Ba-140	4.5141E-07	6.1660E-15	2.6523E+10	4.6882E+07
La-140	1.5864E-08	2.8541E-17	1.2277E+08	1.3024E+06
La-141	2.7940E-09	4.9404E-19	2.1101E+06	3.1517E+05
La-142	1.4193E-09	9.9151E-20	4.2049E+05	1.8354E+05
Ce-141	1.0701E-08	3.7555E-16	1.6040E+09	1.1105E+06
Ce-143	9.8395E-09	1.4817E-17	6.2397E+07	1.0309E+06
Ce-144	8.5987E-09	2.6960E-15	1.1275E+10	8.9215E+05
Pr-143	4.0400E-09	5.9995E-17	2.5266E+08	4.1853E+05
Nd-147	1.6687E-09	2.0628E-17	8.4505E+07	1.7334E+05
Np-239	1.1833E-07	5.1006E-16	1.2852E+09	1.2347E+07
Pu-238	3.4722E-11	2.0282E-15	5.1319E+09	3.6023E+03
Pu-239	3.0419E-12	4.8939E-14	1.2331E+11	3.1557E+02
Pu-240	5.6961E-12	2.4997E-14	6.2724E+10	5.9096E+02
Pu-241	1.2277E-09	1.1918E-14	2.9781E+10	1.2737E+05
Am-241	8.2282E-13	2.3974E-16	5.9906E+08	8.5356E+01
Cm-242	2.0869E-10	6.2967E-17	1.5669E+08	2.1653E+04
Cm-244	1.3797E-11	1.7054E-16	4.2092E+08	1.4315E+03

CR Transport Group Inventory:

Time (h) = 2.4000	Atmosphere	Sump	
Noble gases (atoms)	3.9872E+17	0.0000E+00	
Elemental I (atoms)	2.7805E+13	0.0000E+00	
Organic I (atoms)	8.1363E+12	0.0000E+00	
Aerosols (kg)	2.7168E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7013E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.5360E-13
Total I (Ci)			4.3665E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6823E+17
Elemental I (atoms)	0.0000E+00	5.2640E+13
Organic I (atoms)	0.0000E+00	1.2553E+13
Aerosols (kg)	0.0000E+00	5.1028E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.6001E+17
Elemental I (atoms)	1.2828E+14	3.9673E+12
Organic I (atoms)	3.3025E+13	1.0214E+12
Aerosols (kg)	1.2415E-10	3.8396E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 2.4000	Filtered	Transported
Noble gases (atoms)	2.2918E+17	0.0000E+00
Elemental I (atoms)	2.8232E+13	0.0000E+00
Organic I (atoms)	5.3304E+12	0.0000E+00
Aerosols (kg)	2.7697E-11	0.0000E+00

EAB Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.2159E-02	7.3132E-02	2.4470E-02
Accumulated dose (rem)	5.2176E-02	2.2683E-01	5.9355E-02

LPZ Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.4759E-03	8.1711E-03	2.7340E-03
Accumulated dose (rem)	5.8297E-03	2.5344E-02	6.6318E-03

CR Doses:

Time (h) = 3.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	9.6130E-03	3.1871E-01	1.9681E-02
Accumulated dose (rem)	1.9644E-02	8.4486E-01	4.6368E-02

DW Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	7.3351E-02	2.3068E-09	2.3951E+16	4.3574E+15
Co-60	8.7895E-02	7.7756E-08	7.8043E+17	5.2178E+15
Kr-85	1.3579E+06	3.4611E+00	2.4521E+25	3.3190E+20
Kr-85m	1.4070E+07	1.7097E-03	1.2113E+22	4.0173E+21
Kr-87	8.7549E+06	3.0908E-04	2.1394E+21	3.8619E+21
Kr-88	2.9294E+07	2.3362E-03	1.5988E+22	9.1890E+21
Rb-86	2.5243E+00	3.1024E-08	2.1724E+17	3.1470E+17
Sr-89	1.2429E+02	4.2780E-06	2.8947E+19	7.3853E+18
Sr-90	1.6369E+01	1.2000E-04	8.0297E+20	9.7173E+17
Sr-91	1.2441E+02	3.4321E-08	2.2713E+17	8.3795E+18
Sr-92	7.4925E+01	5.9609E-09	3.9019E+16	6.9553E+18
Y-90	3.6183E-01	6.6506E-10	4.4501E+15	1.0192E+16
Y-91	1.6072E+00	6.5536E-08	4.3370E+17	9.3742E+16
Y-92	1.8153E+01	1.8866E-09	1.2349E+16	1.1392E+17
Y-93	1.4512E+00	4.3497E-10	2.8166E+15	9.7008E+16
Zr-95	1.9264E+00	8.9669E-08	5.6842E+17	1.1444E+17
Zr-97	1.6513E+00	8.6379E-10	5.3627E+15	1.0522E+17
Nb-95	1.9327E+00	4.9427E-08	3.1332E+17	1.1473E+17
Mo-99	2.3923E+01	4.9879E-08	3.0341E+17	1.4461E+18
Tc-99m	2.1705E+01	4.1277E-09	2.5109E+16	1.2876E+18
Ru-103	2.1375E+01	6.6230E-07	3.8723E+18	1.2705E+18
Ru-105	9.5622E+00	1.4225E-09	8.1587E+15	7.4464E+17
Ru-106	9.3160E+00	2.7846E-06	1.5820E+19	5.5310E+17
Rh-105	1.4191E+01	1.6813E-08	9.6431E+16	8.4829E+17
Sb-127	2.4045E+01	9.0039E-08	4.2695E+17	1.4460E+18
Sb-129	4.6956E+01	8.3501E-09	3.8981E+16	3.6845E+18
Te-127	2.4260E+01	9.1925E-09	4.3589E+16	1.4383E+18
Te-127m	4.1693E+00	4.4201E-07	2.0960E+18	2.4750E+17
Te-129	5.6505E+01	2.6981E-09	1.2596E+16	3.8539E+18
Te-129m	1.3736E+01	4.5596E-07	2.1286E+18	8.1554E+17
Te-131m	4.8221E+01	6.0473E-08	2.7800E+17	2.9790E+18
Te-132	3.6108E+02	1.1893E-06	5.4261E+18	2.1765E+19
I-131	3.3235E+04	2.6808E-04	1.2324E+21	1.5242E+20
I-132	3.5284E+04	3.4183E-06	1.5595E+19	2.1600E+20
I-133	6.3198E+04	5.5789E-05	2.5261E+20	3.0913E+20
I-134	7.4287E+03	2.7847E-07	1.2515E+18	2.0662E+20
I-135	4.8189E+04	1.3722E-05	6.1210E+19	2.7522E+20
Xe-133	1.4384E+08	7.6846E-01	3.4795E+24	3.5328E+22
Xe-135	5.5682E+07	2.1804E-02	9.7264E+22	1.4459E+22
Cs-134	2.7740E+02	2.1440E-04	9.6355E+20	3.4465E+19
Cs-136	8.2452E+01	1.1250E-06	4.9815E+18	1.0294E+19
Cs-137	2.2325E+02	2.5666E-03	1.1282E+22	2.7735E+19
Ba-139	4.3775E+01	2.6762E-09	1.1595E+16	6.3330E+18
Ba-140	1.9083E+02	2.6066E-06	1.1212E+19	1.1372E+19
La-140	5.5759E+00	1.0032E-08	4.3152E+16	1.2238E+17
La-141	1.0640E+00	1.8813E-10	8.0352E+14	8.5854E+16
La-142	4.5876E-01	3.2048E-11	1.3591E+14	6.0258E+16
Ce-141	4.5297E+00	1.5898E-07	6.7899E+17	2.6912E+17
Ce-143	4.1130E+00	6.1935E-09	2.6083E+16	2.5317E+17
Ce-144	3.6397E+00	1.1412E-06	4.7724E+18	2.1610E+17
Pr-143	1.7081E+00	2.5366E-08	1.0682E+17	1.0105E+17
Nd-147	7.0529E-01	8.7181E-09	3.5716E+16	4.2058E+16

Np-239	4.9723E+01	2.1433E-07	5.4005E+17	3.0148E+18
Pu-238	1.4698E-02	8.5856E-07	2.1724E+18	8.7252E+14
Pu-239	1.2878E-03	2.0718E-05	5.2203E+19	7.6428E+13
Pu-240	2.4112E-03	1.0582E-05	2.6552E+19	1.4314E+14
Pu-241	5.1970E-01	5.0450E-06	1.2606E+19	3.0851E+16
Am-241	3.4831E-04	1.0148E-07	2.5359E+17	2.0669E+13
Cm-242	8.8332E-02	2.6652E-08	6.6323E+16	5.2453E+15
Cm-244	5.8406E-03	7.2193E-08	1.7818E+17	3.4672E+14

DW Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8128E+25	0.0000E+00	
Elemental I (atoms)	4.3752E+19	4.8566E+22	
Organic I (atoms)	1.4617E+21	0.0000E+00	
Aerosols (kg)	2.9667E-03	4.8985E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0681E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.3075E-05
Total I (Ci)			1.8733E+05

DW to RB Transport Group Inventory:

Time (h) = 3.0000 Leakage Transport

Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4310E+17
Organic I (atoms)	0.0000E+00	7.3742E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2833E+22
Elemental I (atoms)	0.0000E+00	8.4310E+17
Organic I (atoms)	0.0000E+00	7.3742E+17
Aerosols (kg)	0.0000E+00	8.8330E-04

RB Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.0763E-02	6.5296E-10	6.7796E+15	4.8199E+12
Co-60	2.4879E-02	2.2010E-08	2.2091E+17	5.7735E+12
Kr-85	1.5290E+03	3.8971E-03	2.7610E+22	2.0582E+17
Kr-85m	1.5843E+04	1.9251E-06	1.3639E+19	2.3812E+18
Kr-87	9.8578E+03	3.4802E-07	2.4090E+18	2.0191E+18
Kr-88	3.2985E+04	2.6305E-06	1.8002E+19	5.2998E+18
Rb-86	1.4814E+00	1.8206E-08	1.2749E+17	4.4681E+14
Sr-89	3.5180E+01	1.2109E-06	8.1937E+18	8.1681E+15
Sr-90	4.6334E+00	3.3968E-05	2.2729E+20	1.0752E+15
Sr-91	3.5216E+01	9.7148E-09	6.4290E+16	8.7500E+15
Sr-92	2.1208E+01	1.6873E-09	1.1045E+16	6.3044E+15
Y-90	1.3533E-01	2.4875E-10	1.6644E+15	2.1495E+13
Y-91	4.6039E-01	1.8773E-08	1.2424E+17	1.0535E+14
Y-92	8.2083E+00	8.5305E-10	5.5839E+15	1.1792E+15
Y-93	4.1077E-01	1.2312E-10	7.9726E+14	1.0164E+14
Zr-95	5.4527E-01	2.5382E-08	1.6090E+17	1.2659E+14
Zr-97	4.6741E-01	2.4450E-10	1.5180E+15	1.1269E+14
Nb-95	5.4708E-01	1.3991E-08	8.8689E+16	1.2695E+14
Mo-99	6.7715E+00	1.4119E-08	8.5884E+16	1.5867E+15
Tc-99m	6.1437E+00	1.1684E-09	7.1073E+15	1.4209E+15
Ru-103	6.0504E+00	1.8747E-07	1.0961E+18	1.4050E+15
Ru-105	2.7067E+00	4.0266E-10	2.3094E+15	7.2861E+14
Ru-106	2.6370E+00	7.8820E-07	4.4780E+18	6.1197E+14
Rh-105	4.0170E+00	4.7592E-09	2.7296E+16	9.3580E+14

Sb-127	6.8062E+00	2.5486E-08	1.2085E+17	1.5904E+15
Sb-129	1.3291E+01	2.3636E-09	1.1034E+16	3.5931E+15
Te-127	6.8670E+00	2.6020E-09	1.2338E+16	1.5892E+15
Te-127m	1.1802E+00	1.2512E-07	5.9328E+17	2.7386E+14
Te-129	1.5994E+01	7.6373E-10	3.5654E+15	3.9652E+15
Te-129m	3.8881E+00	1.2906E-07	6.0251E+17	9.0234E+14
Te-131m	1.3650E+01	1.7117E-08	7.8690E+16	3.2361E+15
Te-132	1.0221E+02	3.3666E-07	1.5359E+18	2.3913E+16
I-131	7.1438E+02	5.7623E-06	2.6490E+19	2.0494E+17
I-132	5.8831E+02	5.6995E-08	2.6003E+17	2.1634E+17
I-133	1.3592E+03	1.1998E-06	5.4327E+18	4.0393E+17
I-134	1.5977E+02	5.9890E-09	2.6915E+16	1.3785E+17
I-135	1.0364E+03	2.9511E-07	1.3164E+18	3.3583E+17
Xe-133	1.6188E+05	8.6484E-04	3.9159E+21	2.1864E+19
Xe-135	6.1931E+04	2.4251E-05	1.0818E+20	8.6829E+18
Cs-134	1.6279E+02	1.2582E-04	5.6544E+20	4.9011E+16
Cs-136	4.8385E+01	6.6018E-07	2.9233E+18	1.4606E+16
Cs-137	1.3101E+02	1.5062E-03	6.6207E+21	3.9442E+16
Ba-139	1.2391E+01	7.5753E-10	3.2820E+15	4.7831E+15
Ba-140	5.4015E+01	7.3782E-07	3.1738E+18	1.2561E+16
La-140	2.1843E+00	3.9299E-09	1.6904E+16	3.2446E+14
La-141	3.0116E-01	5.3253E-11	2.2744E+14	8.2698E+13
La-142	1.2986E-01	9.0714E-12	3.8471E+13	4.7294E+13
Ce-141	1.2818E+00	4.4987E-08	1.9214E+17	2.9762E+14
Ce-143	1.1642E+00	1.7531E-09	7.3829E+15	2.7548E+14
Ce-144	1.0303E+00	3.2302E-07	1.3509E+18	2.3910E+14
Pr-143	4.8453E-01	7.1953E-09	3.0302E+16	1.1213E+14
Nd-147	1.9964E-01	2.4678E-09	1.0110E+16	4.6440E+13
Np-239	1.4075E+01	6.0668E-08	1.5287E+17	3.3034E+15
Pu-238	4.1604E-03	2.4302E-07	6.1492E+17	9.6545E+11
Pu-239	3.6451E-04	5.8644E-06	1.4777E+19	8.4576E+10
Pu-240	6.8251E-04	2.9952E-06	7.5157E+18	1.5838E+11
Pu-241	1.4711E-01	1.4280E-06	3.5684E+18	3.4137E+13
Am-241	9.8604E-05	2.8729E-08	7.1789E+16	2.2876E+10
Cm-242	2.5003E-02	7.5440E-09	1.8773E+16	5.8031E+12
Cm-244	1.6532E-03	2.0435E-08	5.0435E+16	3.8364E+11

RB Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	3.1669E+22	0.0000E+00	
Elemental I (atoms)	1.5586E+18	0.0000E+00	
Organic I (atoms)	1.7533E+18	0.0000E+00	
Aerosols (kg)	1.6879E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.9035E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5399E-08
Total I (Ci)			3.8580E+03

DW to RB Transport Group Inventory:

Time (h) = 3.0000	Leakage Transport
Noble gases (atoms)	3.1708E+22
Elemental I (atoms)	1.6115E+18
Organic I (atoms)	1.7846E+18
Aerosols (kg)	1.6808E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 3.0000	Ci	kg	Atoms	Decay
Co-58	2.1909E-10	6.8901E-18	7.1540E+07	3.3892E+04
Co-60	2.6253E-10	2.3225E-16	2.3311E+09	4.0601E+04
Kr-85	2.9276E-02	7.4619E-08	5.2867E+17	3.7536E+12
Kr-85m	3.0335E-01	3.6861E-11	2.6116E+14	4.3040E+13
Kr-87	1.8875E-01	6.6637E-12	4.6126E+13	3.5404E+13

Kr-88	6.3158E-01	5.0368E-11	3.4469E+14	9.5231E+13
Rb-86	2.5116E-08	3.0867E-16	2.1615E+09	5.7800E+06
Sr-89	3.7123E-07	1.2778E-14	8.6461E+10	5.7433E+07
Sr-90	4.8893E-08	3.5843E-13	2.3984E+12	7.5612E+06
Sr-91	3.7160E-07	1.0251E-16	6.7840E+08	6.0517E+07
Sr-92	2.2379E-07	1.7804E-17	1.1654E+08	4.1706E+07
Y-90	1.5319E-09	2.8156E-18	1.8840E+07	1.8476E+05
Y-91	4.8756E-09	1.9881E-16	1.3157E+09	7.4630E+05
Y-92	9.6427E-08	1.0021E-17	6.5596E+07	1.1624E+07
Y-93	4.3345E-09	1.2992E-18	8.4128E+06	7.0370E+05
Zr-95	5.7538E-09	2.6783E-16	1.6978E+09	8.9010E+05
Zr-97	4.9322E-09	2.5800E-18	1.6018E+07	7.8513E+05
Nb-95	5.7729E-09	1.4763E-16	9.3585E+08	8.9274E+05
Mo-99	7.1454E-08	1.4898E-16	9.0626E+08	1.1132E+07
Tc-99m	6.4829E-08	1.2329E-17	7.4997E+07	9.9860E+06
Ru-103	6.3845E-08	1.9782E-15	1.1566E+10	9.8786E+06
Ru-105	2.8561E-08	4.2489E-18	2.4369E+07	4.9408E+06
Ru-106	2.7826E-08	8.3172E-15	4.7252E+10	4.3035E+06
Rh-105	4.2388E-08	5.0220E-17	2.8803E+08	6.5749E+06
Sb-127	7.1820E-08	2.6894E-16	1.2752E+09	1.1165E+07
Sb-129	1.4025E-07	2.4941E-17	1.1643E+08	2.4339E+07
Te-127	7.2461E-08	2.7457E-17	1.3020E+08	1.1173E+07
Te-127m	1.2453E-08	1.3202E-15	6.2604E+09	1.9259E+06
Te-129	1.6877E-07	8.0590E-18	3.7622E+07	2.7310E+07
Te-129m	4.1028E-08	1.3619E-15	6.3578E+09	6.3454E+06
Te-131m	1.4403E-07	1.8063E-16	8.3034E+08	2.2639E+07
Te-132	1.0785E-06	3.5524E-15	1.6207E+10	1.6783E+08
I-131	8.7080E-04	7.0240E-12	3.2290E+13	1.7625E+11
I-132	6.2288E-04	6.0344E-14	2.7530E+11	1.5712E+11
I-133	1.6571E-03	1.4629E-12	6.6237E+12	3.4452E+11
I-134	1.9479E-04	7.3019E-15	3.2816E+10	9.0030E+10
I-135	1.2636E-03	3.5980E-13	1.6050E+12	2.8051E+11
Xe-133	3.0963E+00	1.6541E-08	7.4898E+16	3.9822E+14
Xe-135	1.1545E+00	4.5210E-10	2.0167E+15	1.5382E+14
Cs-134	2.7600E-06	2.1332E-12	9.5869E+12	6.3426E+08
Cs-136	8.2036E-07	1.1193E-14	4.9564E+10	1.8891E+08
Cs-137	2.2212E-06	2.5537E-11	1.1225E+14	5.1043E+08
Ba-139	1.3075E-07	7.9935E-18	3.4632E+07	2.9605E+07
Ba-140	5.6997E-07	7.7856E-15	3.3490E+10	8.8286E+07
La-140	2.4959E-08	4.4904E-17	1.9316E+08	2.9021E+06
La-141	3.1779E-09	5.6193E-19	2.4000E+06	5.5802E+05
La-142	1.3703E-09	9.5723E-20	4.0595E+05	2.9713E+05
Ce-141	1.3525E-08	4.7467E-16	2.0273E+09	2.0925E+06
Ce-143	1.2285E-08	1.8499E-17	7.7906E+07	1.9281E+06
Ce-144	1.0871E-08	3.4085E-15	1.4254E+10	1.6814E+06
Pr-143	5.1161E-09	7.5975E-17	3.1995E+08	7.8955E+05
Nd-147	2.1066E-09	2.6040E-17	1.0668E+08	3.2639E+05
Np-239	1.4852E-07	6.4018E-16	1.6131E+09	2.3166E+07
Pu-238	4.3901E-11	2.5644E-15	6.4887E+09	6.7893E+03
Pu-239	3.8464E-12	6.1882E-14	1.5593E+11	5.9478E+02
Pu-240	7.2020E-12	3.1606E-14	7.9307E+10	1.1138E+03
Pu-241	1.5523E-09	1.5069E-14	3.7654E+10	2.4006E+05
Am-241	1.0405E-12	3.0317E-16	7.5756E+08	1.6088E+02
Cm-242	2.6384E-10	7.9606E-17	1.9810E+08	4.0807E+04
Cm-244	1.7445E-11	2.1563E-16	5.3220E+08	2.6979E+03

CR Transport Group Inventory:

Time (h) = 3.0000	Atmosphere	Sump	
Noble gases (atoms)	6.0624E+17	0.0000E+00	
Elemental I (atoms)	2.8983E+13	0.0000E+00	
Organic I (atoms)	1.1353E+13	0.0000E+00	
Aerosols (kg)	2.8302E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.1508E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.0512E-13
Total I (Ci)			4.6092E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 3.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.9407E+17
Elemental I (atoms)	0.0000E+00	6.7933E+13

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Organic I (atoms)      0.0000E+00  2.0359E+13
Aerosols (kg)          0.0000E+00  6.5704E-11

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =   3.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.0606E+17
Elemental I (atoms)    1.6907E+14  5.2290E+12
Organic I (atoms)      5.3847E+13  1.6654E+12
Aerosols (kg)          1.6330E-10  5.0504E-12

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   3.0000     Filtered   Transported
Noble gases (atoms)    4.9318E+17  0.0000E+00
Elemental I (atoms)    4.3345E+13  0.0000E+00
Organic I (atoms)      1.0472E+13  0.0000E+00
Aerosols (kg)          4.2449E-11  0.0000E+00

EAB Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.2126E-02  1.5996E-01  5.7168E-02
Accumulated dose (rem)  1.0430E-01  3.8678E-01  1.1652E-01

LPZ Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.8242E-03  1.7872E-02  6.3875E-03
Accumulated dose (rem)  1.1654E-02  4.3216E-02  1.3019E-02

CR Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3321E-02  6.4899E-01  4.3783E-02
Accumulated dose (rem)  4.2964E-02  1.4938E+00  9.0151E-02

DW Compartment Nuclide Inventory:

Time (h) =   4.0000       Ci           kg         Atoms      Decay
Co-58                  3.6468E-03  1.1469E-10  1.1908E+15  4.3601E+15
Co-60                  4.3715E-03  3.8673E-09  3.8816E+16  5.2210E+15
Kr-85                  1.3565E+06  3.4576E+00  2.4497E+25  5.1267E+20
Kr-85m                 1.2041E+07  1.4632E-03  1.0366E+22  5.7527E+21
Kr-87                  5.0710E+06  1.7902E-04  1.2392E+21  4.7604E+21
Kr-88                  2.2927E+07  1.8284E-03  1.2513E+22  1.2649E+22
Rb-86                  1.2536E-01  1.5406E-09  1.0788E+16  3.1479E+17
Sr-89                  6.1780E+00  2.1265E-07  1.4389E+18  7.3898E+18
Sr-90                  8.1415E-01  5.9685E-06  3.9937E+19  9.7232E+17
Sr-91                  5.7525E+00  1.5869E-09  1.0502E+16  8.3839E+18
Sr-92                  2.8855E+00  2.2957E-10  1.5027E+15  6.9579E+18
Y-90                   2.6577E-02  4.8850E-11  3.2687E+14  1.0207E+16
Y-91                   8.1135E-02  3.3084E-09  2.1894E+16  9.3801E+16
Y-92                   1.3304E+00  1.3826E-10  9.0500E+14  1.1466E+17
Y-93                   6.7390E-02  2.0199E-11  1.3080E+14  9.7060E+16
Zr-95                  9.5768E-02  4.4579E-09  2.8259E+16  1.1451E+17
Zr-97                  7.8829E-02  4.1236E-11  2.5601E+14  1.0528E+17
Nb-95                  9.6128E-02  2.4583E-09  1.5583E+16  1.1480E+17
Mo-99                  1.1774E+00  2.4549E-09  1.4933E+16  1.4469E+18
Tc-99m                 1.0760E+00  2.0464E-10  1.2448E+15  1.2884E+18
Ru-103                 1.0623E+00  3.2917E-08  1.9245E+17  1.2713E+18
Ru-105                 4.0685E-01  6.0526E-11  3.4714E+14  7.4498E+17
Ru-106                 4.6331E-01  1.3849E-07  7.8677E+17  5.5344E+17
Rh-105                 7.0069E-01  8.3015E-10  4.7612E+15  8.4880E+17
Sb-127                 1.1870E+00  4.4448E-09  2.1076E+16  1.4468E+18
Sb-129                 1.9892E+00  3.5374E-10  1.6514E+15  3.6861E+18
Te-127                 1.2050E+00  4.5661E-10  2.1652E+15  1.4392E+18
Te-127m                2.0737E-01  2.1985E-08  1.0425E+17  2.4765E+17
Te-129                 2.5158E+00  1.2013E-10  5.6081E+14  3.8558E+18
Te-129m                6.8300E-01  2.2672E-08  1.0584E+17  8.1603E+17
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Te-131m	2.3436E+00	2.9390E-09	1.3511E+16	2.9808E+18
Te-132	1.7800E+01	5.8632E-08	2.6749E+17	2.1778E+19
I-131	3.1924E+04	2.5750E-04	1.1838E+21	1.5672E+20
I-132	2.5188E+04	2.4402E-06	1.1133E+19	2.1995E+20
I-133	5.8927E+04	5.2019E-05	2.3554E+20	3.1718E+20
I-134	3.2480E+03	1.2175E-07	5.4718E+17	2.0728E+20
I-135	4.1830E+04	1.1911E-05	5.3133E+19	2.8115E+20
Xe-133	1.4291E+08	7.6348E-01	3.4570E+24	5.4425E+22
Xe-135	5.1544E+07	2.0184E-02	9.0037E+22	2.1597E+22
Cs-134	1.3797E+01	1.0663E-05	4.7922E+19	3.4475E+19
Cs-136	4.0919E+00	5.5831E-08	2.4722E+17	1.0297E+19
Cs-137	1.1104E+01	1.2766E-04	5.6114E+20	2.7743E+19
Ba-139	1.3167E+00	8.0500E-11	3.4877E+14	6.3344E+18
Ba-140	9.4696E+00	1.2935E-07	5.5640E+17	1.1379E+19
La-140	4.3451E-01	7.8173E-10	3.3626E+15	1.2261E+17
La-141	4.4361E-02	7.8441E-12	3.3502E+13	8.5890E+16
La-142	1.4555E-02	1.0167E-12	4.3120E+12	6.0273E+16
Ce-141	2.2514E-01	7.9014E-09	3.3747E+16	2.6928E+17
Ce-143	2.0032E-01	3.0164E-10	1.2703E+15	2.5332E+17
Ce-144	1.8101E-01	5.6752E-08	2.3734E+17	2.1623E+17
Pr-143	8.5206E-02	1.2653E-09	5.3287E+15	1.0111E+17
Nd-147	3.4987E-02	4.3247E-10	1.7717E+15	4.2084E+16
Np-239	2.4429E+00	1.0530E-08	2.6533E+16	3.0166E+18
Pu-238	7.3105E-04	4.2702E-08	1.0805E+17	8.7305E+14
Pu-239	6.4057E-05	1.0306E-06	2.5968E+18	7.6475E+13
Pu-240	1.1993E-04	5.2630E-07	1.3206E+18	1.4322E+14
Pu-241	2.5848E-02	2.5092E-07	6.2700E+17	3.0870E+16
Am-241	1.7329E-05	5.0489E-09	1.2616E+16	2.0682E+13
Cm-242	4.3926E-03	1.3253E-09	3.2981E+15	5.2485E+15
Cm-244	2.9049E-04	3.5906E-09	8.8620E+15	3.4693E+14

DW Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	2.8068E+25	0.0000E+00	
Elemental I (atoms)	4.3051E+19	4.8566E+22	
Organic I (atoms)	1.4382E+21	0.0000E+00	
Aerosols (kg)	1.4754E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0146E-05
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.2270E-05
Total I (Ci)			1.6112E+05

DW to RB Transport Group Inventory:

Time (h) = 4.0000 Leakage Transport

Noble gases (atoms)	4.9270E+22
Elemental I (atoms)	1.6387E+18
Organic I (atoms)	2.6914E+18
Aerosols (kg)	1.6814E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5140E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8206E+22
Elemental I (atoms)	0.0000E+00	8.5140E+17
Organic I (atoms)	0.0000E+00	1.0148E+18
Aerosols (kg)	0.0000E+00	8.8348E-04

RB Compartment Nuclide Inventory:

Time (h) = 4.0000	Ci	kg	Atoms	Decay
Co-58	2.0769E-02	6.5315E-10	6.7816E+15	7.5864E+12
Co-60	2.4896E-02	2.2025E-08	2.2106E+17	9.0892E+12

Kr-85	2.3772E+03	6.0592E-03	4.2929E+22	4.7163E+17
Kr-85m	2.1101E+04	2.5641E-06	1.8166E+19	4.9191E+18
Kr-87	8.8865E+03	3.1373E-07	2.1716E+18	3.3151E+18
Kr-88	4.0178E+04	3.2042E-06	2.1928E+19	1.0345E+19
Rb-86	1.4796E+00	1.8184E-08	1.2733E+17	6.4403E+14
Sr-89	3.5185E+01	1.2111E-06	8.1947E+18	1.2855E+16
Sr-90	4.6367E+00	3.3991E-05	2.2745E+20	1.6927E+15
Sr-91	3.2761E+01	9.0375E-09	5.9808E+16	1.3276E+16
Sr-92	1.6433E+01	1.3074E-09	8.5580E+15	8.7983E+15
Y-90	1.8392E-01	3.3805E-10	2.2620E+15	4.2432E+13
Y-91	4.6753E-01	1.9064E-08	1.2616E+17	1.6712E+14
Y-92	1.0100E+01	1.0497E-09	6.8711E+15	2.3887E+15
Y-93	3.8380E-01	1.1504E-10	7.4490E+14	1.5455E+14
Zr-95	5.4541E-01	2.5388E-08	1.6094E+17	1.9924E+14
Zr-97	4.4894E-01	2.3484E-10	1.4580E+15	1.7372E+14
Nb-95	5.4746E-01	1.4000E-08	8.8750E+16	1.9986E+14
Mo-99	6.7055E+00	1.3981E-08	8.5046E+16	2.4845E+15
Tc-99m	6.1282E+00	1.1654E-09	7.0893E+15	2.2338E+15
Ru-103	6.0502E+00	1.8746E-07	1.0961E+18	2.2110E+15
Ru-105	2.3171E+00	3.4470E-10	1.9770E+15	1.0626E+15
Ru-106	2.6386E+00	7.8869E-07	4.4807E+18	9.6339E+14
Rh-105	3.9905E+00	4.7278E-09	2.7116E+16	1.4690E+15
Sb-127	6.7600E+00	2.5314E-08	1.2003E+17	2.4941E+15
Sb-129	1.1329E+01	2.0146E-09	9.4048E+15	5.2296E+15
Te-127	6.8628E+00	2.6004E-09	1.2331E+16	2.5005E+15
Te-127m	1.1810E+00	1.2521E-07	5.9370E+17	4.3114E+14
Te-129	1.4328E+01	6.8416E-10	3.1939E+15	5.9360E+15
Te-129m	3.8898E+00	1.2912E-07	6.0277E+17	1.4204E+15
Te-131m	1.3347E+01	1.6738E-08	7.6946E+16	5.0343E+15
Te-132	1.0137E+02	3.3392E-07	1.5234E+18	3.7474E+16
I-131	7.3202E+02	5.9046E-06	2.7144E+19	3.0142E+17
I-132	4.7803E+02	4.6311E-08	2.1128E+17	2.8698E+17
I-133	1.3519E+03	1.1934E-06	5.4034E+18	5.8476E+17
I-134	7.4513E+01	2.7932E-09	1.2553E+16	1.5276E+17
I-135	9.5962E+02	2.7325E-07	1.2189E+18	4.6890E+17
Xe-133	2.5036E+05	1.3375E-03	6.0563E+21	4.9928E+19
Xe-135	8.9677E+04	3.5116E-05	1.5665E+20	1.9055E+19
Cs-134	1.6284E+02	1.2586E-04	5.6561E+20	7.0699E+16
Cs-136	4.8295E+01	6.5895E-07	2.9179E+18	2.1045E+16
Cs-137	1.3105E+02	1.5067E-03	6.6229E+21	5.6897E+16
Ba-139	7.4990E+00	4.5846E-10	1.9863E+15	6.0809E+15
Ba-140	5.3930E+01	7.3667E-07	3.1688E+18	1.9751E+16
La-140	3.0703E+00	5.5238E-09	2.3761E+16	6.6845E+14
La-141	2.5264E-01	4.4673E-11	1.9080E+14	1.1949E+14
La-142	8.2891E-02	5.7905E-12	2.4557E+13	6.1232E+13
Ce-141	1.2818E+00	4.4987E-08	1.9214E+17	4.6839E+14
Ce-143	1.1408E+00	1.7179E-09	7.2345E+15	4.2902E+14
Ce-144	1.0309E+00	3.2321E-07	1.3517E+18	3.7640E+14
Pr-143	4.8629E-01	7.2215E-09	3.0412E+16	1.7678E+14
Nd-147	1.9925E-01	2.4630E-09	1.0090E+16	7.3011E+13
Np-239	1.3913E+01	5.9971E-08	1.5111E+17	5.1677E+15
Pu-238	4.1634E-03	2.4319E-07	6.1535E+17	1.5199E+12
Pu-239	3.6481E-04	5.8693E-06	1.4789E+19	1.3316E+11
Pu-240	6.8299E-04	2.9973E-06	7.5210E+18	2.4934E+11
Pu-241	1.4721E-01	1.4290E-06	3.5709E+18	5.3742E+13
Am-241	9.8700E-05	2.8757E-08	7.1859E+16	3.6019E+10
Cm-242	2.5016E-02	7.5480E-09	1.8783E+16	9.1350E+12
Cm-244	1.6544E-03	2.0449E-08	5.0470E+16	6.0397E+11

RB Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	4.9184E+22	0.0000E+00	
Elemental I (atoms)	1.5635E+18	0.0000E+00	
Organic I (atoms)	2.6284E+18	0.0000E+00	
Aerosols (kg)	1.6884E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.9436E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.5514E-08
Total I (Ci)			3.5960E+03

DW to RB Transport Group Inventory:

Time (h) = 4.0000 Leakage Transport

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Noble gases (atoms)      4.9270E+22
Elemental I (atoms)      1.6387E+18
Organic I (atoms)        2.6914E+18
Aerosols (kg)            1.6814E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =   4.0000       Ci           kg          Atoms       Decay
Co-58                  3.0719E-10  9.6606E-18  1.0031E+08  6.9512E+04
Co-60                  3.6824E-10  3.2576E-16  3.2697E+09  8.3292E+04
Kr-85                  5.6545E-02  1.4412E-07  1.0211E+18  9.5152E+12
Kr-85m                 5.0191E-01  6.0989E-11  4.3210E+14  9.7895E+13
Kr-87                  2.1137E-01  7.4623E-12  5.1654E+13  6.3217E+13
Kr-88                  9.5568E-01  7.6215E-11  5.2157E+14  2.0409E+14
Rb-86                  2.8577E-08  3.5121E-16  2.4593E+09  9.3663E+06
Sr-89                  5.2041E-07  1.7913E-14  1.2121E+11  1.1778E+08
Sr-90                  6.8580E-08  5.0276E-13  3.3641E+12  1.5512E+07
Sr-91                  4.8456E-07  1.3367E-16  8.8461E+08  1.1868E+08
Sr-92                  2.4306E-07  1.9338E-17  1.2658E+08  7.3592E+07
Y-90                   2.8046E-09  5.1548E-18  3.4492E+07  4.6899E+05
Y-91                   6.9294E-09  2.8256E-16  1.8699E+09  1.5440E+06
Y-92                   1.5600E-07  1.6213E-17  1.0612E+08  2.8360E+07
Y-93                   5.6767E-09  1.7015E-18  1.1018E+07  1.3836E+06
Zr-95                  8.0670E-09  3.7551E-16  2.3804E+09  1.8255E+06
Zr-97                  6.6402E-09  3.4735E-18  2.1565E+07  1.5701E+06
Nb-95                  8.0974E-09  2.0708E-16  1.3127E+09  1.8315E+06
Mo-99                  9.9180E-08  2.0679E-16  1.2579E+09  2.2687E+07
Tc-99m                 9.0641E-08  1.7238E-17  1.0486E+08  2.0452E+07
Ru-103                 8.9488E-08  2.7728E-15  1.6212E+10  2.0257E+07
Ru-105                 3.4272E-08  5.0984E-18  2.9241E+07  9.2225E+06
Ru-106                 3.9027E-08  1.1665E-14  6.6274E+10  8.8282E+06
Rh-105                 5.9023E-08  6.9928E-17  4.0106E+08  1.3438E+07
Sb-127                 9.9987E-08  3.7441E-16  1.7754E+09  2.2798E+07
Sb-129                 1.6756E-07  2.9798E-17  1.3910E+08  4.5318E+07
Te-127                 1.0151E-07  3.8463E-17  1.8238E+08  2.2905E+07
Te-127m                1.7468E-08  1.8519E-15  8.7814E+09  3.9509E+06
Te-129                 2.1192E-07  1.0119E-17  4.7240E+07  5.2609E+07
Te-129m                5.7533E-08  1.9098E-15  8.9156E+09  1.3016E+07
Te-131m                1.9741E-07  2.4757E-16  1.1381E+09  4.5778E+07
Te-132                 1.4994E-06  4.9389E-15  2.2533E+10  3.4239E+08
I-131                  1.1569E-03  9.3315E-12  4.2897E+13  3.1201E+11
I-132                  6.5342E-04  6.3303E-14  2.8880E+11  2.4345E+11
I-133                  2.1368E-03  1.8863E-12  8.5411E+12  5.9886E+11
I-134                  1.1778E-04  4.4151E-15  1.9842E+10  1.1066E+11
I-135                  1.5169E-03  4.3193E-13  1.9268E+12  4.6739E+11
Xe-133                 5.9504E+00  3.1790E-08  1.4394E+17  1.0059E+15
Xe-135                 2.0926E+00  8.1942E-10  3.6553E+15  3.7347E+14
Cs-134                 3.1450E-06  2.4308E-12  1.0924E+13  1.0287E+09
Cs-136                 9.3278E-07  1.2727E-14  5.6356E+10  3.0601E+08
Cs-137                 2.5312E-06  2.9100E-11  1.2792E+14  8.2785E+08
Ba-139                 1.1092E-07  6.7810E-18  2.9379E+07  4.6085E+07
Ba-140                 7.9768E-07  1.0896E-14  4.6869E+10  1.8086E+08
La-140                 4.6951E-08  8.4471E-17  3.6335E+08  7.6000E+06
La-141                 3.7368E-09  6.6076E-19  2.8221E+06  1.0295E+06
La-142                 1.2260E-09  8.5646E-20  3.6322E+05  4.7440E+05
Ce-141                 1.8958E-08  6.6536E-16  2.8418E+09  4.2910E+06
Ce-143                 1.6874E-08  2.5409E-17  1.0701E+08  3.9039E+06
Ce-144                 1.5247E-08  4.7805E-15  1.9992E+10  3.4491E+06
Pr-143                 7.1953E-09  1.0685E-16  4.4998E+08  1.6224E+06
Nd-147                 2.9471E-09  3.6430E-17  1.4924E+08  6.6848E+05
Np-239                 2.0578E-07  8.8702E-16  2.2350E+09  4.7162E+07
Pu-238                 6.1580E-11  3.5970E-15  9.1016E+09  1.3928E+04
Pu-239                 5.3959E-12  8.6811E-14  2.1874E+11  1.2203E+03
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Pu-240	1.0102E-11	4.4333E-14	1.1124E+11	2.2849E+03
Pu-241	2.1773E-09	2.1136E-14	5.2816E+10	4.9248E+05
Am-241	1.4599E-12	4.2535E-16	1.0629E+09	3.3011E+02
Cm-242	3.7001E-10	1.1164E-16	2.7782E+08	8.3707E+04
Cm-244	2.4470E-11	3.0246E-16	7.4650E+08	5.5347E+03

CR Transport Group Inventory:

Time (h) = 4.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1697E+18	0.0000E+00	
Elemental I (atoms)	3.3159E+13	0.0000E+00	
Organic I (atoms)	1.9955E+13	0.0000E+00	
Aerosols (kg)	3.2387E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.4562E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.5727E-13
Total I (Ci)			5.5818E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.5057E+17
Elemental I (atoms)	0.0000E+00	9.7713E+13
Organic I (atoms)	0.0000E+00	4.1160E+13
Aerosols (kg)	0.0000E+00	9.4368E-11

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.7864E+18
Elemental I (atoms)	2.4851E+14	7.6858E+12
Organic I (atoms)	1.0933E+14	3.3815E+12
Aerosols (kg)	2.3976E-10	7.4151E-12

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 4.0000	Filtered	Transported
Noble gases (atoms)	1.2656E+18	0.0000E+00
Elemental I (atoms)	7.0956E+13	0.0000E+00
Organic I (atoms)	2.4161E+13	0.0000E+00
Aerosols (kg)	6.9390E-11	0.0000E+00

EAB Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.3326E-01	1.1137E+00	3.6815E-01
Accumulated dose (rem)	4.3756E-01	1.5005E+00	4.8468E-01

LPZ Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.7236E-02	1.2444E-01	4.1135E-02
Accumulated dose (rem)	4.8890E-02	1.6765E-01	5.4154E-02

CR Doses:

Time (h) = 8.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.8523E-01	4.8451E+00	3.3711E-01
Accumulated dose (rem)	2.2819E-01	6.3389E+00	4.2726E-01

DW Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	3.6262E-03	1.1404E-10	1.1841E+15	4.3620E+15
Co-60	4.3537E-03	3.8515E-09	3.8657E+16	5.2233E+15
Kr-85	1.3511E+06	3.4437E+00	2.4398E+25	1.2340E+21
Kr-85m	6.4586E+06	7.8481E-04	5.5603E+21	1.0527E+22
Kr-87	5.7076E+05	2.0150E-05	1.3948E+20	5.8581E+21
Kr-88	8.6023E+06	6.8603E-04	4.6947E+21	2.0435E+22
Rb-86	1.2408E-01	1.5250E-09	1.0679E+16	3.1486E+17
Sr-89	6.1391E+00	2.1131E-07	1.4298E+18	7.3930E+18

Sr-90	8.1087E-01	5.9445E-06	3.9776E+19	9.7276E+17
Sr-91	4.2791E+00	1.1805E-09	7.8119E+15	8.3866E+18
Sr-92	1.0331E+00	8.2193E-11	5.3802E+14	6.9588E+18
Y-90	5.9745E-02	1.0981E-10	7.3479E+14	1.0230E+16
Y-91	8.4766E-02	3.4564E-09	2.2874E+16	9.3845E+16
Y-92	1.5289E+00	1.5889E-10	1.0401E+15	1.1548E+17
Y-93	5.1007E-02	1.5288E-11	9.8998E+13	9.7091E+16
Zr-95	9.5210E-02	4.4319E-09	2.8094E+16	1.1456E+17
Zr-97	6.6632E-02	3.4856E-11	2.1640E+14	1.0532E+17
Nb-95	9.5737E-02	2.4483E-09	1.5520E+16	1.1485E+17
Mo-99	1.1244E+00	2.3445E-09	1.4261E+16	1.4476E+18
Tc-99m	1.0507E+00	1.9982E-10	1.2155E+15	1.2890E+18
Ru-103	1.0550E+00	3.2688E-08	1.9112E+17	1.2718E+18
Ru-105	2.1702E-01	3.2284E-11	1.8516E+14	7.4514E+17
Ru-106	4.6131E-01	1.3789E-07	7.8336E+17	5.5369E+17
Rh-105	6.6790E-01	7.9130E-10	4.5384E+15	8.4917E+17
Sb-127	1.1473E+00	4.2961E-09	2.0371E+16	1.4475E+18
Sb-129	1.0428E+00	1.8544E-10	8.6570E+14	3.6869E+18
Te-127	1.1901E+00	4.5096E-10	2.1384E+15	1.4398E+18
Te-127m	2.0654E-01	2.1897E-08	1.0383E+17	2.4776E+17
Te-129	1.5769E+00	7.5299E-11	3.5152E+14	3.8569E+18
Te-129m	6.7903E-01	2.2540E-08	1.0522E+17	8.1640E+17
Te-131m	2.1281E+00	2.6688E-09	1.2269E+16	2.9819E+18
Te-132	1.7111E+01	5.6362E-08	2.5714E+17	2.1787E+19
I-131	3.1342E+04	2.5281E-04	1.1622E+21	1.7357E+20
I-132	7.5270E+03	7.2921E-07	3.3268E+18	2.2774E+20
I-133	5.1366E+04	4.5344E-05	2.0531E+20	3.4651E+20
I-134	1.3688E+02	5.1311E-09	2.3060E+16	2.0781E+20
I-135	2.7389E+04	7.7989E-06	3.4790E+19	2.9932E+20
Xe-133	1.3923E+08	7.4385E-01	3.3681E+24	1.2958E+23
Xe-135	3.7849E+07	1.4821E-02	6.6114E+22	4.5222E+22
Cs-134	1.3739E+01	1.0619E-05	4.7722E+19	3.4482E+19
Cs-136	4.0396E+00	5.5118E-08	2.4406E+17	1.0299E+19
Cs-137	1.1059E+01	1.2714E-04	5.5888E+20	2.7749E+19
Ba-139	1.7545E-01	1.0726E-11	4.6471E+13	6.3347E+18
Ba-140	9.3464E+00	1.2767E-07	5.4916E+17	1.1384E+19
La-140	1.0291E+00	1.8515E-09	7.9643E+15	1.2300E+17
La-141	2.1820E-02	3.8584E-12	1.6479E+13	8.5907E+16
La-142	2.4000E-03	1.6765E-13	7.1101E+11	6.0276E+16
Ce-141	2.2355E-01	7.8457E-09	3.3509E+16	2.6940E+17
Ce-143	1.8343E-01	2.7622E-10	1.1632E+15	2.5342E+17
Ce-144	1.8021E-01	5.6501E-08	2.3629E+17	2.1633E+17
Pr-143	8.5766E-02	1.2737E-09	5.3637E+15	1.0116E+17
Nd-147	3.4481E-02	4.2623E-10	1.7461E+15	4.2102E+16
Np-239	2.3166E+00	9.9858E-09	2.5161E+16	3.0179E+18
Pu-238	7.2812E-04	4.2531E-08	1.0762E+17	8.7344E+14
Pu-239	6.3831E-05	1.0269E-06	2.5876E+18	7.6509E+13
Pu-240	1.1944E-04	5.2418E-07	1.3153E+18	1.4329E+14
Pu-241	2.5743E-02	2.4991E-07	6.2447E+17	3.0884E+16
Am-241	1.7278E-05	5.0341E-09	1.2579E+16	2.0691E+13
Cm-242	4.3718E-03	1.3191E-09	3.2825E+15	5.2508E+15
Cm-244	2.8932E-04	3.5761E-09	8.8263E+15	3.4709E+14

DW Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	2.7843E+25	0.0000E+00	
Elemental I (atoms)	4.0774E+19	4.8566E+22	
Organic I (atoms)	1.3622E+21	0.0000E+00	
Aerosols (kg)	1.4691E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		9.5890E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1212E-05
Total I (Ci)			1.1776E+05

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1895E+18
Aerosols (kg)	1.6818E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8343E+17
Organic I (atoms)	0.0000E+00	2.0850E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 8.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.9585E+22
Elemental I (atoms)	0.0000E+00	8.8343E+17
Organic I (atoms)	0.0000E+00	2.0850E+18
Aerosols (kg)	0.0000E+00	8.8359E-04

RB Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	2.0744E-02	6.5237E-10	6.7735E+15	1.8645E+13
Co-60	2.4906E-02	2.2033E-08	2.2114E+17	2.2357E+13
Kr-85	5.7618E+03	1.4686E-02	1.0405E+23	2.6630E+18
Kr-85m	2.7543E+04	3.3469E-06	2.3712E+19	1.8811E+19
Kr-87	2.4341E+03	8.5931E-08	5.9482E+17	6.1852E+18
Kr-88	3.6685E+04	2.9256E-06	2.0021E+19	3.2433E+19
Rb-86	1.4707E+00	1.8075E-08	1.2657E+17	1.4300E+15
Sr-89	3.5120E+01	1.2088E-06	8.1796E+18	3.1584E+16
Sr-90	4.6387E+00	3.4006E-05	2.2754E+20	4.1637E+15
Sr-91	2.4479E+01	6.7529E-09	4.4689E+16	2.8418E+16
Sr-92	5.9101E+00	4.7019E-10	3.0778E+15	1.4281E+16
Y-90	3.7296E-01	6.8550E-10	4.5869E+15	1.8980E+14
Y-91	4.9035E-01	1.9995E-08	1.3232E+17	4.2245E+14
Y-92	9.8996E+00	1.0288E-09	6.7344E+15	8.0106E+15
Y-93	2.9179E-01	8.7459E-11	5.6633E+14	3.3341E+14
Zr-95	5.4466E-01	2.5353E-08	1.6072E+17	4.8963E+14
Zr-97	3.8118E-01	1.9940E-10	1.2379E+15	3.9437E+14
Nb-95	5.4767E-01	1.4006E-08	8.8784E+16	4.9159E+14
Mo-99	6.4324E+00	1.3412E-08	8.1583E+16	5.9839E+15
Tc-99m	6.0106E+00	1.1431E-09	6.9534E+15	5.4524E+15
Ru-103	6.0351E+00	1.8699E-07	1.0933E+18	5.4306E+15
Ru-105	1.2415E+00	1.8469E-10	1.0592E+15	1.9810E+15
Ru-106	2.6389E+00	7.8879E-07	4.4813E+18	2.3693E+15
Rh-105	3.8208E+00	4.5267E-09	2.5962E+16	3.5521E+15
Sb-127	6.5631E+00	2.4576E-08	1.1654E+17	6.0431E+15
Sb-129	5.9655E+00	1.0608E-09	4.9523E+15	9.6852E+15
Te-127	6.8083E+00	2.5798E-09	1.2233E+16	6.1308E+15
Te-127m	1.1815E+00	1.2526E-07	5.9397E+17	1.0605E+15
Te-129	9.0210E+00	4.3076E-10	2.0109E+15	1.1897E+16
Te-129m	3.8844E+00	1.2894E-07	6.0195E+17	3.4916E+15
Te-131m	1.2174E+01	1.5267E-08	7.0184E+16	1.1828E+16
Te-132	9.7887E+01	3.2243E-07	1.4710E+18	9.0552E+16
I-131	8.0023E+02	6.4548E-06	2.9673E+19	7.1024E+17
I-132	2.3262E+02	2.2536E-08	1.0282E+17	4.6492E+17
I-133	1.3118E+03	1.1580E-06	5.2434E+18	1.2959E+18
I-134	3.4958E+00	1.3104E-10	5.8892E+14	1.6515E+17
I-135	6.9947E+02	1.9917E-07	8.8849E+17	9.0821E+17
Xe-133	5.9372E+05	3.1719E-03	1.4362E+22	2.7789E+20
Xe-135	1.6109E+05	6.3080E-05	2.8139E+20	8.9079E+19
Cs-134	1.6284E+02	1.2586E-04	5.6564E+20	1.5746E+17
Cs-136	4.7881E+01	6.5330E-07	2.8928E+18	4.6666E+16
Cs-137	1.3108E+02	1.5070E-03	6.6243E+21	1.2673E+17
Ba-139	1.0037E+00	6.1360E-11	2.6584E+14	7.8017E+15
Ba-140	5.3467E+01	7.3034E-07	3.1416E+18	4.8362E+16
La-140	6.4432E+00	1.1592E-08	4.9864E+16	3.1899E+15
La-141	1.2483E-01	2.2072E-11	9.4271E+13	2.1608E+14
La-142	1.3729E-02	9.5908E-13	4.0674E+12	8.1727E+13
Ce-141	1.2785E+00	4.4870E-08	1.9164E+17	1.1505E+15
Ce-143	1.0493E+00	1.5801E-09	6.6544E+15	1.0121E+15
Ce-144	1.0309E+00	3.2322E-07	1.3517E+18	9.2565E+14
Pr-143	4.9166E-01	7.3013E-09	3.0748E+16	4.3728E+14
Nd-147	1.9725E-01	2.4383E-09	9.9889E+15	1.7864E+14

Np-239	1.3252E+01	5.7125E-08	1.4394E+17	1.2403E+16
Pu-238	4.1653E-03	2.4330E-07	6.1563E+17	3.7387E+12
Pu-239	3.6515E-04	5.8747E-06	1.4803E+19	3.2762E+11
Pu-240	6.8329E-04	2.9986E-06	7.5243E+18	6.1332E+11
Pu-241	1.4727E-01	1.4296E-06	3.5723E+18	1.3219E+14
Am-241	9.8851E-05	2.8801E-08	7.1969E+16	8.8646E+10
Cm-242	2.5009E-02	7.5459E-09	1.8778E+16	2.2462E+13
Cm-244	1.6551E-03	2.0458E-08	5.0492E+16	1.4856E+12

RB Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	1.1874E+23	0.0000E+00	
Elemental I (atoms)	1.5919E+18	0.0000E+00	
Organic I (atoms)	5.9193E+18	0.0000E+00	
Aerosols (kg)	1.6884E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.1000E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.6284E-08
Total I (Ci)			3.0476E+03

DW to RB Transport Group Inventory:

Time (h) = 8.0000	Leakage Transport
Noble gases (atoms)	1.1916E+23
Elemental I (atoms)	1.7434E+18
Organic I (atoms)	6.1895E+18
Aerosols (kg)	1.6818E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 8.0000	Ci	kg	Atoms	Decay
Co-58	5.2795E-10	1.6603E-17	1.7239E+08	3.0542E+05
Co-60	6.3387E-10	5.6076E-16	5.6282E+09	3.6632E+05
Kr-85	2.5149E-01	6.4100E-07	4.5414E+18	8.8468E+13
Kr-85m	1.2022E+00	1.4608E-10	1.0350E+15	5.8476E+14
Kr-87	1.0624E-01	3.7507E-12	2.5962E+13	1.5663E+14
Kr-88	1.6012E+00	1.2769E-10	8.7386E+14	9.6539E+14
Rb-86	3.8656E-08	4.7508E-16	3.3268E+09	2.7947E+07
Sr-89	8.9382E-07	3.0766E-14	2.0818E+11	5.1729E+08
Sr-90	1.1806E-07	8.6547E-13	5.7911E+12	6.8225E+07
Sr-91	6.2301E-07	1.7187E-16	1.1374E+09	4.3782E+08
Sr-92	1.5041E-07	1.1967E-17	7.8332E+07	1.8563E+08
Y-90	9.5193E-09	1.7497E-17	1.1707E+08	3.7284E+06
Y-91	1.2485E-08	5.0908E-16	3.3690E+09	7.0063E+06
Y-92	2.5297E-07	2.6290E-17	1.7209E+08	1.4983E+08
Y-93	7.4262E-09	2.2259E-18	1.4413E+07	5.1561E+06
Zr-95	1.3862E-08	6.4526E-16	4.0903E+09	8.0201E+06
Zr-97	9.7012E-09	5.0747E-18	3.1506E+07	6.2455E+06
Nb-95	1.3939E-08	3.5646E-16	2.2596E+09	8.0549E+06
Mo-99	1.6371E-07	3.4134E-16	2.0763E+09	9.7213E+07
Tc-99m	1.5297E-07	2.9092E-17	1.7697E+08	8.9059E+07
Ru-103	1.5360E-07	4.7591E-15	2.7825E+10	8.8930E+07
Ru-105	3.1596E-08	4.7004E-18	2.6958E+07	2.8310E+07
Ru-106	6.7163E-08	2.0075E-14	1.1405E+11	3.8821E+07
Rh-105	9.7242E-08	1.1521E-16	6.6076E+08	5.7799E+07
Sb-127	1.6703E-07	6.2548E-16	2.9659E+09	9.8417E+07
Sb-129	1.5183E-07	2.6999E-17	1.2604E+08	1.3785E+08
Te-127	1.7328E-07	6.5657E-17	3.1134E+08	1.0032E+08
Te-127m	3.0071E-08	3.1880E-15	1.5117E+10	1.7377E+07
Te-129	2.2959E-07	1.0963E-17	5.1179E+07	1.7734E+08
Te-129m	9.8862E-08	3.2817E-15	1.5320E+10	5.7197E+07
Te-131m	3.0984E-07	3.8856E-16	1.7862E+09	1.9017E+08
Te-132	2.4913E-06	8.2060E-15	3.7438E+10	1.4731E+09
I-131	2.7350E-03	2.2061E-11	1.0141E+14	1.3490E+12

I-132	5.9459E-04	5.7604E-14	2.6280E+11	5.9581E+11
I-133	4.4842E-03	3.9585E-12	1.7924E+13	2.3899E+12
I-134	1.1950E-05	4.4794E-16	2.0131E+09	1.3681E+11
I-135	2.3910E-03	6.8084E-13	3.0371E+12	1.5544E+12
Xe-133	2.5908E+01	1.3841E-07	6.2670E+17	9.2079E+15
Xe-135	6.9866E+00	2.7359E-09	1.2204E+16	2.8388E+15
Cs-134	4.2801E-06	3.3081E-12	1.4867E+13	3.0801E+09
Cs-136	1.2585E-06	1.7171E-14	7.6034E+10	9.1167E+08
Cs-137	3.4453E-06	3.9609E-11	1.7411E+14	2.4790E+09
Ba-139	2.5544E-08	1.5616E-18	6.7658E+06	7.9841E+07
Ba-140	1.3608E-06	1.8588E-14	7.9955E+10	7.9098E+08
La-140	1.6447E-07	2.9590E-16	1.2728E+09	6.3459E+07
La-141	3.1769E-09	5.6175E-19	2.3993E+06	3.0301E+06
La-142	3.4942E-10	2.4409E-20	1.0352E+05	8.7990E+05
Ce-141	3.2538E-08	1.1419E-15	4.8773E+09	1.8840E+07
Ce-143	2.6707E-08	4.0216E-17	1.6936E+08	1.6301E+07
Ce-144	2.6237E-08	8.2261E-15	3.4402E+10	1.5166E+07
Pr-143	1.2514E-08	1.8584E-16	7.8260E+08	7.1830E+06
Nd-147	5.0202E-09	6.2056E-17	2.5422E+08	2.9209E+06
Np-239	3.3728E-07	1.4539E-15	3.6633E+09	2.0120E+08
Pu-238	1.0601E-10	6.1922E-15	1.5668E+10	6.1261E+04
Pu-239	9.2933E-12	1.4951E-13	3.7674E+11	5.3688E+03
Pu-240	1.7390E-11	7.6317E-14	1.9150E+11	1.0050E+04
Pu-241	3.7481E-09	3.6385E-14	9.0918E+10	2.1660E+06
Am-241	2.5158E-12	7.3301E-16	1.8317E+09	1.4529E+03
Cm-242	6.3651E-10	1.9205E-16	4.7791E+08	3.6800E+05
Cm-244	4.2123E-11	5.2066E-16	1.2850E+09	2.4343E+04

CR Transport Group Inventory:

Time (h) = 8.0000	Atmosphere	Sump	
Noble gases (atoms)	5.1822E+18	0.0000E+00	
Elemental I (atoms)	4.5051E+13	0.0000E+00	
Organic I (atoms)	7.6846E+13	0.0000E+00	
Aerosols (kg)	4.4336E-11	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.2427E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.4525E-12
Total I (Ci)			1.0217E-02

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.5826E+18
Elemental I (atoms)	0.0000E+00	2.4374E+14
Organic I (atoms)	0.0000E+00	2.4895E+14
Aerosols (kg)	0.0000E+00	2.3600E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2600E+19
Elemental I (atoms)	6.3804E+14	1.9733E+13
Organic I (atoms)	6.6362E+14	2.0524E+13
Aerosols (kg)	6.1755E-10	1.9100E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 8.0000	Filtered	Transported
Noble gases (atoms)	1.1986E+19	0.0000E+00
Elemental I (atoms)	2.1515E+14	0.0000E+00
Organic I (atoms)	1.8993E+14	0.0000E+00
Aerosols (kg)	2.1075E-10	0.0000E+00

EAB Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3907E+00	9.5871E+00	1.6876E+00
Accumulated dose (rem)	1.8282E+00	1.1088E+01	2.1722E+00

LPZ Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.0411E-01	3.6910E-01	1.1554E-01
Accumulated dose (rem)	1.5300E-01	5.3675E-01	1.6969E-01

CR Doses:

Time (h) = 24.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	3.8680E-01	1.8546E+01	9.6151E-01
Accumulated dose (rem)	6.1500E-01	2.4885E+01	1.3888E+00

DW Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	3.5450E-03	1.1148E-10	1.1575E+15	4.3696E+15
Co-60	4.2831E-03	3.7890E-09	3.8030E+16	5.2325E+15
Kr-85	1.3294E+06	3.3884E+00	2.4006E+25	4.0892E+21
Kr-85m	5.3460E+05	6.4962E-05	4.6025E+20	1.5593E+22
Kr-87	9.1606E+01	3.2340E-09	2.2386E+16	5.9973E+21
Kr-88	1.7048E+05	1.3596E-05	9.3040E+19	2.5017E+22
Rb-86	1.1911E-01	1.4639E-09	1.0251E+16	3.1512E+17
Sr-89	5.9859E+00	2.0604E-07	1.3942E+18	7.4059E+18
Sr-90	7.9787E-01	5.8492E-06	3.9138E+19	9.7447E+17
Sr-91	1.3103E+00	3.6145E-10	2.3920E+15	8.3919E+18
Sr-92	1.6977E-02	1.3506E-12	8.8409E+12	6.9593E+18
Y-90	1.7689E-01	3.2513E-10	2.1756E+15	1.0479E+16
Y-91	9.0958E-02	3.7090E-09	2.4545E+16	9.4033E+16
Y-92	1.6077E-01	1.6708E-11	1.0937E+14	1.1693E+17
Y-93	1.6740E-02	5.0174E-12	3.2490E+13	9.7157E+16
Zr-95	9.3014E-02	4.3297E-09	2.7446E+16	1.1476E+17
Zr-97	3.4016E-02	1.7794E-11	1.1047E+14	1.0542E+17
Nb-95	9.4183E-02	2.4086E-09	1.5268E+16	1.1506E+17
Mo-99	9.3531E-01	1.9501E-09	1.1863E+16	1.4497E+18
Tc-99m	9.3702E-01	1.7820E-10	1.0840E+15	1.2910E+18
Ru-103	1.0260E+00	3.1789E-08	1.8586E+17	1.2741E+18
Ru-105	1.7567E-02	2.6133E-12	1.4989E+13	7.4531E+17
Ru-106	4.5336E-01	1.3551E-07	7.6987E+17	5.5466E+17
Rh-105	5.0027E-01	5.9270E-10	3.3994E+15	8.5041E+17
Sb-127	1.0012E+00	3.7492E-09	1.7778E+16	1.4498E+18
Sb-129	7.8755E-02	1.4005E-11	6.5379E+13	3.6877E+18
Te-127	1.1176E+00	4.2348E-10	2.0081E+15	1.4422E+18
Te-127m	2.0319E-01	2.1541E-08	1.0215E+17	2.4820E+17
Te-129	6.8143E-01	3.2539E-11	1.5190E+14	3.8586E+18
Te-129m	6.6015E-01	2.1913E-08	1.0230E+17	8.1782E+17
Te-131m	1.4469E+00	1.8145E-09	8.3416E+15	2.9857E+18
Te-132	1.4611E+01	4.8128E-08	2.1957E+17	2.1821E+19
I-131	2.9118E+04	2.3487E-04	1.0797E+21	2.3795E+20
I-132	7.6850E+01	7.4451E-09	3.3966E+16	2.3105E+20
I-133	2.9656E+04	2.6179E-05	1.1854E+20	4.3071E+20
I-134	4.3178E-04	1.6186E-14	7.2740E+10	2.0783E+20
I-135	5.0339E+03	1.4334E-06	6.3942E+18	3.2744E+20
Xe-133	1.2546E+08	6.7024E-01	3.0348E+24	4.1128E+23
Xe-135	1.1002E+07	4.3080E-03	1.9217E+22	9.1517E+22
Cs-134	1.3511E+01	1.0443E-05	4.6931E+19	3.4511E+19
Cs-136	3.8373E+00	5.2357E-08	2.3184E+17	1.0308E+19
Cs-137	1.0882E+01	1.2510E-04	5.4992E+20	2.7772E+19
Ba-139	5.5300E-05	3.3808E-15	1.4647E+10	6.3347E+18
Ba-140	8.8693E+00	1.2115E-07	5.2113E+17	1.1404E+19
La-140	2.9554E+00	5.3170E-09	2.2871E+16	1.2724E+17
La-141	1.2773E-03	2.2586E-13	9.6464E+11	8.5923E+16
La-142	1.7742E-06	1.2394E-16	5.2562E+08	6.0277E+16
Ce-141	2.1697E-01	7.6148E-09	3.2523E+16	2.6987E+17
Ce-143	1.2898E-01	1.9422E-10	8.1793E+14	2.5375E+17
Ce-144	1.7704E-01	5.5507E-08	2.3213E+17	2.1671E+17
Pr-143	8.6703E-02	1.2876E-09	5.4223E+15	1.0134E+17
Nd-147	3.2532E-02	4.0213E-10	1.6474E+15	4.2174E+16
Np-239	1.8734E+00	8.0754E-09	2.0348E+16	3.0223E+18
Pu-238	7.1653E-04	4.1854E-08	1.0590E+17	8.7498E+14
Pu-239	6.2919E-05	1.0123E-06	2.5506E+18	7.6644E+13
Pu-240	1.1753E-04	5.1580E-07	1.2943E+18	1.4354E+14
Pu-241	2.5330E-02	2.4589E-07	6.1443E+17	3.0938E+16
Am-241	1.7076E-05	4.9752E-09	1.2432E+16	2.0728E+13

Cm-242	4.2897E-03	1.2943E-09	3.2209E+15	5.2600E+15
Cm-244	2.8467E-04	3.5187E-09	8.6845E+15	3.4770E+14

DW Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump		
Noble gases (atoms)	2.7061E+25	0.0000E+00		
Elemental I (atoms)	3.4945E+19	4.8566E+22		
Organic I (atoms)	1.1675E+21	0.0000E+00		
Aerosols (kg)	1.4446E-04	4.8987E+01		
Dose Effective (Ci/cc)	I-131 (Thyroid)		8.0519E-06	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		8.8209E-06	
Total I (Ci)			6.3885E+04	

DW to RB Transport Group Inventory:
Time (h) = 24.0000 Leakage Transport

Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1204E+18
Organic I (atoms)	1.8784E+19
Aerosols (kg)	1.6832E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2356E+23
Elemental I (atoms)	0.0000E+00	9.9876E+17
Organic I (atoms)	0.0000E+00	5.9379E+18
Aerosols (kg)	0.0000E+00	8.8403E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.2356E+23
Elemental I (atoms)	0.0000E+00	9.9876E+17
Organic I (atoms)	0.0000E+00	5.9379E+18
Aerosols (kg)	0.0000E+00	8.8403E-04

RB Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	2.0645E-02	6.4925E-10	6.7411E+15	6.2751E+13
Co-60	2.4943E-02	2.2066E-08	2.2147E+17	7.5478E+13
Kr-85	1.9163E+04	4.8844E-02	3.4605E+23	2.9909E+19
Kr-85m	7.7063E+03	9.3642E-07	6.6344E+18	5.7133E+19
Kr-87	1.3205E+00	4.6618E-11	3.2269E+14	6.9467E+18
Kr-88	2.4574E+03	1.9598E-07	1.3412E+18	6.3382E+19
Rb-86	1.4360E+00	1.7648E-08	1.2358E+17	4.5273E+15
Sr-89	3.4860E+01	1.1999E-06	8.1191E+18	1.0616E+17
Sr-90	4.6465E+00	3.4063E-05	2.2793E+20	1.4058E+16
Sr-91	7.6305E+00	2.1050E-09	1.3930E+16	5.9224E+16
Sr-92	9.8866E-02	7.8656E-12	5.1486E+13	1.7309E+16
Y-90	1.0564E+00	1.9417E-09	1.2992E+16	1.6937E+15
Y-91	5.3511E-01	2.1820E-08	1.4440E+17	1.5230E+15
Y-92	9.8655E-01	1.0253E-10	6.7112E+14	1.7106E+16
Y-93	9.7486E-02	2.9220E-11	1.8921E+14	7.1114E+14
Zr-95	5.4168E-01	2.5214E-08	1.5984E+17	1.6473E+15
Zr-97	1.9810E-01	1.0363E-10	6.4335E+14	9.9054E+14
Nb-95	5.4849E-01	1.4027E-08	8.8916E+16	1.6594E+15
Mo-99	5.4469E+00	1.1357E-08	6.9084E+16	1.8614E+16
Tc-99m	5.4569E+00	1.0378E-09	6.3127E+15	1.7219E+16
Ru-103	5.9748E+00	1.8513E-07	1.0824E+18	1.8229E+16
Ru-105	1.0230E-01	1.5219E-11	8.7288E+13	2.9536E+15
Ru-106	2.6402E+00	7.8916E-07	4.4834E+18	7.9950E+15
Rh-105	2.9134E+00	3.4517E-09	1.9797E+16	1.0730E+16
Sb-127	5.8309E+00	2.1834E-08	1.0353E+17	1.9235E+16
Sb-129	4.5864E-01	8.1559E-11	3.8074E+14	1.4260E+16
Te-127	6.5085E+00	2.4662E-09	1.1694E+16	1.9977E+16
Te-127m	1.1833E+00	1.2545E-07	5.9486E+17	3.5805E+15
Te-129	3.9684E+00	1.8949E-10	8.8461E+14	2.1903E+16
Te-129m	3.8445E+00	1.2762E-07	5.9575E+17	1.1730E+16

Te-131m	8.4264E+00	1.0567E-08	4.8578E+16	3.3537E+16
Te-132	8.5091E+01	2.8028E-07	1.2787E+18	2.8522E+17
I-131	1.0495E+03	8.4656E-06	3.8917E+19	2.7023E+18
I-132	1.0273E+02	9.9522E-09	4.5404E+16	7.2420E+17
I-133	1.0686E+03	9.4336E-07	4.2715E+18	3.8654E+18
I-134	1.5559E-05	5.8324E-16	2.6212E+09	1.6576E+17
I-135	1.8140E+02	5.1652E-08	2.3041E+17	1.7389E+18
Xe-133	1.8085E+06	9.6616E-03	4.3747E+22	2.9442E+21
Xe-135	1.5864E+05	6.2120E-05	2.7711E+20	4.8245E+20
Cs-134	1.6288E+02	1.2589E-04	5.6577E+20	5.0456E+17
Cs-136	4.6260E+01	6.3119E-07	2.7949E+18	1.4698E+17
Cs-137	1.3118E+02	1.5082E-03	6.6295E+21	4.0620E+17
Ba-139	3.2204E-04	1.9689E-14	8.5300E+10	8.0675E+15
Ba-140	5.1652E+01	7.0554E-07	3.0349E+18	1.6037E+17
La-140	1.7633E+01	3.1724E-08	1.3646E+17	2.8755E+16
La-141	7.4386E-03	1.3153E-12	5.6177E+12	3.0479E+14
La-142	1.0332E-05	7.2178E-16	3.0610E+09	8.5793E+13
Ce-141	1.2632E+00	4.4333E-08	1.8935E+17	3.8592E+15
Ce-143	7.5113E-01	1.1311E-09	4.7633E+15	2.9131E+15
Ce-144	1.0310E+00	3.2325E-07	1.3519E+18	3.1229E+15
Pr-143	5.0591E-01	7.5129E-09	3.1639E+16	1.5008E+15
Nd-147	1.8945E-01	2.3418E-09	9.5938E+15	5.9067E+14
Np-239	1.0910E+01	4.7028E-08	1.1850E+17	3.8071E+16
Pu-238	4.1728E-03	2.4374E-07	6.1674E+17	1.2624E+13
Pu-239	3.6642E-04	5.8951E-06	1.4854E+19	1.1072E+12
Pu-240	6.8448E-04	3.0038E-06	7.5373E+18	2.0709E+12
Pu-241	1.4751E-01	1.4320E-06	3.5782E+18	4.4632E+14
Am-241	9.9454E-05	2.8977E-08	7.2408E+16	2.9995E+11
Cm-242	2.4982E-02	7.5376E-09	1.8757E+16	7.5735E+13
Cm-244	1.6578E-03	2.0492E-08	5.0576E+16	5.0160E+12

RB Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	3.9008E+23	0.0000E+00	
Elemental I (atoms)	1.7407E+18	0.0000E+00	
Organic I (atoms)	1.6936E+19	0.0000E+00	
Aerosols (kg)	1.6888E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.6753E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0350E-08
Total I (Ci)			2.4023E+03

DW to RB Transport Group Inventory:

Time (h) = 24.0000	Leakage Transport
Noble gases (atoms)	3.9365E+23
Elemental I (atoms)	2.1204E+18
Organic I (atoms)	1.8784E+19
Aerosols (kg)	1.6832E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 24.0000	Ci	kg	Atoms	Decay
Co-58	9.6216E-11	3.0259E-18	3.1418E+07	6.8445E+05
Co-60	1.1625E-10	1.0284E-16	1.0322E+09	8.2252E+05
Kr-85	3.6570E-01	9.3211E-07	6.6039E+18	6.4475E+14
Kr-85m	1.4706E-01	1.7870E-11	1.2661E+14	1.4121E+15
Kr-87	2.5200E-05	8.8964E-16	6.1581E+09	1.7614E+14
Kr-88	4.6897E-02	3.7400E-12	2.5594E+13	1.6615E+15
Rb-86	6.2833E-09	7.7221E-17	5.4074E+08	5.4020E+07
Sr-89	1.6247E-07	5.5923E-15	3.7840E+10	1.1583E+09
Sr-90	2.1655E-08	1.5876E-13	1.0623E+12	1.5320E+08
Sr-91	3.5562E-08	9.8103E-18	6.4922E+07	7.3742E+08
Sr-92	4.6077E-10	3.6658E-20	2.3996E+05	2.2323E+08

Y-90	4.9207E-09	9.0444E-18	6.0518E+07	1.5337E+07
Y-91	2.4934E-09	1.0167E-16	6.7283E+08	1.6368E+07
Y-92	4.5927E-09	4.7730E-19	3.1243E+06	2.4749E+08
Y-93	4.5434E-10	1.3618E-19	8.8182E+05	8.8037E+06
Zr-95	2.5245E-09	1.1751E-16	7.4493E+08	1.7969E+07
Zr-97	9.2325E-10	4.8296E-19	2.9984E+06	1.1741E+07
Nb-95	2.5563E-09	6.5372E-17	4.1440E+08	1.8084E+07
Mo-99	2.5386E-08	5.2930E-17	3.2197E+08	2.0768E+08
Tc-99m	2.5432E-08	4.8366E-18	2.9421E+07	1.9189E+08
Ru-103	2.7846E-08	8.6280E-16	5.0446E+09	1.9898E+08
Ru-105	4.7679E-10	7.0930E-20	4.0681E+05	3.9036E+07
Ru-106	1.2305E-08	3.6780E-15	2.0895E+10	8.7139E+07
Rh-105	1.3578E-08	1.6087E-17	9.2264E+07	1.2128E+08
Sb-127	2.7175E-08	1.0176E-16	4.8253E+08	2.1320E+08
Sb-129	2.1375E-09	3.8011E-19	1.7745E+06	1.8860E+08
Te-127	3.0333E-08	1.1494E-17	5.4502E+07	2.2039E+08
Te-127m	5.5149E-09	5.8466E-16	2.7724E+09	3.9019E+07
Te-129	1.8495E-08	8.8314E-19	4.1228E+06	2.7530E+08
Te-129m	1.7917E-08	5.9476E-16	2.7765E+09	1.2804E+08
Te-131m	3.9272E-08	4.9250E-17	2.2640E+08	3.8423E+08
Te-132	3.9657E-07	1.3063E-15	5.9595E+09	3.1708E+09
I-131	2.4589E-03	1.9834E-11	9.1177E+13	5.6212E+12
I-132	4.8976E-05	4.7448E-15	2.1647E+10	8.7847E+11
I-133	2.5041E-03	2.2105E-12	1.0009E+13	7.8653E+12
I-135	4.2505E-04	1.2103E-13	5.3991E+11	3.3044E+12
Xe-133	3.4511E+01	1.8437E-07	8.3482E+17	6.3725E+16
Xe-135	3.0252E+00	1.1846E-09	5.2844E+15	1.1048E+16
Cs-134	7.1271E-07	5.5085E-13	2.4756E+12	5.9937E+09
Cs-136	2.0242E-07	2.7618E-15	1.2230E+10	1.7571E+09
Cs-137	5.7401E-07	6.5993E-12	2.9008E+13	4.8248E+09
Ba-140	2.4073E-07	3.2882E-15	1.4144E+10	1.7567E+09
La-140	8.2138E-08	1.4778E-16	6.3566E+08	2.6155E+08
La-141	3.4668E-11	6.1301E-21	2.6182E+04	4.0352E+06
Ce-141	5.8873E-09	2.0662E-16	8.8248E+08	4.2137E+07
Ce-143	3.5007E-09	5.2715E-18	2.2200E+07	3.3233E+07
Ce-144	4.8051E-09	1.5065E-15	6.3004E+09	3.4039E+07
Pr-143	2.3577E-09	3.5013E-17	1.4745E+08	1.6291E+07
Nd-147	8.8295E-10	1.0914E-17	4.4713E+07	6.4755E+06
Np-239	5.0848E-08	2.1918E-16	5.5227E+08	4.2639E+08
Pu-238	1.9448E-11	1.1360E-15	2.8744E+09	1.3757E+05
Pu-239	1.7077E-12	2.7474E-14	6.9228E+10	1.2062E+04
Pu-240	3.1900E-12	1.4000E-14	3.5128E+10	2.2567E+04
Pu-241	6.8748E-10	6.6738E-15	1.6677E+10	4.8637E+06
Am-241	4.6351E-13	1.3505E-16	3.3746E+08	3.2666E+03
Cm-242	1.1643E-10	3.5129E-17	8.7419E+07	8.2563E+05
Cm-244	7.7265E-12	9.5503E-17	2.3571E+08	5.4661E+04

CR Transport Group Inventory:

Time (h) = 24.0000	Atmosphere	Sump	
Noble gases (atoms)	7.4441E+18	0.0000E+00	
Elemental I (atoms)	8.3895E+12	0.0000E+00	
Organic I (atoms)	9.3249E+13	0.0000E+00	
Aerosols (kg)	7.4037E-12	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0099E-12
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1068E-12
Total I (Ci)			5.4370E-03

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.5113E+19
Elemental I (atoms)	0.0000E+00	4.0625E+14
Organic I (atoms)	0.0000E+00	1.1938E+15
Aerosols (kg)	0.0000E+00	3.9310E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 24.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.9059E+19
Elemental I (atoms)	1.0715E+15	3.3140E+13

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Organic I (atoms)      3.1840E+15  9.8473E+13
Aerosols (kg)          1.0366E-09  3.2061E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    8.6649E+19  0.0000E+00
Elemental I (atoms)    4.2561E+14  0.0000E+00
Organic I (atoms)      1.1867E+15  0.0000E+00
Aerosols (kg)          4.1773E-10  0.0000E+00

EAB Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.6126E-01  8.6748E+00  9.2765E-01
Accumulated dose (rem)  2.4895E+00  1.9762E+01  3.0999E+00

LPZ Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0651E-02  1.7802E-01  2.6117E-02
Accumulated dose (rem)  1.7365E-01  7.1478E-01  1.9581E-01

CR Doses:

Time (h) =  48.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.4277E-02  7.5356E+00  3.1575E-01
Accumulated dose (rem)  6.9927E-01  3.2421E+01  1.7045E+00

DW Compartment Nuclide Inventory:

Time (h) =  48.0000       Ci           kg          Atoms       Decay
Co-58                  3.4683E-03  1.0907E-10  1.1325E+15  4.3809E+15
Co-60                  4.2301E-03  3.7421E-09  3.7560E+16  5.2461E+15
Kr-85                  1.3132E+06  3.3471E+00  2.3714E+25  8.3120E+21
Kr-85m                 1.2886E+04  1.5658E-06  1.1094E+19  1.6041E+22
Kr-87                  1.8853E-04  6.6557E-15  4.6071E+10  5.9973E+21
Kr-88                  4.8140E+02  3.8391E-08  2.6273E+17  2.5109E+22
Rb-86                  1.1339E-01  1.3936E-09  9.7584E+15  3.1549E+17
Sr-89                  5.8334E+00  2.0079E-07  1.3586E+18  7.4248E+18
Sr-90                  7.8823E-01  5.7785E-06  3.8665E+19  9.7700E+17
Sr-91                  2.2470E-01  6.1987E-11  4.1022E+14  8.3939E+18
Sr-92                  3.6195E-05  2.8796E-15  1.8849E+10  6.9594E+18
Y-90                   3.1617E-01  5.8113E-10  3.8885E+15  1.1264E+16
Y-91                   9.1824E-02  3.7443E-09  2.4779E+16  9.4327E+16
Y-92                   1.8661E-03  1.9394E-13  1.2695E+12  1.1705E+17
Y-93                   3.1855E-03  9.5480E-13  6.1827E+12  9.7183E+16
Zr-95                  9.0906E-02  4.2316E-09  2.6824E+16  1.1506E+17
Zr-97                  1.2559E-02  6.5694E-12  4.0785E+13  1.0549E+17
Nb-95                  9.3002E-02  2.3784E-09  1.5077E+16  1.1536E+17
Mo-99                  7.1819E-01  1.4974E-09  9.1089E+15  1.4524E+18
Tc-99m                 7.3496E-01  1.3977E-10  8.5023E+14  1.2936E+18
Ru-103                 9.9590E-01  3.0858E-08  1.8042E+17  1.2773E+18
Ru-105                 4.0950E-04  6.0920E-14  3.4940E+11  7.4532E+17
Ru-106                 4.4707E-01  1.3363E-07  7.5919E+17  5.5610E+17
Rh-105                 3.1029E-01  3.6761E-10  2.1084E+15  8.5169E+17
Sb-127                 8.2623E-01  3.0939E-09  1.4671E+16  1.4527E+18
Sb-129                 1.6544E-03  2.9420E-13  1.3734E+12  3.6878E+18
Te-127                 9.7995E-01  3.7132E-10  1.7607E+15  1.4454E+18
Te-127m                2.0051E-01  2.1257E-08  1.0080E+17  2.4884E+17
Te-129                 5.5487E-01  2.6495E-11  1.2369E+14  3.8600E+18
Te-129m                6.3899E-01  2.1211E-08  9.9020E+16  8.1990E+17
Te-131m                8.2106E-01  1.0297E-09  4.7334E+15  2.9892E+18
Te-132                 1.1669E+01  3.8438E-08  1.7536E+17  2.1863E+19
I-131                  2.6392E+04  2.1288E-04  9.7864E+20  3.2658E+20
I-132                  1.3971E+01  1.3535E-09  6.1750E+15  2.3112E+20
I-133                  1.3168E+04  1.1624E-05  5.2634E+19  4.9562E+20
I-135                  4.0147E+02  1.1432E-07  5.0996E+17  3.3329E+20
Xe-133                 1.0861E+08  5.8023E-01  2.6272E+24  7.8467E+23
Xe-135                 1.7444E+06  6.8307E-04  3.0470E+21  1.0758E+23
Cs-134                 1.3336E+01  1.0308E-05  4.6324E+19  3.4554E+19
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Cs-136	3.5958E+00	4.9062E-08	2.1725E+17	1.0320E+19
Cs-137	1.0750E+01	1.2359E-04	5.4328E+20	2.7807E+19
Ba-139	3.1321E-10	1.9148E-20	8.2960E+04	6.3347E+18
Ba-140	8.2987E+00	1.1336E-07	4.8761E+17	1.1431E+19
La-140	4.8373E+00	8.7028E-09	3.7435E+16	1.3973E+17
La-141	1.8310E-05	3.2377E-15	1.3828E+10	8.5924E+16
La-142	3.6095E-11	2.5215E-21	1.0693E+04	6.0277E+16
Ce-141	2.0985E-01	7.3647E-09	3.1455E+16	2.7056E+17
Ce-143	7.6974E-02	1.1591E-10	4.8813E+14	2.5407E+17
Ce-144	1.7449E-01	5.4707E-08	2.2878E+17	2.1727E+17
Pr-143	8.6375E-02	1.2827E-09	5.4018E+15	1.0162E+17
Nd-147	3.0174E-02	3.7299E-10	1.5280E+15	4.2274E+16
Np-239	1.3790E+00	5.9441E-09	1.4978E+16	3.0275E+18
Pu-238	7.0800E-04	4.1356E-08	1.0464E+17	8.7726E+14
Pu-239	6.2289E-05	1.0021E-06	2.5251E+18	7.6844E+13
Pu-240	1.1612E-04	5.0960E-07	1.2787E+18	1.4391E+14
Pu-241	2.5022E-02	2.4290E-07	6.0697E+17	3.1019E+16
Am-241	1.6980E-05	4.9474E-09	1.2363E+16	2.0782E+13
Cm-242	4.2202E-03	1.2733E-09	3.1686E+15	5.2736E+15
Cm-244	2.8122E-04	3.4761E-09	8.5793E+15	3.4860E+14

DW Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	2.6344E+25	0.0000E+00	
Elemental I (atoms)	2.9930E+19	4.8566E+22	
Organic I (atoms)	9.9990E+20	0.0000E+00	
Aerosols (kg)	1.4262E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		6.7323E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		7.0502E-06
Total I (Ci)			3.9976E+04

DW to RB Transport Group Inventory:

Time (h) = 48.0000 Leakage Transport

Noble gases (atoms)	5.9392E+23
Elemental I (atoms)	2.3630E+18
Organic I (atoms)	2.6889E+19
Aerosols (kg)	1.6843E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

Time (h) = 48.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8483E+23
Elemental I (atoms)	0.0000E+00	1.0730E+18
Organic I (atoms)	0.0000E+00	8.4175E+18
Aerosols (kg)	0.0000E+00	8.8436E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 48.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.8483E+23
Elemental I (atoms)	0.0000E+00	1.0730E+18
Organic I (atoms)	0.0000E+00	8.4175E+18
Aerosols (kg)	0.0000E+00	8.8436E-04

RB Compartment Nuclide Inventory:

Time (h) = 48.0000	Ci	kg	Atoms	Decay
Co-58	2.0470E-02	6.4375E-10	6.6840E+15	1.2847E+14
Co-60	2.4966E-02	2.2086E-08	2.2168E+17	1.5525E+14
Kr-85	2.9068E+04	7.4091E-02	5.2492E+23	1.0769E+20
Kr-85m	2.8524E+02	3.4661E-08	2.4557E+17	6.4498E+19
Kr-87	4.1732E-06	1.4733E-16	1.0198E+09	6.9471E+18
Kr-88	1.0656E+01	8.4982E-10	5.8156E+15	6.4851E+19
Rb-86	1.3845E+00	1.7015E-08	1.1915E+17	9.0350E+15
Sr-89	3.4429E+01	1.1851E-06	8.0187E+18	2.1691E+17
Sr-90	4.6521E+00	3.4105E-05	2.2820E+20	2.8922E+16
Sr-91	1.3262E+00	3.6585E-10	2.4211E+15	7.0741E+16
Sr-92	2.1363E-04	1.6996E-14	1.1125E+11	1.7360E+16
Y-90	1.8863E+00	3.4670E-09	2.3199E+16	6.3734E+15

Y-91	5.4729E-01	2.2316E-08	1.4768E+17	3.2599E+15
Y-92	1.1472E-02	1.1922E-12	7.8038E+12	1.7821E+16
Y-93	1.8801E-02	5.6352E-12	3.6491E+13	8.6398E+14
Zr-95	5.3653E-01	2.4975E-08	1.5832E+17	3.3707E+15
Zr-97	7.4121E-02	3.8773E-11	2.4072E+14	1.3937E+15
Nb-95	5.4890E-01	1.4037E-08	8.8983E+16	3.4128E+15
Mo-99	4.2388E+00	8.8379E-09	5.3761E+16	3.4015E+16
Tc-99m	4.3377E+00	8.2494E-10	5.0181E+15	3.2074E+16
Ru-103	5.8778E+00	1.8212E-07	1.0648E+18	3.7174E+16
Ru-105	2.4169E-03	3.5955E-13	2.0621E+12	3.0389E+15
Ru-106	2.6386E+00	7.8869E-07	4.4807E+18	1.6433E+16
Rh-105	1.8313E+00	2.1697E-09	1.2444E+16	1.8189E+16
Sb-127	4.8764E+00	1.8260E-08	8.6587E+16	3.6305E+16
Sb-129	9.7642E-03	1.7364E-12	8.1059E+12	1.4633E+16
Te-127	5.7837E+00	2.1915E-09	1.0392E+16	3.8998E+16
Te-127m	1.1834E+00	1.2546E-07	5.9491E+17	7.3634E+15
Te-129	3.2748E+00	1.5637E-10	7.3001E+14	3.0259E+16
Te-129m	3.7713E+00	1.2519E-07	5.8442E+17	2.3904E+16
Te-131m	4.8459E+00	6.0771E-09	2.7937E+16	5.4227E+16
Te-132	6.8873E+01	2.2686E-07	1.0350E+18	5.3041E+17
I-131	1.1624E+03	9.3760E-06	4.3102E+19	6.2598E+18
I-132	8.2209E+01	7.9643E-09	3.6335E+16	9.7855E+17
I-133	5.7964E+02	5.1168E-07	2.3169E+18	6.4390E+18
I-135	1.7672E+01	5.0322E-09	2.2448E+16	1.9652E+18
Xe-133	2.4042E+06	1.2844E-02	5.8157E+22	9.7908E+21
Xe-135	3.8642E+04	1.5131E-05	6.7499E+19	7.6065E+20
Cs-134	1.6283E+02	1.2585E-04	5.6560E+20	1.0252E+18
Cs-136	4.3903E+01	5.9903E-07	2.6525E+18	2.9106E+17
Cs-137	1.3126E+02	1.5090E-03	6.6332E+21	8.2570E+17
Ba-139	1.8486E-09	1.1301E-19	4.8963E+05	8.0676E+15
Ba-140	4.8979E+01	6.6904E-07	2.8779E+18	3.2119E+17
La-140	2.8829E+01	5.1867E-08	2.2311E+17	1.0315E+17
La-141	1.0807E-04	1.9109E-14	8.1614E+10	3.1033E+14
La-142	2.1303E-10	1.4882E-20	6.3113E+04	8.5796E+13
Ce-141	1.2382E+00	4.3455E-08	1.8560E+17	7.8575E+15
Ce-143	4.5430E-01	6.8410E-10	2.8809E+15	4.8004E+15
Ce-144	1.0298E+00	3.2288E-07	1.3503E+18	6.4171E+15
Pr-143	5.1072E-01	7.5844E-09	3.1940E+16	3.1279E+15
Nd-147	1.7809E-01	2.2014E-09	9.0184E+15	1.1780E+15
Np-239	8.1388E+00	3.5082E-08	8.8398E+16	6.8304E+16
Pu-238	4.1786E-03	2.4408E-07	6.1760E+17	2.5973E+13
Pu-239	3.6763E-04	5.9146E-06	1.4903E+19	2.2805E+12
Pu-240	6.8535E-04	3.0077E-06	7.5470E+18	4.2605E+12
Pu-241	1.4768E-01	1.4336E-06	3.5823E+18	9.1817E+14
Am-241	1.0023E-04	2.9203E-08	7.2972E+16	6.1908E+11
Cm-242	2.4907E-02	7.5152E-09	1.8701E+16	1.5548E+14
Cm-244	1.6598E-03	2.0516E-08	5.0635E+16	1.0319E+13

RB Transport Group Inventory:

Time (h) = 48.0000	Atmosphere	Sump	
Noble gases (atoms)	5.8315E+23	0.0000E+00	
Elemental I (atoms)	1.7353E+18	0.0000E+00	
Organic I (atoms)	2.2232E+19	0.0000E+00	
Aerosols (kg)	1.6888E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.7546E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9391E-08
Total I (Ci)			1.8419E+03

DW to RB Transport Group Inventory:

Time (h) = 48.0000 Leakage Transport	
Noble gases (atoms)	5.9392E+23
Elemental I (atoms)	2.3630E+18
Organic I (atoms)	2.6889E+19
Aerosols (kg)	1.6843E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 48.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00

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Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  48.0000       Ci           kg          Atoms       Decay
Co-58                  1.1323E-11  3.5608E-19  3.6972E+06  7.5345E+05
Co-60                  1.3810E-11  1.2217E-17  1.2262E+08  9.0619E+05
Kr-85                  1.5435E-01  3.9341E-07  2.7873E+18  1.1289E+15
Kr-85m                 1.5146E-03  1.8404E-13  1.3039E+12  1.4661E+15
Kr-88                  5.6582E-05  4.5124E-15  3.0880E+10  1.6731E+15
Rb-86                  7.0890E-10  8.7123E-18  6.1008E+07  5.8449E+07
Sr-89                  1.9044E-08  6.5551E-16  4.4355E+09  1.2747E+09
Sr-90                  2.5733E-09  1.8865E-14  1.2623E+11  1.6879E+08
Sr-91                  7.3358E-10  2.0237E-19  1.3392E+06  7.5207E+08
Y-90                   1.0430E-09  1.9171E-18  1.2828E+07  1.9917E+07
Y-91                   3.0263E-10  1.2340E-17  8.1664E+07  1.8185E+07
Y-93                   1.0400E-11  3.1171E-21  2.0184E+04  8.9961E+06
Zr-95                  2.9678E-10  1.3815E-17  8.7572E+07  1.9779E+07
Zr-97                  4.0999E-11  2.1447E-20  1.3315E+05  1.2214E+07
Nb-95                  3.0362E-10  7.7646E-18  4.9220E+07  1.9923E+07
Mo-99                  2.3447E-09  4.8886E-18  2.9737E+07  2.2431E+08
Tc-99m                 2.3994E-09  4.5631E-19  2.7757E+06  2.0789E+08
Ru-103                 3.2513E-09  1.0074E-16  5.8900E+08  2.1889E+08
Ru-106                 1.4595E-09  4.3626E-16  2.4785E+09  9.5991E+07
Rh-105                 1.0130E-09  1.2001E-18  6.8832E+06  1.2954E+08
Sb-127                 2.6973E-09  1.0100E-17  4.7895E+07  2.3148E+08
Te-127                 3.1992E-09  1.2122E-18  5.7482E+06  2.4061E+08
Te-127m                6.5459E-10  6.9397E-17  3.2907E+08  4.2987E+07
Te-129                 1.8115E-09  8.6497E-20  4.0380E+05  2.8428E+08
Te-129m                2.0861E-09  6.9247E-17  3.2327E+08  1.4084E+08
Te-131m                2.6805E-09  3.3615E-18  1.5453E+07  4.0735E+08
Te-132                 3.8097E-08  1.2549E-16  5.7250E+08  3.4344E+09
I-131                  9.0231E-04  7.2782E-12  3.3458E+13  8.6321E+12
I-132                  3.0485E-06  2.9533E-16  1.3474E+09  9.0463E+11
I-133                  4.5012E-04  3.9735E-13  1.7992E+12  1.0090E+13
I-135                  1.3723E-05  3.9077E-15  1.7432E+10  3.5112E+12
Xe-133                 1.2765E+01  6.8198E-08  3.0880E+17  1.0657E+17
Xe-135                 2.0504E-01  8.0290E-11  3.5816E+14  1.2925E+16
Cs-134                 8.3376E-08  6.4442E-14  2.8961E+11  6.5030E+09
Cs-136                 2.2480E-08  3.0673E-16  1.3582E+09  1.8989E+09
Cs-137                 6.7209E-08  7.7268E-13  3.3965E+12  5.2351E+09
Ba-140                 2.7092E-08  3.7007E-16  1.5919E+09  1.9264E+09
La-140                 1.5942E-08  2.8681E-17  1.2337E+08  3.3510E+08
Ce-141                 6.8489E-10  2.4037E-17  1.0266E+08  4.6340E+07
Ce-143                 2.5129E-10  3.7841E-19  1.5936E+06  3.5330E+07
Ce-144                 5.6964E-10  1.7860E-16  7.4690E+08  3.7495E+07
Pr-143                 2.8248E-10  4.1950E-18  1.7666E+07  1.7995E+07
Nd-147                 9.8509E-11  1.2177E-18  4.9885E+06  7.0960E+06
Np-239                 4.5019E-09  1.9406E-17  4.8897E+07  4.5919E+08
Pu-238                 2.3114E-12  1.3501E-16  3.4162E+08  1.5157E+05
Pu-239                 2.0335E-13  3.2716E-15  8.2436E+09  1.3293E+04
Pu-240                 3.7910E-13  1.6637E-15  4.1745E+09  2.4863E+04
Pu-241                 8.1688E-11  7.9299E-16  1.9815E+09  5.3586E+06
Am-241                 5.5441E-14  1.6153E-17  4.0364E+07  3.6011E+03
Cm-242                 1.3777E-11  4.1570E-18  1.0345E+07  9.0931E+05
Cm-244                 9.1810E-13  1.1348E-17  2.8008E+07  6.0223E+04

CR Transport Group Inventory:
Time (h) =  48.0000    Atmosphere     Sump
Noble gases (atoms)    3.0964E+18  0.0000E+00
Elemental I (atoms)    1.2864E+12  0.0000E+00
Organic I (atoms)      3.3979E+13  0.0000E+00
Aerosols (kg)          8.6676E-13  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          3.4183E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    3.5800E-13
Total I (Ci)                                    1.3692E-03

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) =  48.0000     Filtered   Transported
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Noble gases (atoms)    0.0000E+00  4.1852E+19
Elemental I (atoms)    0.0000E+00  4.4134E+14
Organic I (atoms)      0.0000E+00  1.8720E+15
Aerosols (kg)          0.0000E+00  4.2216E-10

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) =  48.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.1509E+20
Elemental I (atoms)    1.1651E+15  3.6035E+13
Organic I (atoms)      4.9930E+15  1.5442E+14
Aerosols (kg)          1.1141E-09  3.4458E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  48.0000     Filtered   Transported
Noble gases (atoms)    1.5367E+20  0.0000E+00
Elemental I (atoms)    4.7035E+14  0.0000E+00
Organic I (atoms)      1.9743E+15  0.0000E+00
Aerosols (kg)          4.5567E-10  0.0000E+00

EAB Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.9802E-01  7.9808E+00  7.4201E-01
Accumulated dose (rem)  2.9875E+00  2.7743E+01  3.8419E+00

LPZ Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5553E-02  1.6378E-01  2.0560E-02
Accumulated dose (rem)  1.8920E-01  8.7856E-01  2.1637E-01

CR Doses:

Time (h) =  72.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.7528E-02  6.3787E+00  2.5254E-01
Accumulated dose (rem)  7.5680E-01  3.8800E+01  1.9571E+00

DW Compartment Nuclide Inventory:

Time (h) =  72.0000       Ci           kg          Atoms      Decay
Co-58                  3.3932E-03  1.0671E-10  1.1080E+15  4.3918E+15
Co-60                  4.1777E-03  3.6959E-09  3.7095E+16  5.2596E+15
Kr-85                  1.2972E+06  3.3063E+00  2.3425E+25  1.2483E+22
Kr-85m                 3.1061E+02  3.7743E-08  2.6740E+17  1.6052E+22
Kr-87                  3.8799E-10  1.3698E-20  9.4815E+04  5.9973E+21
Kr-88                  1.3594E+00  1.0841E-10  7.4189E+14  2.5110E+22
Rb-86                  1.0794E-01  1.3266E-09  9.2896E+15  3.1584E+17
Sr-89                  5.6847E+00  1.9567E-07  1.3240E+18  7.4432E+18
Sr-90                  7.7871E-01  5.7087E-06  3.8198E+19  9.7951E+17
Sr-91                  3.8536E-02  1.0631E-11  7.0350E+13  8.3942E+18
Sr-92                  7.7171E-08  6.1396E-18  4.0188E+07  6.9594E+18
Y-90                   4.2009E-01  7.7213E-10  5.1665E+15  1.2435E+16
Y-91                   9.0170E-02  3.6768E-09  2.4332E+16  9.4618E+16
Y-92                   1.7677E-05  1.8371E-15  1.2025E+10  1.1705E+17
Y-93                   6.0619E-04  1.8169E-13  1.1766E+12  9.7188E+16
Zr-95                  8.8846E-02  4.1357E-09  2.6216E+16  1.1535E+17
Zr-97                  4.6365E-03  2.4254E-12  1.5058E+13  1.0552E+17
Nb-95                  9.1818E-02  2.3481E-09  1.4885E+16  1.1565E+17
Mo-99                  5.5147E-01  1.1498E-09  6.9944E+15  1.4544E+18
Tc-99m                 5.6531E-01  1.0751E-10  6.5398E+14  1.2955E+18
Ru-103                 9.6672E-01  2.9954E-08  1.7513E+17  1.2804E+18
Ru-105                 9.5459E-06  1.4201E-15  8.1448E+09  7.4532E+17
Ru-106                 4.4087E-01  1.3178E-07  7.4865E+17  5.5752E+17
Rh-105                 1.9155E-01  2.2694E-10  1.3016E+15  8.5247E+17
Sb-127                 6.8180E-01  2.5531E-09  1.2106E+16  1.4551E+18
Sb-129                 3.4754E-05  6.1802E-15  2.8851E+10  3.6878E+18
Te-127                 8.4559E-01  3.2041E-10  1.5193E+15  1.4483E+18
Te-127m                1.9770E-01  2.0959E-08  9.9383E+16  2.4948E+17
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Te-129	5.3480E-01	2.5537E-11	1.1921E+14	3.8613E+18
Te-129m	6.1842E-01	2.0528E-08	9.5833E+16	8.2191E+17
Te-131m	4.6591E-01	5.8428E-10	2.6860E+15	2.9912E+18
Te-132	9.3199E+00	3.0699E-08	1.4005E+17	2.1896E+19
I-131	2.3921E+04	1.9295E-04	8.8701E+20	4.0692E+20
I-132	1.1124E+01	1.0777E-09	4.9168E+15	2.3116E+20
I-133	5.8469E+03	5.1614E-06	2.3371E+19	5.2444E+20
I-135	3.2019E+01	9.1174E-09	4.0671E+16	3.3376E+20
Xe-133	9.4020E+07	5.0229E-01	2.2744E+24	1.1079E+24
Xe-135	2.7651E+05	1.0828E-04	4.8300E+20	1.1013E+23
Cs-134	1.3164E+01	1.0174E-05	4.5725E+19	3.4597E+19
Cs-136	3.3695E+00	4.5974E-08	2.0358E+17	1.0331E+19
Cs-137	1.0620E+01	1.2210E-04	5.3672E+20	2.7841E+19
Ba-140	7.7648E+00	1.0606E-07	4.5624E+17	1.1457E+19
La-140	5.8805E+00	1.0580E-08	4.5509E+16	1.5681E+17
La-141	2.6248E-07	4.6412E-17	1.9823E+08	8.5924E+16
Ce-141	2.0295E-01	7.1227E-09	3.0421E+16	2.7122E+17
Ce-143	4.5937E-02	6.9173E-11	2.9131E+14	2.5427E+17
Ce-144	1.7197E-01	5.3918E-08	2.2549E+17	2.1783E+17
Pr-143	8.4058E-02	1.2483E-09	5.2569E+15	1.0189E+17
Nd-147	2.7988E-02	3.4596E-10	1.4173E+15	4.2367E+16
Np-239	1.0150E+00	4.3754E-09	1.1025E+16	3.0313E+18
Pu-238	6.9956E-04	4.0863E-08	1.0340E+17	8.7951E+14
Pu-239	6.1634E-05	9.9159E-07	2.4985E+18	7.7042E+13
Pu-240	1.1473E-04	5.0348E-07	1.2633E+18	1.4428E+14
Pu-241	2.4718E-02	2.3995E-07	5.9959E+17	3.1098E+16
Am-241	1.6885E-05	4.9196E-09	1.2293E+16	2.0836E+13
Cm-242	4.1517E-03	1.2527E-09	3.1173E+15	5.2870E+15
Cm-244	2.7782E-04	3.4339E-09	8.4753E+15	3.4949E+14

DW Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5700E+25	0.0000E+00	
Elemental I (atoms)	2.6410E+19	4.8566E+22	
Organic I (atoms)	8.8229E+20	0.0000E+00	
Aerosols (kg)	1.4083E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.8612E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		6.0005E-06
Total I (Ci)			2.9811E+04

DW to RB Transport Group Inventory:

Time (h) = 72.0000	Leakage Transport
Noble gases (atoms)	7.8910E+23
Elemental I (atoms)	2.5742E+18
Organic I (atoms)	3.3944E+19
Aerosols (kg)	1.6853E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.4453E+23
Elemental I (atoms)	0.0000E+00	1.1376E+18
Organic I (atoms)	0.0000E+00	1.0576E+19
Aerosols (kg)	0.0000E+00	8.8469E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 72.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.4453E+23
Elemental I (atoms)	0.0000E+00	1.1376E+18
Organic I (atoms)	0.0000E+00	1.0576E+19
Aerosols (kg)	0.0000E+00	8.8469E-04

RB Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	2.0296E-02	6.3828E-10	6.6272E+15	1.9363E+14
Co-60	2.4988E-02	2.2106E-08	2.2188E+17	2.3510E+14
Kr-85	3.8851E+04	9.9026E-02	7.0158E+23	2.1694E+20

Kr-85m	9.3028E+00	1.1304E-09	8.0089E+15	6.4759E+19
Kr-88	4.0714E-02	3.2469E-12	2.2220E+13	6.4857E+19
Rb-86	1.3348E+00	1.6404E-08	1.1487E+17	1.3381E+16
Sr-89	3.4002E+01	1.1704E-06	7.9194E+18	3.2629E+17
Sr-90	4.6577E+00	3.4146E-05	2.2848E+20	4.3803E+16
Sr-91	2.3050E-01	6.3585E-11	4.2079E+14	7.2743E+16
Sr-92	4.6159E-07	3.6723E-17	2.4038E+08	1.7360E+16
Y-90	2.5283E+00	4.6470E-09	3.1094E+16	1.3393E+16
Y-91	5.4461E-01	2.2207E-08	1.4696E+17	5.0065E+15
Y-92	1.0990E-04	1.1421E-14	7.4761E+10	1.7829E+16
Y-93	3.6258E-03	1.0868E-12	7.0374E+12	8.9346E+14
Zr-95	5.3142E-01	2.4737E-08	1.5681E+17	5.0778E+15
Zr-97	2.7733E-02	1.4507E-11	9.0065E+13	1.5446E+15
Nb-95	5.4919E-01	1.4045E-08	8.9031E+16	5.1674E+15
Mo-99	3.2986E+00	6.8775E-09	4.1836E+16	4.6001E+16
Tc-99m	3.3813E+00	6.4305E-10	3.9117E+15	4.3733E+16
Ru-103	5.7823E+00	1.7916E-07	1.0475E+18	5.5812E+16
Ru-105	5.7098E-05	8.4941E-15	4.8717E+10	3.0409E+15
Ru-106	2.6370E+00	7.8820E-07	4.4780E+18	2.4866E+16
Rh-105	1.1457E+00	1.3574E-09	7.7851E+15	2.2863E+16
Sb-127	4.0781E+00	1.5271E-08	7.2412E+16	5.0580E+16
Sb-129	2.0787E-04	3.6966E-14	1.7257E+11	1.4641E+16
Te-127	5.0578E+00	1.9165E-09	9.0876E+15	5.5727E+16
Te-127m	1.1825E+00	1.2536E-07	5.9445E+17	1.1145E+16
Te-129	3.1988E+00	1.5275E-10	7.1307E+14	3.8044E+16
Te-129m	3.6990E+00	1.2279E-07	5.7321E+17	3.5844E+16
Te-131m	2.7868E+00	3.4948E-09	1.6066E+16	6.6125E+16
Te-132	5.5746E+01	1.8362E-07	8.3772E+17	7.2887E+17
I-131	1.2471E+03	1.0059E-05	4.6244E+19	1.0131E+19
I-132	6.6538E+01	6.4462E-09	2.9409E+16	1.1840E+18
I-133	3.0462E+02	2.6891E-07	1.2176E+18	7.8131E+18
I-135	1.6682E+00	4.7501E-10	2.1190E+15	1.9870E+18
Xe-133	2.8160E+06	1.5044E-02	6.8120E+22	1.8229E+22
Xe-135	8.2878E+03	3.2454E-06	1.4477E+19	8.2453E+20
Cs-134	1.6278E+02	1.2581E-04	5.6542E+20	1.5457E+18
Cs-136	4.1666E+01	5.6850E-07	2.5173E+18	4.2781E+17
Cs-137	1.3133E+02	1.5098E-03	6.6368E+21	1.2454E+18
Ba-140	4.6444E+01	6.3441E-07	2.7289E+18	4.7368E+17
La-140	3.5358E+01	6.3613E-08	2.7364E+17	2.0543E+17
La-141	1.5700E-06	2.7761E-16	1.1857E+09	3.1041E+14
Ce-141	1.2136E+00	4.2592E-08	1.8191E+17	1.1776E+16
Ce-143	2.7476E-01	4.1375E-10	1.7424E+15	5.9418E+15
Ce-144	1.0286E+00	3.2250E-07	1.3487E+18	9.7073E+15
Pr-143	5.0367E-01	7.4796E-09	3.1499E+16	4.7505E+15
Nd-147	1.6741E-01	2.0693E-09	8.4774E+15	1.7301E+15
Np-239	6.0713E+00	2.6171E-08	6.5942E+16	9.0857E+16
Pu-238	4.1843E-03	2.4442E-07	6.1845E+17	3.9341E+13
Pu-239	3.6865E-04	5.9311E-06	1.4945E+19	3.4575E+12
Pu-240	6.8622E-04	3.0115E-06	7.5565E+18	6.4528E+12
Pu-241	1.4785E-01	1.4352E-06	3.5864E+18	1.3906E+15
Am-241	1.0100E-04	2.9429E-08	7.3537E+16	9.4070E+11
Cm-242	2.4833E-02	7.4927E-09	1.8645E+16	2.3499E+14
Cm-244	1.6617E-03	2.0540E-08	5.0694E+16	1.5628E+13

RB Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump		
Noble gases (atoms)	7.6972E+23	0.0000E+00		
Elemental I (atoms)	1.7494E+18	0.0000E+00		
Organic I (atoms)	2.6517E+19	0.0000E+00		
Aerosols (kg)	1.6890E-03	0.0000E+00		
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.8690E-08	
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9668E-08	
Total I (Ci)			1.6199E+03	

DW to RB Transport Group Inventory:

Time (h) = 72.0000	Leakage Transport
Noble gases (atoms)	7.8910E+23
Elemental I (atoms)	2.5742E+18
Organic I (atoms)	3.3944E+19
Aerosols (kg)	1.6853E-03

RB toEnvironment Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 72.0000	Ci	kg	Atoms	Decay
Co-58	3.6523E-12	1.1486E-19	1.1926E+06	7.7471E+05
Co-60	4.4967E-12	3.9780E-18	3.9927E+07	9.3221E+05
Kr-85	1.6156E-01	4.1179E-07	2.9175E+18	1.6371E+15
Kr-85m	3.8685E-05	4.7007E-15	3.3304E+10	1.4674E+15
Kr-88	1.6930E-07	1.3502E-17	9.2399E+07	1.6732E+15
Rb-86	2.1965E-10	2.6994E-18	1.8903E+07	5.9758E+07
Sr-89	6.1188E-09	2.1061E-16	1.4251E+09	1.3104E+09
Sr-90	8.3816E-10	6.1445E-15	4.1115E+10	1.7364E+08
Sr-91	4.1478E-11	1.1442E-20	7.5721E+04	7.5283E+08
Y-90	4.5482E-10	8.3597E-19	5.5937E+06	2.2143E+07
Y-91	9.7955E-11	3.9943E-18	2.6433E+07	1.8754E+07
Zr-95	9.5629E-11	4.4514E-18	2.8218E+07	2.0336E+07
Zr-97	4.9905E-12	2.6105E-21	1.6207E+04	1.2268E+07
Nb-95	9.8828E-11	2.5274E-18	1.6021E+07	2.0495E+07
Mo-99	5.9358E-10	1.2376E-18	7.5284E+06	2.2830E+08
Tc-99m	6.0847E-10	1.1572E-19	7.0391E+05	2.1178E+08
Ru-103	1.0405E-09	3.2241E-17	1.8850E+08	2.2497E+08
Ru-106	4.7453E-10	1.4184E-16	8.0581E+08	9.8739E+07
Rh-105	2.0617E-10	2.4426E-19	1.4009E+06	1.3113E+08
Sb-127	7.3386E-10	2.7480E-18	1.3031E+07	2.3620E+08
Te-127	9.1015E-10	3.4487E-19	1.6353E+06	2.4613E+08
Te-127m	2.1279E-10	2.2559E-17	1.0697E+08	4.4219E+07
Te-129	5.7563E-10	2.7487E-20	1.2832E+05	2.8682E+08
Te-129m	6.6564E-10	2.2096E-17	1.0315E+08	1.4474E+08
Te-131m	5.0148E-10	6.2889E-19	2.8910E+06	4.1143E+08
Te-132	1.0031E-08	3.3043E-17	1.5075E+08	3.5003E+09
I-131	8.4925E-04	6.8502E-12	3.1491E+13	1.1434E+13
I-132	8.4745E-07	8.2100E-17	3.7456E+08	9.1086E+11
I-133	2.0755E-04	1.8322E-13	8.2960E+11	1.1092E+13
I-135	1.1366E-06	3.2365E-16	1.4437E+09	3.5274E+12
Xe-133	1.1710E+01	6.2559E-08	2.8326E+17	1.4593E+17
Xe-135	3.4440E-02	1.3486E-11	6.0159E+13	1.3233E+16
Cs-134	2.6786E-08	2.0703E-14	9.3043E+10	6.6593E+09
Cs-136	6.8563E-09	9.3550E-17	4.1424E+08	1.9402E+09
Cs-137	2.1611E-08	2.4845E-13	1.0921E+12	5.3612E+09
Ba-140	8.3577E-09	1.1416E-16	4.9107E+08	1.9763E+09
La-140	6.3610E-09	1.1444E-17	4.9228E+07	3.6780E+08
Ce-141	2.1839E-10	7.6645E-18	3.2735E+07	4.7620E+07
Ce-143	4.9444E-11	7.4455E-20	3.1355E+05	3.5720E+07
Ce-144	1.8510E-10	5.8034E-17	2.4270E+08	3.8567E+07
Pr-143	9.0627E-11	1.3458E-18	5.6677E+06	1.8524E+07
Nd-147	3.0125E-11	3.7238E-19	1.5255E+06	7.2770E+06
Np-239	1.0925E-09	4.7094E-18	1.1866E+07	4.6674E+08
Pu-238	7.5297E-13	4.3983E-17	1.1129E+08	1.5592E+05
Pu-239	6.6339E-14	1.0673E-15	2.6893E+09	1.3676E+04
Pu-240	1.2349E-13	5.4192E-16	1.3598E+09	2.5577E+04
Pu-241	2.6605E-11	2.5827E-16	6.4537E+08	5.5125E+06
Am-241	1.8176E-14	5.2957E-18	1.3233E+07	3.7058E+03
Cm-242	4.4687E-12	1.3483E-18	3.3553E+06	9.3523E+05
Cm-244	2.9903E-13	3.6961E-18	9.1224E+06	6.1953E+04

CR Transport Group Inventory:

Time (h) = 72.0000	Atmosphere	Sump	
Noble gases (atoms)	3.2008E+18	0.0000E+00	
Elemental I (atoms)	5.8294E+11	0.0000E+00	
Organic I (atoms)	3.1736E+13	0.0000E+00	
Aerosols (kg)	2.7869E-13	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.0903E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.1638E-13
Total I (Ci)			1.0588E-03

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	5.9947E+19
Elemental I (atoms)	0.0000E+00	4.5580E+14
Organic I (atoms)	0.0000E+00	2.5263E+15
Aerosols (kg)	0.0000E+00	4.3190E-10

Environment to CR Filtered Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.6485E+20
Elemental I (atoms)	1.2037E+15	3.7228E+13
Organic I (atoms)	6.7384E+15	2.0840E+14
Aerosols (kg)	1.1401E-09	3.5262E-11

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 72.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.2138E+20	0.0000E+00
Elemental I (atoms)	4.8661E+14	0.0000E+00
Organic I (atoms)	2.6811E+15	0.0000E+00
Aerosols (kg)	4.6680E-10	0.0000E+00

EAB Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.2397E-01	7.1581E+00	6.4235E-01
Accumulated dose (rem)	3.4115E+00	3.4901E+01	4.4842E+00

LPZ Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.3240E-02	1.4690E-01	1.7722E-02
Accumulated dose (rem)	2.0244E-01	1.0255E+00	2.3409E-01

CR Doses:

Time (h) = 96.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	4.9089E-02	5.7294E+00	2.2388E-01
Accumulated dose (rem)	8.0589E-01	4.4529E+01	2.1809E+00

DW Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	3.3198E-03	1.0440E-10	1.0840E+15	4.4025E+15
Co-60	4.1260E-03	3.6501E-09	3.6636E+16	5.2728E+15
Kr-85	1.2814E+06	3.2660E+00	2.3139E+25	1.6604E+22
Kr-85m	7.4869E+00	9.0976E-10	6.4455E+15	1.6052E+22
Kr-88	3.8386E-03	3.0613E-13	2.0949E+12	2.5110E+22
Rb-86	1.0276E-01	1.2629E-09	8.8433E+15	3.1618E+17
Sr-89	5.5399E+00	1.9069E-07	1.2903E+18	7.4612E+18
Sr-90	7.6930E-01	5.6397E-06	3.7737E+19	9.8198E+17
Sr-91	6.6087E-03	1.8231E-12	1.2065E+13	8.3943E+18
Sr-92	1.6453E-10	1.3090E-20	8.5685E+04	6.9594E+18
Y-90	4.9709E-01	9.1366E-10	6.1135E+15	1.3894E+16
Y-91	8.8126E-02	3.5935E-09	2.3781E+16	9.4903E+16
Y-92	1.6087E-07	1.6718E-17	1.0943E+08	1.1705E+17
Y-93	1.1536E-04	3.4576E-14	2.2389E+11	9.7189E+16
Zr-95	8.6832E-02	4.0419E-09	2.5622E+16	1.1563E+17
Zr-97	1.7118E-03	8.9542E-13	5.5591E+12	1.0553E+17
Nb-95	9.0631E-02	2.3178E-09	1.4692E+16	1.1594E+17
Mo-99	4.2346E-01	8.8291E-10	5.3707E+15	1.4559E+18
Tc-99m	4.3414E-01	8.2564E-11	5.0223E+14	1.2970E+18
Ru-103	9.3840E-01	2.9076E-08	1.7000E+17	1.2835E+18
Ru-105	2.2253E-07	3.3104E-17	1.8986E+08	7.4532E+17
Ru-106	4.3475E-01	1.2995E-07	7.3827E+17	5.5892E+17
Rh-105	1.1822E-01	1.4007E-10	8.0334E+14	8.5296E+17

Sb-127	5.6263E-01	2.1068E-09	9.9901E+15	1.4570E+18
Sb-129	7.3006E-07	1.2983E-16	6.0607E+08	3.6878E+18
Te-127	7.3075E-01	2.7689E-10	1.3130E+15	1.4507E+18
Te-127m	1.9479E-01	2.0650E-08	9.7920E+16	2.5010E+17
Te-129	5.1754E-01	2.4713E-11	1.1537E+14	3.8626E+18
Te-129m	5.9852E-01	1.9868E-08	9.2748E+16	8.2385E+17
Te-131m	2.6438E-01	3.3155E-10	1.5241E+15	2.9924E+18
Te-132	7.4435E+00	2.4518E-08	1.1186E+17	2.1923E+19
I-131	2.1682E+04	1.7489E-04	8.0397E+20	4.7973E+20
I-132	8.8846E+00	8.6073E-10	3.9268E+15	2.3118E+20
I-133	2.5962E+03	2.2918E-06	1.0377E+19	5.3724E+20
I-135	2.5536E+00	7.2715E-10	3.2437E+15	3.3379E+20
Xe-133	8.1392E+07	4.3483E-01	1.9689E+24	1.3877E+24
Xe-135	4.3824E+04	1.7161E-05	7.6552E+19	1.1053E+23
Cs-134	1.2994E+01	1.0043E-05	4.5134E+19	3.4638E+19
Cs-136	3.1574E+00	4.3081E-08	1.9076E+17	1.0341E+19
Cs-137	1.0492E+01	1.2062E-04	5.3023E+20	2.7875E+19
Ba-140	7.2653E+00	9.9241E-08	4.2689E+17	1.1481E+19
La-140	6.3875E+00	1.1492E-08	4.9433E+16	1.7632E+17
La-141	3.7626E-09	6.6532E-19	2.8416E+06	8.5924E+16
Ce-141	1.9628E-01	6.8886E-09	2.9421E+16	2.7185E+17
Ce-143	2.7414E-02	4.1282E-11	1.7385E+14	2.5438E+17
Ce-144	1.6949E-01	5.3140E-08	2.2223E+17	2.1837E+17
Pr-143	8.0684E-02	1.1982E-09	5.0459E+15	1.0216E+17
Nd-147	2.5960E-02	3.2090E-10	1.3146E+15	4.2453E+16
Np-239	7.4715E-01	3.2206E-09	8.1150E+15	3.0341E+18
Pu-238	6.9123E-04	4.0376E-08	1.0216E+17	8.8173E+14
Pu-239	6.0962E-05	9.8078E-07	2.4713E+18	7.7238E+13
Pu-240	1.1335E-04	4.9743E-07	1.2482E+18	1.4465E+14
Pu-241	2.4418E-02	2.3704E-07	5.9231E+17	3.1177E+16
Am-241	1.6789E-05	4.8917E-09	1.2223E+16	2.0890E+13
Cm-242	4.0844E-03	1.2324E-09	3.0667E+15	5.3002E+15
Cm-244	2.7445E-04	3.3923E-09	8.3726E+15	3.5038E+14

DW Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	2.5108E+25	0.0000E+00	
Elemental I (atoms)	2.3623E+19	4.8566E+22	
Organic I (atoms)	7.8918E+20	0.0000E+00	
Aerosols (kg)	1.3906E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		5.2063E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		5.2681E-06
Total I (Ci)			2.4289E+04

DW to RB Transport Group Inventory:

Time (h) = 96.0000	Leakage Transport
Noble gases (atoms)	9.7965E+23
Elemental I (atoms)	2.7618E+18
Organic I (atoms)	4.0214E+19
Aerosols (kg)	1.6864E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 96.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	3.0283E+23
Elemental I (atoms)	0.0000E+00	1.1950E+18
Organic I (atoms)	0.0000E+00	1.2494E+19
Aerosols (kg)	0.0000E+00	8.8501E-04

RB Compartment Nuclide Inventory:

Time (h) = 96.0000	Ci	kg	Atoms	Decay
Co-58	2.0123E-02	6.3285E-10	6.5709E+15	2.5824E+14
Co-60	2.5011E-02	2.2126E-08	2.2207E+17	3.1502E+14
Kr-85	4.8513E+04	1.2365E-01	8.7606E+23	3.5726E+20
Kr-85m	2.8345E-01	3.4444E-11	2.4403E+14	6.4767E+19
Kr-88	1.4533E-04	1.1590E-14	7.9315E+10	6.4857E+19
Rb-86	1.2869E+00	1.5816E-08	1.1075E+17	1.7571E+16
Sr-89	3.3581E+01	1.1559E-06	7.8212E+18	4.3432E+17
Sr-90	4.6632E+00	3.4186E-05	2.2875E+20	5.8702E+16
Sr-91	4.0060E-02	1.1051E-11	7.3132E+13	7.3091E+16
Sr-92	9.9734E-10	7.9347E-20	5.1939E+05	1.7360E+16
Y-90	3.0252E+00	5.5603E-09	3.7206E+16	2.2223E+16
Y-91	5.3940E-01	2.1995E-08	1.4556E+17	6.7394E+15
Y-92	1.0130E-06	1.0528E-16	6.8914E+08	1.7829E+16
Y-93	6.9925E-04	2.0959E-13	1.3572E+12	8.9914E+14
Zr-95	5.2635E-01	2.4501E-08	1.5531E+17	6.7685E+15
Zr-97	1.0376E-02	5.4277E-12	3.3697E+13	1.6010E+15
Nb-95	5.4937E-01	1.4049E-08	8.9060E+16	6.9227E+15
Mo-99	2.5668E+00	5.3519E-09	3.2555E+16	5.5327E+16
Tc-99m	2.6316E+00	5.0047E-10	3.0444E+15	5.2812E+16
Ru-103	5.6883E+00	1.7625E-07	1.0305E+18	7.4146E+16
Ru-105	1.3489E-06	2.0066E-16	1.1509E+09	3.0409E+15
Ru-106	2.6353E+00	7.8770E-07	4.4751E+18	3.3293E+16
Rh-105	7.1663E-01	8.4904E-10	4.8695E+15	2.5786E+16
Sb-127	3.4104E+00	1.2771E-08	6.0557E+16	6.2518E+16
Sb-129	4.4254E-06	7.8696E-16	3.6738E+09	1.4641E+16
Te-127	4.4295E+00	1.6784E-09	7.9588E+15	7.0357E+16
Te-127m	1.1807E+00	1.2517E-07	5.9356E+17	1.4922E+16
Te-129	3.1372E+00	1.4980E-10	6.9931E+14	4.5671E+16
Te-129m	3.6280E+00	1.2043E-07	5.6220E+17	4.7556E+16
Te-131m	1.6026E+00	2.0097E-09	9.2388E+15	7.2968E+16
Te-132	4.5120E+01	1.4862E-07	6.7803E+17	8.8950E+17
I-131	1.3078E+03	1.0549E-05	4.8495E+19	1.4232E+19
I-132	5.3855E+01	5.2174E-09	2.3803E+16	1.3502E+18
I-133	1.5649E+02	1.3815E-07	6.2552E+17	8.5272E+18
I-135	1.5393E-01	4.3831E-11	1.9553E+14	1.9891E+18
Xe-133	3.0816E+06	1.6463E-02	7.4544E+22	2.7734E+22
Xe-135	1.6603E+03	6.5016E-07	2.9003E+18	8.3783E+20
Cs-134	1.6273E+02	1.2577E-04	5.6524E+20	2.0660E+18
Cs-136	3.9543E+01	5.3953E-07	2.3891E+18	5.5758E+17
Cs-137	1.3140E+02	1.5107E-03	6.6404E+21	1.6654E+18
Ba-140	4.4040E+01	6.0156E-07	2.5876E+18	6.1828E+17
La-140	3.8841E+01	6.9880E-08	3.0059E+17	3.2343E+17
La-141	2.2808E-08	4.0329E-18	1.7225E+07	3.1041E+14
Ce-141	1.1895E+00	4.1745E-08	1.7829E+17	1.5617E+16
Ce-143	1.6618E-01	2.5024E-10	1.0538E+15	6.6321E+15
Ce-144	1.0274E+00	3.2212E-07	1.3471E+18	1.2994E+16
Pr-143	4.8992E-01	7.2755E-09	3.0639E+16	6.3392E+15
Nd-147	1.5736E-01	1.9452E-09	7.9687E+15	2.2490E+15
Np-239	4.5290E+00	1.9522E-08	4.9190E+16	1.0768E+17
Pu-238	4.1900E-03	2.4475E-07	6.1928E+17	5.2727E+13
Pu-239	3.6953E-04	5.9451E-06	1.4980E+19	4.6374E+12
Pu-240	6.8707E-04	3.0152E-06	7.5659E+18	8.6480E+12
Pu-241	1.4801E-01	1.4368E-06	3.5904E+18	1.8635E+15
Am-241	1.0178E-04	2.9655E-08	7.4101E+16	1.2648E+12
Cm-242	2.4758E-02	7.4702E-09	1.8589E+16	3.1426E+14
Cm-244	1.6636E-03	2.0563E-08	5.0752E+16	2.0944E+13

RB Transport Group Inventory:

Time (h) = 96.0000	Atmosphere	Sump	
Noble gases (atoms)	9.5060E+23	0.0000E+00	
Elemental I (atoms)	1.7621E+18	0.0000E+00	
Organic I (atoms)	2.9963E+19	0.0000E+00	
Aerosols (kg)	1.6894E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9761E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.0280E-08
Total I (Ci)			1.5183E+03

DW to RB Transport Group Inventory:

Time (h) = 96.0000 Leakage Transport

Noble gases (atoms)	9.7965E+23

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Elemental I (atoms)      2.7618E+18
Organic I (atoms)        4.0214E+19
Aerosols (kg)            1.6864E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms      Decay
Co-58                  1.1687E-12  3.6755E-20  3.8163E+05  7.8150E+05
Co-60                  1.4526E-12  1.2850E-18  1.2898E+07  9.4060E+05
Kr-85                  1.6247E-01  4.1411E-07  2.9339E+18  2.1559E+15
Kr-85m                 9.4929E-07  1.1535E-16  8.1726E+08  1.4675E+15
Kr-88                  4.8672E-10  3.8815E-20  2.6563E+05  1.6732E+15
Rb-86                  6.6506E-11  8.1736E-19  5.7235E+06  6.0158E+07
Sr-89                  1.9503E-09  6.7131E-17  4.5424E+08  1.3217E+09
Sr-90                  2.7083E-10  1.9855E-15  1.3285E+10  1.7520E+08
Y-90                   1.7563E-10  3.2281E-19  2.1600E+06  2.3054E+07
Y-91                   3.1297E-11  1.2762E-18  8.4453E+06  1.8936E+07
Zr-95                  3.0569E-11  1.4230E-18  9.0203E+06  2.0514E+07
Nb-95                  3.1907E-11  8.1597E-19  5.1725E+06  2.0679E+07
Mo-99                  1.4908E-10  3.1083E-19  1.8908E+06  2.2930E+08
Tc-99m                 1.5284E-10  2.9067E-20  1.7681E+05  2.1275E+08
Ru-103                 3.3037E-10  1.0236E-17  5.9849E+07  2.2690E+08
Ru-106                 1.5305E-10  4.5748E-17  2.5991E+08  9.9624E+07
Rh-105                 4.1621E-11  4.9311E-20  2.8282E+05  1.3145E+08
Sb-127                 1.9807E-10  7.4170E-19  3.5170E+06  2.3748E+08
Te-127                 2.5726E-10  9.7480E-20  4.6224E+05  2.4768E+08
Te-127m                6.8574E-11  7.2699E-18  3.4473E+07  4.4616E+07
Te-129                 1.8220E-10  8.7002E-21  4.0615E+04  2.8763E+08
Te-129m                2.1071E-10  6.9944E-18  3.2652E+07  1.4597E+08
Te-131m                9.3075E-11  1.1672E-19  5.3658E+05  4.1218E+08
Te-132                 2.6205E-09  8.6316E-18  3.9379E+07  3.5175E+09
I-131                  7.7546E-04  6.2550E-12  2.8755E+13  1.4024E+13
I-132                  2.3903E-07  2.3157E-17  1.0565E+08  9.1258E+11
I-133                  9.2849E-05  8.1964E-14  3.7113E+11  1.1547E+13
I-135                  9.1328E-08  2.6005E-17  1.1601E+08  3.5287E+12
Xe-133                 1.0320E+01  5.5134E-08  2.4964E+17  1.8116E+17
Xe-135                 5.5568E-03  2.1760E-12  9.7066E+12  1.3284E+16
Cs-134                 8.4098E-09  6.5000E-15  2.9212E+10  6.7088E+09
Cs-136                 2.0436E-09  2.7883E-17  1.2347E+08  1.9526E+09
Cs-137                 6.7907E-09  7.8071E-14  3.4318E+11  5.4011E+09
Ba-140                 2.5578E-09  3.4938E-17  1.5029E+08  1.9916E+09
La-140                 2.2551E-09  4.0572E-18  1.7452E+07  3.8007E+08
Ce-141                 6.9084E-11  2.4246E-18  1.0355E+07  4.8024E+07
Ce-143                 9.6513E-12  1.4533E-20  6.1204E+04  3.5795E+07
Ce-144                 5.9669E-11  1.8708E-17  7.8238E+07  3.8912E+07
Pr-143                 2.8449E-11  4.2247E-19  1.7792E+06  1.8692E+07
Nd-147                 9.1393E-12  1.1297E-19  4.6281E+05  7.3318E+06
Np-239                 2.6304E-10  1.1338E-18  2.8569E+06  4.6855E+08
Pu-238                 2.4335E-13  1.4214E-17  3.5967E+07  1.5733E+05
Pu-239                 2.1462E-14  3.4528E-16  8.7002E+08  1.3800E+04
Pu-240                 3.9904E-14  1.7512E-16  4.3942E+08  2.5808E+04
Pu-241                 8.5963E-12  8.3449E-17  2.0852E+08  5.5621E+06
Am-241                 5.9112E-15  1.7223E-18  4.3037E+06  3.7398E+03
Cm-242                 1.4379E-12  4.3386E-19  1.0796E+06  9.4355E+05
Cm-244                 9.6620E-14  1.1943E-18  2.9476E+06  6.2511E+04

CR Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    3.1836E+18  0.0000E+00
Elemental I (atoms)    2.3535E+11  0.0000E+00
Organic I (atoms)      2.8890E+13  0.0000E+00
Aerosols (kg)          8.7619E-14  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.7654E-13
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Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid) 2.7982E-13
Total I (Ci) 8.6864E-04

Environment to CR Unfiltered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.8191E+19
Elemental I (atoms)	0.0000E+00	4.6138E+14
Organic I (atoms)	0.0000E+00	3.1267E+15
Aerosols (kg)	0.0000E+00	4.3499E-10

Environment to CR Filtered Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.1502E+20
Elemental I (atoms)	1.2186E+15	3.7689E+13
Organic I (atoms)	8.3399E+15	2.5793E+14
Aerosols (kg)	1.1484E-09	3.5516E-11

CR to Environment - Exhaust Transport Group Inventory:

Time (h) = 96.0000	Pathway Filtered	Transported
Noble gases (atoms)	2.8978E+20	0.0000E+00
Elemental I (atoms)	4.9298E+14	0.0000E+00
Organic I (atoms)	3.3308E+15	0.0000E+00
Aerosols (kg)	4.7033E-10	0.0000E+00

EAB Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.5868E+00	3.0343E+01	2.5109E+00
Accumulated dose (rem)	4.9983E+00	6.5245E+01	6.9952E+00

LPZ Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.4184E-02	1.7823E-01	1.9612E-02
Accumulated dose (rem)	2.1662E-01	1.2037E+00	2.5370E-01

CR Doses:

Time (h) = 240.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	9.5216E-02	1.2574E+01	4.7819E-01
Accumulated dose (rem)	9.0111E-01	5.7103E+01	2.6591E+00

DW Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	2.9114E-03	9.1558E-11	9.5065E+14	4.4622E+15
Co-60	3.8291E-03	3.3874E-09	3.3999E+16	5.3491E+15
Kr-85	1.1905E+06	3.0343E+00	2.1497E+25	4.0293E+22
Kr-85m	1.4684E-09	1.7843E-19	1.2641E+06	1.6052E+22
Rb-86	7.6475E-02	9.3987E-10	6.5814E+15	3.1789E+17
Sr-89	4.7450E+00	1.6333E-07	1.1051E+18	7.5596E+18
Sr-90	7.1520E-01	5.2431E-06	3.5083E+19	9.9621E+17
Sr-91	1.6813E-07	4.6380E-17	3.0693E+08	8.3943E+18
Y-90	6.6518E-01	1.2226E-09	8.1808E+15	2.5510E+16
Y-91	7.6353E-02	3.1134E-09	2.0604E+16	9.6477E+16
Y-93	5.4781E-09	1.6420E-18	1.0632E+07	9.7189E+16
Zr-95	7.5675E-02	3.5226E-09	2.2330E+16	1.1718E+17
Zr-97	4.3346E-06	2.2675E-15	1.4077E+10	1.0553E+17
Nb-95	8.3520E-02	2.1359E-09	1.3540E+16	1.1761E+17
Mo-99	8.6799E-02	1.8098E-10	1.1009E+15	1.4600E+18
Tc-99m	8.8990E-02	1.6924E-11	1.0295E+14	1.3010E+18
Ru-103	7.8507E-01	2.4325E-08	1.4222E+17	1.2999E+18
Ru-106	3.9979E-01	1.1950E-07	6.7890E+17	5.6691E+17
Rh-105	6.5357E-03	7.7432E-12	4.4410E+13	8.5370E+17
Sb-127	1.7766E-01	6.6525E-10	3.1545E+15	1.4635E+18
Te-127	3.4816E-01	1.3193E-10	6.2557E+14	1.4601E+18

Te-127m	1.7652E-01	1.8714E-08	8.8740E+16	2.5366E+17
Te-129	4.2529E-01	2.0308E-11	9.4804E+13	3.8694E+18
Te-129m	4.9183E-01	1.6326E-08	7.6216E+16	8.3427E+17
Te-131m	8.8263E-03	1.1069E-11	5.0884E+13	2.9938E+18
Te-132	1.9317E+00	6.3629E-09	2.9029E+16	2.2001E+19
I-131	1.2021E+04	9.6964E-05	4.4575E+20	7.9382E+20
I-132	2.3057E+00	2.2338E-10	1.0191E+15	2.3127E+20
I-133	1.9897E+01	1.7564E-08	7.9529E+16	5.4738E+20
I-135	6.5716E-07	1.8712E-16	8.3473E+08	3.3380E+20
Xe-133	3.4255E+07	1.8300E-01	8.2862E+23	2.4322E+24
Xe-135	6.9419E-01	2.7184E-10	1.2126E+15	1.1061E+23
Cs-134	1.2018E+01	9.2888E-06	4.1745E+19	3.4878E+19
Cs-136	2.1378E+00	2.9168E-08	1.2916E+17	1.0391E+19
Cs-137	9.7544E+00	1.1214E-04	4.9295E+20	2.8069E+19
Ba-140	4.8751E+00	6.6591E-08	2.8644E+17	1.1596E+19
La-140	5.5030E+00	9.9005E-09	4.2587E+16	2.9456E+17
Ce-141	1.6062E-01	5.6371E-09	2.4076E+16	2.7526E+17
Ce-143	1.2385E-03	1.8650E-12	7.8539E+12	2.5454E+17
Ce-144	1.5534E-01	4.8704E-08	2.0368E+17	2.2148E+17
Pr-143	5.7198E-02	8.4941E-10	3.5771E+15	1.0347E+17
Nd-147	1.6531E-02	2.0435E-10	8.3714E+14	4.2854E+16
Np-239	1.1884E-01	5.1225E-10	1.2907E+15	3.0406E+18
Pu-238	6.4327E-04	3.7575E-08	9.5076E+16	8.9452E+14
Pu-239	5.6851E-05	9.1464E-07	2.3046E+18	7.8367E+13
Pu-240	1.0542E-04	4.6263E-07	1.1608E+18	1.4674E+14
Pu-241	2.2691E-02	2.2028E-07	5.5043E+17	3.1628E+16
Am-241	1.6212E-05	4.7235E-09	1.1803E+16	2.1206E+13
Cm-242	3.7028E-03	1.1172E-09	2.7802E+15	5.3748E+15
Cm-244	2.5509E-04	3.1530E-09	7.7819E+15	3.5545E+14

DW Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	2.2326E+25	0.0000E+00	
Elemental I (atoms)	1.2933E+19	4.8566E+22	
Organic I (atoms)	4.3205E+20	0.0000E+00	
Aerosols (kg)	1.2903E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.8309E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.8314E-06
Total I (Ci)			1.2043E+04

DW to RB Transport Group Inventory:

Time (h) = 240.0000 Leakage Transport

Noble gases (atoms)	2.0430E+24
Elemental I (atoms)	3.5589E+18
Organic I (atoms)	6.6841E+19
Aerosols (kg)	1.6924E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2812E+23
Elemental I (atoms)	0.0000E+00	1.4388E+18
Organic I (atoms)	0.0000E+00	2.0640E+19
Aerosols (kg)	0.0000E+00	8.8685E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	6.2812E+23
Elemental I (atoms)	0.0000E+00	1.4388E+18
Organic I (atoms)	0.0000E+00	2.0640E+19
Aerosols (kg)	0.0000E+00	8.8685E-04

RB Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	1.9111E-02	6.0102E-10	6.2404E+15	6.3446E+14
Co-60	2.5135E-02	2.2236E-08	2.2318E+17	7.9598E+14
Kr-85	1.0402E+05	2.6514E-01	1.8785E+24	1.8305E+21

Kr-85m	1.2831E-10	1.5591E-20	1.1046E+05	6.4767E+19
Rb-86	1.0334E+00	1.2700E-08	8.8931E+16	3.9735E+16
Sr-89	3.1147E+01	1.0721E-06	7.2544E+18	1.0548E+18
Sr-90	4.6948E+00	3.4417E-05	2.3030E+20	1.4845E+17
Sr-91	1.1036E-06	3.0445E-16	2.0148E+09	7.3164E+16
Y-90	4.3690E+00	8.0303E-09	5.3733E+16	9.5786E+16
Y-91	5.0606E-01	2.0635E-08	1.3656E+17	1.6764E+16
Y-93	3.5960E-08	1.0778E-17	6.9794E+07	9.0050E+14
Zr-95	4.9675E-01	2.3123E-08	1.4658E+17	1.6578E+16
Zr-97	2.8454E-05	1.4884E-14	9.2407E+10	1.6346E+15
Nb-95	5.4825E-01	1.4021E-08	8.8878E+16	1.7452E+16
Mo-99	5.6978E-01	1.1880E-09	7.2265E+15	8.0778E+16
Tc-99m	5.8416E-01	1.1109E-10	6.7578E+14	7.7589E+16
Ru-103	5.1534E+00	1.5968E-07	9.3359E+17	1.7805E+17
Ru-106	2.6244E+00	7.8443E-07	4.4565E+18	8.3739E+16
Rh-105	4.2902E-02	5.0829E-11	2.9152E+14	3.0376E+16
Sb-127	1.1662E+00	4.3669E-09	2.0707E+16	1.0264E+17
Te-127	2.2855E+00	8.6600E-10	4.1064E+15	1.2916E+17
Te-127m	1.1588E+00	1.2285E-07	5.8252E+17	3.7383E+16
Te-129	2.7918E+00	1.3331E-10	6.2232E+14	8.8450E+16
Te-129m	3.2286E+00	1.0717E-07	5.0031E+17	1.1324E+17
Te-131m	5.7939E-02	7.2659E-11	3.3402E+14	8.1892E+16
Te-132	1.2681E+01	4.1768E-08	1.9056E+17	1.3798E+18
I-131	1.3408E+03	1.0815E-05	4.9719E+19	4.0395E+19
I-132	1.5136E+01	1.4663E-09	6.6897E+15	1.8577E+18
I-133	2.2182E+00	1.9581E-09	8.8663E+15	9.2406E+18
I-135	7.3263E-08	2.0862E-17	9.3061E+07	1.9893E+18
Xe-133	2.9932E+06	1.5991E-02	7.2406E+22	8.9324E+22
Xe-135	6.0681E-02	2.3762E-11	1.0600E+14	8.4105E+20
Cs-134	1.6239E+02	1.2551E-04	5.6408E+20	5.1841E+18
Cs-136	2.8886E+01	3.9413E-07	1.7452E+18	1.2085E+18
Cs-137	1.3181E+02	1.5153E-03	6.6609E+21	4.1897E+18
Ba-140	3.2001E+01	4.3713E-07	1.8803E+18	1.3415E+18
La-140	3.6134E+01	6.5008E-08	2.7964E+17	1.0697E+18
Ce-141	1.0541E+00	3.6994E-08	1.5800E+17	3.7109E+16
Ce-143	8.1299E-03	1.2242E-11	5.1556E+13	7.6368E+15
Ce-144	1.0197E+00	3.1971E-07	1.3370E+18	3.2628E+16
Pr-143	3.7609E-01	5.5850E-09	2.3520E+16	1.4657E+16
Nd-147	1.0852E-01	1.3414E-09	5.4953E+15	4.7701E+15
Np-239	7.8009E-01	3.3626E-09	8.4727E+15	1.4857E+17
Pu-238	4.2226E-03	2.4665E-07	6.2411E+17	1.3341E+14
Pu-239	3.7319E-04	6.0040E-06	1.5128E+19	1.1763E+13
Pu-240	6.9200E-04	3.0368E-06	7.6201E+18	2.1875E+13
Pu-241	1.4895E-01	1.4460E-06	3.6132E+18	4.7117E+15
Am-241	1.0643E-04	3.1010E-08	7.7488E+16	3.2614E+12
Cm-242	2.4307E-02	7.3339E-09	1.8250E+16	7.8483E+14
Cm-244	1.6745E-03	2.0697E-08	5.1083E+16	5.2959E+13

RB Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9509E+24	0.0000E+00	
Elemental I (atoms)	1.6408E+18	0.0000E+00	
Organic I (atoms)	3.7801E+19	0.0000E+00	
Aerosols (kg)	1.6919E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9973E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9993E-08
Total I (Ci)			1.3582E+03

DW to RB Transport Group Inventory:

Time (h) = 240.0000	Leakage Transport
Noble gases (atoms)	2.0430E+24
Elemental I (atoms)	3.5589E+18
Organic I (atoms)	6.6841E+19
Aerosols (kg)	1.6924E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00

Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 240.0000	Ci	kg	Atoms	Decay
Co-58	6.2878E-14	1.9774E-21	2.0532E+04	7.8493E+05
Co-60	8.2699E-14	7.3160E-20	7.3430E+05	9.4494E+05
Kr-85	1.1774E-01	3.0009E-07	2.1261E+18	4.4996E+15
Rb-86	1.6647E-12	2.0459E-20	1.4326E+05	6.0319E+07
Sr-89	1.0248E-10	3.5274E-18	2.3868E+07	1.3274E+09
Sr-90	1.5446E-11	1.1324E-16	7.5770E+08	1.7601E+08
Y-90	1.4366E-11	2.6406E-20	1.7669E+05	2.3658E+07
Y-91	1.6492E-12	6.7248E-20	4.4503E+05	1.9027E+07
Zr-95	1.6344E-12	7.6078E-20	4.8227E+05	2.0603E+07
Nb-95	1.8038E-12	4.6130E-20	2.9242E+05	2.0774E+07
Mo-99	1.8746E-12	3.9087E-21	2.3776E+04	2.2962E+08
Ru-103	1.6955E-11	5.2536E-19	3.0716E+06	2.2786E+08
Ru-106	8.6345E-12	2.5809E-18	1.4663E+07	1.0008E+08
Sb-127	3.8369E-12	1.4368E-20	6.8130E+04	2.3794E+08
Te-127	7.5195E-12	2.8493E-21	1.3511E+04	2.4830E+08
Te-127m	3.8125E-12	4.0418E-19	1.9166E+06	4.4819E+07
Te-129m	1.0622E-11	3.5261E-19	1.6461E+06	1.4658E+08
Te-132	4.1721E-11	1.3742E-19	6.2696E+05	3.5233E+09
I-131	3.3346E-04	2.6898E-12	1.2365E+13	2.2744E+13
I-132	8.4693E-09	8.2050E-19	3.7433E+06	9.1337E+11
I-133	5.5193E-07	4.8722E-16	2.2061E+09	1.1829E+13
Xe-133	3.3878E+00	1.8099E-08	8.1951E+16	2.8452E+17
Xe-135	6.8656E-08	2.6885E-17	1.1993E+08	1.3291E+16
Cs-134	2.6161E-10	2.0220E-16	9.0870E+08	6.7301E+09
Cs-136	4.6534E-11	6.3492E-19	2.8115E+06	1.9574E+09
Cs-137	2.1233E-10	2.4411E-15	1.0730E+10	5.4183E+09
Ba-140	1.0529E-10	1.4382E-18	6.1865E+06	1.9986E+09
La-140	1.1885E-10	2.1383E-19	9.1978E+05	3.8686E+08
Ce-141	3.4690E-12	1.2175E-19	5.1999E+05	4.8223E+07
Ce-144	3.3550E-12	1.0519E-18	4.3991E+06	3.9090E+07
Pr-143	1.2354E-12	1.8345E-20	7.7258E+04	1.8771E+07
Nd-147	3.5704E-13	4.4134E-21	1.8080E+04	7.3565E+06
Np-239	2.5666E-12	1.1063E-20	2.7876E+04	4.6909E+08
Pu-238	1.3893E-14	8.1153E-19	2.0534E+06	1.5805E+05
Pu-239	1.2278E-15	1.9754E-17	4.9775E+07	1.3864E+04
Pu-240	2.2768E-15	9.9916E-18	2.5071E+07	2.5927E+04
Pu-241	4.9008E-13	4.7575E-18	1.1888E+07	5.5878E+06
Am-241	3.5014E-16	1.0202E-19	2.5492E+05	3.7576E+03
Cm-242	7.9972E-14	2.4129E-20	6.0046E+04	9.4781E+05
Cm-244	5.5092E-15	6.8097E-20	1.6807E+05	6.2799E+04

CR Transport Group Inventory:

Time (h) = 240.0000	Atmosphere	Sump	
Noble gases (atoms)	2.2081E+18	0.0000E+00	
Elemental I (atoms)	3.2428E+10	0.0000E+00	
Organic I (atoms)	1.2335E+13	0.0000E+00	
Aerosols (kg)	2.8074E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.1663E-13
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.1665E-13
Total I (Ci)			3.3402E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5803E+20
Elemental I (atoms)	0.0000E+00	4.6701E+14
Organic I (atoms)	0.0000E+00	5.1255E+15
Aerosols (kg)	0.0000E+00	4.3632E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 240.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	4.3457E+20
Elemental I (atoms)	1.2336E+15	3.8153E+13

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Organic I (atoms)      1.3672E+16  4.2284E+14
Aerosols (kg)          1.1519E-09  3.5626E-11

CR to  Environment - Exhaust Transport Group Inventory:

                         Pathway
Time (h) = 240.0000     Filtered   Transported
Noble gases (atoms)    5.9002E+20  0.0000E+00
Elemental I (atoms)    4.9924E+14  0.0000E+00
Organic I (atoms)      5.5021E+15  0.0000E+00
Aerosols (kg)          4.7187E-10  0.0000E+00

EAB Doses:

Time (h) = 480.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.8494E-01  2.3467E+01  1.5994E+00
Accumulated dose (rem)  5.8832E+00  8.8712E+01  8.5946E+00

LPZ Doses:

Time (h) = 480.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.9100E-03  1.3784E-01  1.2107E-02
Accumulated dose (rem)  2.2453E-01  1.3415E+00  2.6581E-01

CR Doses:

Time (h) = 480.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.2872E-02  9.6939E+00  3.4801E-01
Accumulated dose (rem)  9.5398E-01  6.6797E+01  3.0071E+00

DW Compartment Nuclide Inventory:

Time (h) = 480.0000       Ci           kg          Atoms       Decay
Co-58                  2.3393E-03  7.3566E-11  7.6384E+14  4.5458E+15
Co-60                  3.3809E-03  2.9909E-09  3.0020E+16  5.4642E+15
Kr-85                  1.0530E+06  2.6840E+00  1.9016E+25  7.6099E+22
Rb-86                  4.6741E-02  5.7444E-10  4.0225E+15  3.1982E+17
Sr-89                  3.6654E+00  1.2617E-07  8.5370E+17  7.6932E+18
Sr-90                  6.3335E-01  4.6431E-06  3.1068E+19  1.0177E+18
Y-90                   6.3338E-01  1.1642E-09  7.7897E+15  4.6445E+16
Y-91                   6.0100E-02  2.4507E-09  1.6218E+16  9.8647E+16
Zr-95                  6.0173E-02  2.8010E-09  1.7756E+16  1.1934E+17
Zr-97                  2.0392E-10  1.0667E-19  6.6227E+05  1.0553E+17
Nb-95                  7.2009E-02  1.8415E-09  1.1674E+16  1.2009E+17
Mo-99                  6.1853E-03  1.2896E-11  7.8448E+13  1.4610E+18
Tc-99m                 6.3414E-03  1.2060E-12  7.3361E+12  1.3019E+18
Ru-103                 5.8313E-01  1.8068E-08  1.0564E+17  1.3217E+18
Ru-106                 3.4766E-01  1.0392E-07  5.9038E+17  5.7884E+17
Rh-105                 5.2433E-05  6.2120E-14  3.5628E+11  8.5374E+17
Sb-127                 2.6013E-02  9.7407E-11  4.6189E+14  1.4660E+18
Te-127                 1.7521E-01  6.6389E-11  3.1480E+14  1.4674E+18
Te-127m                1.4759E-01  1.5647E-08  7.4194E+16  2.5883E+17
Te-129                 3.0662E-01  1.4641E-11  6.8349E+13  3.8781E+18
Te-129m                3.5459E-01  1.1770E-08  5.4948E+16  8.4768E+17
Te-131m                3.0552E-05  3.8314E-14  1.7613E+11  2.9939E+18
Te-132                 2.0397E-01  6.7186E-10  3.0652E+15  2.2026E+19
I-131                  4.4981E+03  3.6282E-05  1.6679E+20  1.0384E+21
I-132                  2.4346E-01  2.3586E-11  1.0761E+14  2.3129E+20
I-133                  5.9273E-03  5.2324E-12  2.3692E+13  5.4746E+20
Xe-133                 8.0962E+06  4.3253E-02  1.9585E+23  3.0118E+24
Xe-135                 6.9342E-09  2.7153E-18  1.2113E+07  1.1061E+23
Cs-134                 1.0552E+01  8.1557E-06  3.6653E+19  3.5238E+19
Cs-136                 1.1160E+00  1.5227E-08  6.7426E+16  1.0442E+19
Cs-137                 8.6382E+00  9.9311E-05  4.3654E+20  2.8362E+19
Ba-140                 2.5072E+00  3.4248E-08  1.4732E+17  1.1709E+19
La-140                 2.9102E+00  5.2358E-09  2.2522E+16  4.2459E+17
Ce-141                 1.1500E-01  4.0359E-09  1.7237E+16  2.7963E+17
Ce-143                 7.0971E-06  1.0687E-14  4.5007E+10  2.5455E+17
Ce-144                 1.3434E-01  4.2119E-08  1.7614E+17  2.2611E+17
Pr-143                 3.0474E-02  4.5255E-10  1.9058E+15  1.0483E+17
Nd-147                 7.7919E-03  9.6317E-11  3.9458E+14  4.3225E+16
Np-239                 5.5487E-03  2.3918E-11  6.0266E+13  3.0418E+18
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Pu-238	5.7060E-04	3.3330E-08	8.4335E+16	9.1389E+14
Pu-239	5.0404E-05	8.1092E-07	2.0433E+18	8.0079E+13
Pu-240	9.3415E-05	4.0995E-07	1.0287E+18	1.4992E+14
Pu-241	2.0081E-02	1.9494E-07	4.8712E+17	3.2311E+16
Am-241	1.5248E-05	4.4426E-09	1.1101E+16	2.1709E+13
Cm-242	3.1444E-03	9.4875E-10	2.3610E+15	5.4839E+15
Cm-244	2.2580E-04	2.7911E-09	6.8886E+15	3.6313E+14

DW Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9212E+25	0.0000E+00	
Elemental I (atoms)	4.8383E+18	4.8566E+22	
Organic I (atoms)	1.6164E+20	0.0000E+00	
Aerosols (kg)	1.1403E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.0590E-06
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.0590E-06
Total I (Ci)			4.4983E+03

DW to RB Transport Group Inventory:

Time (h) = 480.0000 Leakage Transport

Noble gases (atoms)	3.5933E+24
Elemental I (atoms)	4.1774E+18
Organic I (atoms)	8.7505E+19
Aerosols (kg)	1.7015E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1024E+24
Elemental I (atoms)	0.0000E+00	1.6280E+18
Organic I (atoms)	0.0000E+00	2.6961E+19
Aerosols (kg)	0.0000E+00	8.8964E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.1024E+24
Elemental I (atoms)	0.0000E+00	1.6280E+18
Organic I (atoms)	0.0000E+00	2.6961E+19
Aerosols (kg)	0.0000E+00	8.8964E-04

RB Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	1.7515E-02	5.5083E-10	5.7193E+15	1.2196E+15
Co-60	2.5315E-02	2.2395E-08	2.2477E+17	1.6025E+15
Kr-85	1.8779E+05	4.7864E-01	3.3911E+24	6.5282E+21
Rb-86	7.1646E-01	8.8052E-09	6.1659E+16	6.7398E+16
Sr-89	2.7445E+01	9.4468E-07	6.3921E+18	1.9903E+18
Sr-90	4.7422E+00	3.4765E-05	2.3262E+20	2.9932E+17
Y-90	4.7426E+00	8.7171E-09	5.8328E+16	2.4266E+17
Y-91	4.5432E-01	1.8525E-08	1.2260E+17	3.2102E+16
Zr-95	4.5055E-01	2.0972E-08	1.3295E+17	3.1710E+16
Zr-97	1.5269E-09	7.9872E-19	4.9588E+06	1.6347E+15
Nb-95	5.3917E-01	1.3788E-08	8.7407E+16	3.4849E+16
Mo-99	4.6313E-02	9.6562E-11	5.8739E+14	8.7446E+16
Tc-99m	4.7482E-02	9.0300E-12	5.4929E+13	8.4081E+16
Ru-103	4.3662E+00	1.3529E-07	7.9099E+17	3.2988E+17
Ru-106	2.6031E+00	7.7808E-07	4.4205E+18	1.6731E+17
Rh-105	3.9259E-04	4.6513E-13	2.6677E+12	3.0665E+16
Sb-127	1.9477E-01	7.2934E-10	3.4584E+15	1.1999E+17
Te-127	1.3119E+00	4.9709E-10	2.3571E+15	1.8066E+17
Te-127m	1.1051E+00	1.1716E-07	5.5553E+17	7.3593E+16
Te-129	2.2958E+00	1.0963E-10	5.1177E+14	1.4951E+17
Te-129m	2.6550E+00	8.8132E-08	4.1143E+17	2.0700E+17
Te-131m	2.2876E-04	2.8688E-13	1.3188E+12	8.2226E+16
Te-132	1.5272E+00	5.0306E-09	2.2951E+16	1.5482E+18
I-131	9.2479E+02	7.4595E-06	3.4292E+19	7.7144E+19
I-132	1.8229E+00	1.7660E-10	8.0571E+14	2.0321E+18

I-133	1.2183E-03	1.0754E-12	4.8695E+12	9.2502E+18
Xe-133	1.4438E+06	7.7134E-03	3.4926E+22	1.5980E+23
Xe-135	1.2368E-09	4.8432E-19	2.1605E+06	8.4105E+20
Cs-134	1.6175E+02	1.2501E-04	5.6183E+20	1.0366E+19
Cs-136	1.7107E+01	2.3341E-07	1.0335E+18	1.9274E+18
Cs-137	1.3241E+02	1.5223E-03	6.6915E+21	8.4132E+18
Ba-140	1.8773E+01	2.5643E-07	1.1030E+18	2.1344E+18
La-140	2.1790E+01	3.9203E-08	1.6863E+17	1.9761E+18
Ce-141	8.6080E-01	3.0211E-08	1.2903E+17	6.7617E+16
Ce-143	5.3140E-05	8.0021E-14	3.3699E+11	7.6881E+15
Ce-144	1.0059E+00	3.1537E-07	1.3189E+18	6.5008E+16
Pr-143	2.2855E-01	3.3940E-09	1.4293E+16	2.4134E+16
Nd-147	5.8342E-02	7.2118E-10	2.9544E+15	7.3551E+15
Np-239	4.1546E-02	1.7909E-10	4.5125E+14	1.5662E+17
Pu-238	4.2723E-03	2.4956E-07	6.3146E+17	2.6921E+14
Pu-239	3.7740E-04	6.0718E-06	1.5299E+19	2.3764E+13
Pu-240	6.9945E-04	3.0695E-06	7.7022E+18	4.4118E+13
Pu-241	1.5036E-01	1.4596E-06	3.6473E+18	9.4965E+15
Am-241	1.1418E-04	3.3267E-08	8.3128E+16	6.7873E+12
Cm-242	2.3544E-02	7.1038E-09	1.7678E+16	1.5497E+15
Cm-244	1.6907E-03	2.0898E-08	5.1578E+16	1.0676E+14

RB Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	3.4260E+24	0.0000E+00	
Elemental I (atoms)	1.0784E+18	0.0000E+00	
Organic I (atoms)	2.8843E+19	0.0000E+00	
Aerosols (kg)	1.6970E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		2.7560E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		2.7562E-08
Total I (Ci)			9.2661E+02

DW to RB Transport Group Inventory:

Time (h) = 480.0000 Leakage Transport

Noble gases (atoms)	3.5933E+24
Elemental I (atoms)	4.1774E+18
Organic I (atoms)	8.7505E+19
Aerosols (kg)	1.7015E-03

RB toEnvironment Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	0.0000E+00
Elemental I (atoms)	0.0000E+00	0.0000E+00
Organic I (atoms)	0.0000E+00	0.0000E+00
Aerosols (kg)	0.0000E+00	0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 480.0000	Ci	kg	Atoms	Decay
Co-58	5.0084E-14	1.5751E-21	1.6354E+04	7.8672E+05
Co-60	7.2386E-14	6.4036E-20	6.4273E+05	9.4740E+05
Kr-85	1.0415E-01	2.6545E-07	1.8807E+18	8.0409E+15
Rb-86	1.0007E-12	1.2299E-20	8.6123E+04	6.0360E+07
Sr-89	7.8477E-11	2.7013E-18	1.8278E+07	1.3303E+09
Sr-90	1.3560E-11	9.9409E-17	6.6517E+08	1.7647E+08
Y-90	1.3561E-11	2.4925E-20	1.6678E+05	2.4106E+07
Y-91	1.2868E-12	5.2470E-20	3.4723E+05	1.9074E+07
Zr-95	1.2883E-12	5.9969E-20	3.8015E+05	2.0650E+07
Nb-95	1.5417E-12	3.9428E-20	2.4993E+05	2.0828E+07
Ru-103	1.2485E-11	3.8685E-19	2.2618E+06	2.2832E+08
Ru-106	7.4435E-12	2.2249E-18	1.2640E+07	1.0033E+08
Te-127m	3.1599E-12	3.3500E-19	1.5885E+06	4.4930E+07
Te-129m	7.5919E-12	2.5201E-19	1.1765E+06	1.4686E+08
Te-132	4.3671E-12	1.4385E-20	6.5626E+04	3.5239E+09
I-131	1.2446E-04	1.0039E-12	4.6149E+12	2.9511E+13
I-132	8.8847E-10	8.6074E-20	3.9269E+05	9.1349E+11
I-133	1.6400E-10	1.4477E-19	6.5552E+05	1.1831E+13
Xe-133	8.0073E-01	4.2778E-09	1.9370E+16	3.4184E+17
Cs-134	2.2592E-10	1.7462E-16	7.8475E+08	6.7378E+09

Cs-136	2.3894E-11	3.2601E-19	1.4436E+06	1.9585E+09
Cs-137	1.8495E-10	2.1263E-15	9.3465E+09	5.4246E+09
Ba-140	5.3680E-11	7.3325E-19	3.1541E+06	2.0010E+09
La-140	6.2308E-11	1.1210E-19	4.8220E+05	3.8964E+08
Ce-141	2.4621E-12	8.6409E-20	3.6905E+05	4.8317E+07
Ce-144	2.8762E-12	9.0178E-19	3.7713E+06	3.9189E+07
Pr-143	6.5246E-13	9.6892E-21	4.0804E+04	1.8800E+07
Pu-238	1.2217E-14	7.1360E-19	1.8056E+06	1.5847E+05
Pu-239	1.0792E-15	1.7362E-17	4.3748E+07	1.3901E+04
Pu-240	2.0000E-15	8.7772E-18	2.2024E+07	2.5995E+04
Pu-241	4.2994E-13	4.1737E-18	1.0429E+07	5.6024E+06
Am-241	3.2646E-16	9.5117E-20	2.3768E+05	3.7684E+03
Cm-242	6.7323E-14	2.0313E-20	5.0549E+04	9.5015E+05
Cm-244	4.8345E-15	5.9757E-20	1.4749E+05	6.2964E+04

CR Transport Group Inventory:

Time (h) = 480.0000	Atmosphere	Sump	
Noble gases (atoms)	1.9001E+18	0.0000E+00	
Elemental I (atoms)	2.1290E+08	0.0000E+00	
Organic I (atoms)	4.6147E+12	0.0000E+00	
Aerosols (kg)	2.4413E-15	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		4.3516E-14
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		4.3516E-14
Total I (Ci)			1.2446E-04

Environment to CR Unfiltered Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	2.7455E+20
Elemental I (atoms)	0.0000E+00	4.6711E+14
Organic I (atoms)	0.0000E+00	6.6786E+15
Aerosols (kg)	0.0000E+00	4.3684E-10

Environment to CR Filtered Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	7.5502E+20
Elemental I (atoms)	1.2339E+15	3.8161E+13
Organic I (atoms)	1.7815E+16	5.5097E+14
Aerosols (kg)	1.1533E-09	3.5669E-11

CR to Environment - Exhaust Transport Group Inventory:

	Pathway	
Time (h) = 480.0000	Filtered	Transported
Noble gases (atoms)	1.0272E+21	0.0000E+00
Elemental I (atoms)	4.9939E+14	0.0000E+00
Organic I (atoms)	7.1843E+15	0.0000E+00
Aerosols (kg)	4.7242E-10	0.0000E+00

EAB Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	2.1240E-01	8.7802E+00	4.7973E-01
Accumulated dose (rem)	6.0956E+00	9.7492E+01	9.0743E+00

LPZ Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.8986E-03	5.1574E-02	3.4688E-03
Accumulated dose (rem)	2.2643E-01	1.3931E+00	2.6928E-01

CR Doses:

Time (h) = 720.0000	Whole Body	Thyroid	TEDE
Delta dose (rem)	1.2667E-02	3.6269E+00	1.2309E-01
Accumulated dose (rem)	9.6665E-01	7.0424E+01	3.1302E+00

DW Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.8796E-03	5.9110E-11	6.1374E+14	4.6129E+15
Co-60	2.9852E-03	2.6408E-09	2.6506E+16	5.5658E+15
Kr-85	9.3148E+05	2.3742E+00	1.6821E+25	1.0777E+23
Rb-86	2.8567E-02	3.5109E-10	2.4585E+15	3.2100E+17
Sr-89	2.8315E+00	9.7461E-08	6.5947E+17	7.7965E+18
Sr-90	5.6086E-01	4.1117E-06	2.7512E+19	1.0368E+18
Y-90	5.6381E-01	1.0363E-09	6.9342E+15	6.5471E+16
Y-91	4.7307E-02	1.9290E-09	1.2766E+16	1.0036E+17
Zr-95	4.7846E-02	2.2272E-09	1.4118E+16	1.2106E+17
Nb-95	6.1331E-02	1.5684E-09	9.9425E+15	1.2222E+17
Mo-99	4.4076E-04	9.1899E-13	5.5902E+12	1.4611E+18
Tc-99m	4.5189E-04	8.5939E-14	5.2277E+11	1.3020E+18
Ru-103	4.3314E-01	1.3421E-08	7.8468E+16	1.3378E+18
Ru-106	3.0233E-01	9.0367E-08	5.1340E+17	5.8921E+17
Rh-105	4.2064E-07	4.9836E-16	2.8583E+09	8.5374E+17
Sb-127	3.8088E-03	1.4262E-11	6.7630E+13	1.4663E+18
Te-127	1.2895E-01	4.8863E-11	2.3170E+14	1.4720E+18
Te-127m	1.2284E-01	1.3023E-08	6.1754E+16	2.6314E+17
Te-129	2.2106E-01	1.0555E-11	4.9276E+13	3.8844E+18
Te-129m	2.5564E-01	8.4860E-09	3.9615E+16	8.5734E+17
Te-131m	1.0575E-07	1.3262E-16	6.0968E+08	2.9939E+18
Te-132	2.1537E-02	7.0942E-11	3.2365E+14	2.2028E+19
I-131	1.6831E+03	1.3576E-05	6.2410E+19	1.1299E+21
I-132	2.5707E-02	2.4905E-12	1.1362E+13	2.3129E+20
I-133	1.7658E-06	1.5588E-15	7.0579E+09	5.4746E+20
Xe-133	1.9136E+06	1.0223E-02	4.6289E+22	3.1487E+24
Cs-134	9.2649E+00	7.1609E-06	3.2182E+19	3.5555E+19
Cs-136	5.8260E-01	7.9491E-09	3.5199E+16	1.0468E+19
Cs-137	7.6498E+00	8.7947E-05	3.8659E+20	2.8622E+19
Ba-140	1.2894E+00	1.7613E-08	7.5764E+16	1.1768E+19
La-140	1.4978E+00	2.6948E-09	1.1592E+16	4.9206E+17
Ce-141	8.2330E-02	2.8894E-09	1.2341E+16	2.8275E+17
Ce-143	4.0670E-08	6.1242E-17	2.5791E+08	2.5455E+17
Ce-144	1.1617E-01	3.6424E-08	1.5233E+17	2.3010E+17
Pr-143	1.6197E-02	2.4054E-10	1.0130E+15	1.0555E+17
Nd-147	3.6727E-03	4.5398E-11	1.8598E+14	4.3400E+16
Np-239	2.5908E-04	1.1168E-12	2.8139E+12	3.0419E+18
Pu-238	5.0611E-04	2.9563E-08	7.4803E+16	9.3108E+14
Pu-239	4.4666E-05	7.1861E-07	1.8107E+18	8.1597E+13
Pu-240	8.2778E-05	3.6327E-07	9.1154E+17	1.5273E+14
Pu-241	1.7771E-02	1.7251E-07	4.3108E+17	3.2915E+16
Am-241	1.4292E-05	4.1640E-09	1.0405E+16	2.2181E+13
Cm-242	2.6702E-03	8.0568E-10	2.0049E+15	5.5766E+15
Cm-244	1.9988E-04	2.4707E-09	6.0978E+15	3.6992E+14

DW Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	1.6867E+25	0.0000E+00	
Elemental I (atoms)	1.8104E+18	4.8566E+22	
Organic I (atoms)	6.0481E+19	0.0000E+00	
Aerosols (kg)	1.0084E-04	4.8987E+01	
Dose Effective (Ci/cc)	I-131 (Thyroid)		3.9626E-07
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		3.9626E-07
Total I (Ci)			1.6831E+03

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport
Noble gases (atoms)	4.9433E+24
Elemental I (atoms)	4.4088E+18
Organic I (atoms)	9.5236E+19
Aerosols (kg)	1.7096E-03

DW to MSL "B" Volume 1 Transport Group Inventory:

	Pathway	
Time (h) = 720.0000	Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	1.6988E+18
Organic I (atoms)	0.0000E+00	2.9326E+19
Aerosols (kg)	0.0000E+00	8.9210E-04

DW to MSL "C" Volume 3 Transport Group Inventory:

Time (h) = 720.0000	Pathway Filtered	Transported
Noble gases (atoms)	0.0000E+00	1.5154E+24
Elemental I (atoms)	0.0000E+00	1.6988E+18
Organic I (atoms)	0.0000E+00	2.9326E+19
Aerosols (kg)	0.0000E+00	8.9210E-04

RB Compartment Nuclide Inventory:

Time (h) = 720.0000	Ci	kg	Atoms	Decay
Co-58	1.6032E-02	5.0417E-10	5.2348E+15	1.7555E+15
Co-60	2.5462E-02	2.2525E-08	2.2608E+17	2.4142E+15
Kr-85	2.6171E+05	6.6707E-01	4.7261E+24	1.3743E+22
Rb-86	4.9644E-01	6.1012E-09	4.2724E+16	8.6571E+16
Sr-89	2.4151E+01	8.3129E-07	5.6249E+18	2.8139E+18
Sr-90	4.7838E+00	3.5070E-05	2.3466E+20	4.5160E+17
Y-90	4.8090E+00	8.8390E-09	5.9144E+16	3.9468E+17
Y-91	4.0733E-01	1.6610E-08	1.0992E+17	4.5863E+16
Zr-95	4.0810E-01	1.8997E-08	1.2042E+17	4.5425E+16
Nb-95	5.2312E-01	1.3378E-08	8.4804E+16	5.1839E+16
Mo-99	3.7594E-03	7.8385E-12	4.7681E+13	8.7988E+16
Tc-99m	3.8543E-03	7.3301E-13	4.4589E+12	8.4608E+16
Ru-103	3.6944E+00	1.1447E-07	6.6928E+17	4.5844E+17
Ru-106	2.5787E+00	7.7078E-07	4.3790E+18	2.5014E+17
Rh-105	3.5878E-06	4.2507E-15	2.4379E+10	3.0668E+16
Sb-127	3.2487E-02	1.2165E-10	5.7684E+14	1.2289E+17
Te-127	1.0999E+00	4.1677E-10	1.9763E+15	2.1716E+17
Te-127m	1.0478E+00	1.1108E-07	5.2673E+17	1.0800E+17
Te-129	1.8855E+00	9.0032E-11	4.2030E+14	1.9969E+17
Te-129m	2.1805E+00	7.2380E-08	3.3789E+17	2.8405E+17
Te-131m	9.0202E-07	1.1312E-15	5.2002E+09	8.2227E+16
Te-132	1.8370E-01	6.0509E-10	2.7606E+15	1.5685E+18
I-131	5.2468E+02	4.2322E-06	1.9456E+19	9.9958E+19
I-132	2.1927E-01	2.1242E-11	9.6912E+13	2.0531E+18
I-133	5.5033E-07	4.8581E-16	2.1997E+09	9.2502E+18
Xe-133	5.3765E+05	2.8724E-03	1.3006E+22	1.8951E+23
Cs-134	1.6100E+02	1.2444E-04	5.5925E+20	1.5525E+19
Cs-136	1.0124E+01	1.3814E-07	6.1168E+17	2.3529E+18
Cs-137	1.3294E+02	1.5283E-03	6.7181E+21	1.2655E+19
Ba-140	1.0998E+01	1.5023E-07	6.4622E+17	2.5993E+18
La-140	1.2776E+01	2.2985E-08	9.8870E+16	2.5120E+18
Ce-141	7.0204E-01	2.4639E-08	1.0523E+17	9.2514E+16
Ce-143	3.4689E-07	5.2236E-16	2.1998E+09	7.6885E+15
Ce-144	9.9090E-01	3.1068E-07	1.2993E+18	9.6928E+16
Pr-143	1.3838E-01	2.0550E-09	8.6540E+15	2.9880E+16
Nd-147	3.1326E-02	3.8722E-10	1.5863E+15	8.7441E+15
Np-239	2.2098E-03	9.5253E-12	2.4001E+13	1.5705E+17
Pu-238	4.3168E-03	2.5215E-07	6.3802E+17	4.0652E+14
Pu-239	3.8097E-04	6.1293E-06	1.5444E+19	3.5887E+13
Pu-240	7.0605E-04	3.0985E-06	7.7749E+18	6.6586E+13
Pu-241	1.5158E-01	1.4714E-06	3.6769E+18	1.4323E+16
Am-241	1.2191E-04	3.5520E-08	8.8758E+16	1.0561E+13
Cm-242	2.2776E-02	6.8719E-09	1.7101E+16	2.2901E+15
Cm-244	1.7049E-03	2.1073E-08	5.2011E+16	1.6104E+14

RB Transport Group Inventory:

Time (h) = 720.0000	Atmosphere	Sump	
Noble gases (atoms)	4.7391E+24	0.0000E+00	
Elemental I (atoms)	5.9968E+17	0.0000E+00	
Organic I (atoms)	1.7001E+19	0.0000E+00	
Aerosols (kg)	1.7019E-03	0.0000E+00	
Dose Effective (Ci/cc)	I-131 (Thyroid)		1.5636E-08
Dose Effective (Ci/cc)	I-131 (ICRP2 Thyroid)		1.5637E-08
Total I (Ci)			5.2490E+02

DW to RB Transport Group Inventory:

Time (h) = 720.0000	Leakage Transport
Noble gases (atoms)	4.9433E+24

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Elemental I (atoms)      4.4088E+18
Organic I (atoms)        9.5236E+19
Aerosols (kg)            1.7096E-03

RB toEnvironment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms      Decay
Co-58                  4.0242E-14  1.2656E-21  1.3140E+04  7.8816E+05
Co-60                  6.3913E-14  5.6541E-20  5.6749E+05  9.4958E+05
Kr-85                  9.2125E-02  2.3481E-07  1.6636E+18  1.1173E+16
Rb-86                  6.1163E-13  7.5169E-21  5.2637E+04  6.0385E+07
Sr-89                  6.0622E-11  2.0867E-18  1.4119E+07  1.3325E+09
Sr-90                  1.2008E-11  8.8032E-17  5.8905E+08  1.7688E+08
Y-90                   1.2071E-11  2.2187E-20  1.4846E+05  2.4514E+07
Y-91                   1.0129E-12  4.1301E-20  2.7332E+05  1.9110E+07
Zr-95                  1.0244E-12  4.7684E-20  3.0228E+05  2.0686E+07
Nb-95                  1.3131E-12  3.3581E-20  2.1287E+05  2.0873E+07
Ru-103                 9.2737E-12  2.8734E-19  1.6800E+06  2.2867E+08
Ru-106                 6.4730E-12  1.9348E-18  1.0992E+07  1.0056E+08
Te-127m                2.6301E-12  2.7883E-19  1.3222E+06  4.5022E+07
Te-129m                5.4734E-12  1.8169E-19  8.4817E+05  1.4707E+08
I-131                  4.6568E-05  3.7563E-13  1.7268E+12  3.2043E+13
I-132                  9.3812E-11  9.0884E-21  4.1464E+04  9.1350E+11
Xe-133                 1.8926E-01  1.0111E-09  4.5781E+15  3.5539E+17
Cs-134                 1.9836E-10  1.5332E-16  6.8902E+08  6.7446E+09
Cs-136                 1.2474E-11  1.7019E-19  7.5362E+05  1.9591E+09
Cs-137                 1.6378E-10  1.8830E-15  8.2770E+09  5.4302E+09
Ba-140                 2.7607E-11  3.7711E-19  1.6221E+06  2.0023E+09
La-140                 3.2069E-11  5.7696E-20  2.4818E+05  3.9109E+08
Ce-141                 1.7627E-12  6.1864E-20  2.6422E+05  4.8383E+07
Ce-144                 2.4873E-12  7.7985E-19  3.2614E+06  3.9274E+07
Pr-143                 3.4679E-13  5.1499E-21  2.1688E+04  1.8816E+07
Pu-238                 1.0836E-14  6.3295E-19  1.6015E+06  1.5884E+05
Pu-239                 9.5631E-16  1.5386E-17  3.8767E+07  1.3933E+04
Pu-240                 1.7723E-15  7.7778E-18  1.9516E+07  2.6055E+04
Pu-241                 3.8049E-13  3.6936E-18  9.2296E+06  5.6153E+06
Am-241                 3.0599E-16  8.9153E-20  2.2278E+05  3.7785E+03
Cm-242                 5.7171E-14  1.7250E-20  4.2926E+04  9.5214E+05
Cm-244                 4.2795E-15  5.2897E-20  1.3056E+05  6.3109E+04

CR Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    1.6682E+18  0.0000E+00
Elemental I (atoms)    5.1610E+07  0.0000E+00
Organic I (atoms)      1.7267E+12  0.0000E+00
Aerosols (kg)          2.1589E-15  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          1.6283E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.6283E-14
Total I (Ci)                                    4.6568E-05

Environment to CR Unfiltered Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.7602E+20
Elemental I (atoms)    0.0000E+00  4.6713E+14
Organic I (atoms)      0.0000E+00  7.2597E+15
Aerosols (kg)          0.0000E+00  4.3729E-10

Environment to  CR Filtered Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
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Noble gases (atoms)    0.0000E+00  1.0341E+21
Elemental I (atoms)    1.2339E+15  3.8163E+13
Organic I (atoms)      1.9365E+16  5.9891E+14
Aerosols (kg)          1.1545E-09  3.5706E-11

CR to  Environment - Exhaust Transport Group Inventory:

                          Pathway
Time (h) = 720.0000      Filtered   Transported
Noble gases (atoms)    1.4080E+21  0.0000E+00
Elemental I (atoms)    4.9941E+14  0.0000E+00
Organic I (atoms)      7.8137E+15  0.0000E+00
Aerosols (kg)          4.7291E-10  0.0000E+00

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######################################################################
                              I-131 Summary
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Time (hr)	DW I-131 (Curies)	RB I-131 (Curies)	Environment I-131 (Curies)
0.000	3.8944E+03	6.7611E-04	3.7369E-14
0.260	1.8207E+06	1.4794E+02	1.7514E-03
0.333	2.3333E+06	2.4304E+02	4.6987E-03
0.500	2.5229E+05	3.1098E+02	2.1931E-02
0.750	3.9747E+05	3.6954E+02	8.0451E-02
1.000	4.0160E+05	4.3161E+02	1.8384E-01
1.400	4.0806E+05	5.3214E+02	4.6223E-01
1.500	4.0967E+05	5.5750E+02	5.5710E-01
1.800	4.1449E+05	6.3413E+02	9.1231E-01
2.000	4.1769E+05	6.8567E+02	1.2146E+00
2.100	5.0440E+04	6.9503E+02	1.3129E+00
2.300	4.2146E+04	7.0027E+02	1.5245E+00
2.400	3.9528E+04	7.0257E+02	1.6378E+00
2.700	3.5071E+04	7.0875E+02	2.0088E+00
3.000	3.3235E+04	7.1438E+02	2.4267E+00
3.300	3.2463E+04	7.1977E+02	2.8923E+00
3.600	3.2124E+04	7.2505E+02	3.4062E+00
3.900	3.1960E+04	7.3028E+02	3.9690E+00
4.000	3.1924E+04	7.3202E+02	4.1676E+00
4.300	3.1880E+04	7.3722E+02	4.7961E+00
4.600	3.1836E+04	7.4241E+02	5.4743E+00
4.900	3.1792E+04	7.4758E+02	6.2022E+00
5.200	3.1748E+04	7.5274E+02	6.9800E+00
5.500	3.1704E+04	7.5789E+02	7.8076E+00
5.800	3.1661E+04	7.6302E+02	8.6849E+00
6.100	3.1617E+04	7.6814E+02	9.6119E+00
6.400	3.1573E+04	7.7324E+02	1.0588E+01
6.700	3.1530E+04	7.7833E+02	1.1614E+01
7.000	3.1486E+04	7.8341E+02	1.2688E+01
7.300	3.1443E+04	7.8847E+02	1.3810E+01
7.600	3.1400E+04	7.9352E+02	1.4981E+01
7.900	3.1356E+04	7.9856E+02	1.6198E+01
8.000	3.1342E+04	8.0023E+02	1.6615E+01
8.300	3.1299E+04	8.0525E+02	1.7882E+01
8.600	3.1256E+04	8.1025E+02	1.9195E+01
8.900	3.1212E+04	8.1524E+02	2.0554E+01
9.200	3.1169E+04	8.2022E+02	2.1957E+01
9.500	3.1126E+04	8.2519E+02	2.3404E+01
9.800	3.1084E+04	8.3014E+02	2.4895E+01
10.100	3.1041E+04	8.3507E+02	2.6429E+01
10.400	3.0998E+04	8.4000E+02	2.8005E+01
24.000	2.9118E+04	1.0495E+03	1.3184E+02
48.000	2.6392E+04	1.1624E+03	2.4538E+02
72.000	2.3921E+04	1.2471E+03	3.5615E+02
96.000	2.1682E+04	1.3078E+03	4.5848E+02
240.000	1.2021E+04	1.3408E+03	9.0274E+02
480.000	4.4981E+03	9.2479E+02	1.2482E+03
720.000	1.6831E+03	5.2468E+02	1.3774E+03

Time (hr)	I-131 (Curies)	I-131 (Curies)	I-131 (Curies)
0.000	1.6834E-16	3.5698E-04	5.2857E-10
0.260	7.3993E-06	7.7000E+01	5.2637E-02
0.333	1.9503E-05	1.2599E+02	1.0999E-01
0.500	8.7014E-05	1.5775E+02	3.0136E-01
0.750	1.1865E-04	1.8165E+02	6.2570E-01
1.000	1.8119E-04	2.0639E+02	1.0043E+00
1.400	3.4641E-04	2.4454E+02	1.7420E+00
1.500	4.0067E-04	2.5380E+02	1.9542E+00
1.800	5.9617E-04	2.8100E+02	2.6633E+00
2.000	7.5492E-04	2.9864E+02	3.1992E+00
2.100	7.5432E-04	2.9859E+02	3.3628E+00
2.300	7.6276E-04	2.9444E+02	3.6940E+00
2.400	7.7133E-04	2.9229E+02	3.8611E+00
2.700	8.1182E-04	2.8577E+02	4.3684E+00
3.000	8.7080E-04	2.7927E+02	4.8830E+00
3.300	9.4439E-04	2.7290E+02	5.4039E+00
3.600	1.0295E-03	2.6668E+02	5.9296E+00
3.900	1.1238E-03	2.6063E+02	6.4590E+00
4.000	1.1569E-03	2.5866E+02	6.6361E+00
4.300	1.2604E-03	2.5284E+02	7.1688E+00
4.600	1.3692E-03	2.4719E+02	7.7029E+00
4.900	1.4820E-03	2.4170E+02	8.2374E+00
5.200	1.5981E-03	2.3638E+02	8.7714E+00
5.500	1.7166E-03	2.3121E+02	9.3043E+00
5.800	1.8369E-03	2.2618E+02	9.8353E+00
6.100	1.9585E-03	2.2131E+02	1.0364E+01
6.400	2.0809E-03	2.1657E+02	1.0889E+01
6.700	2.2038E-03	2.1197E+02	1.1410E+01
7.000	2.3268E-03	2.0751E+02	1.1928E+01
7.300	2.4498E-03	2.0317E+02	1.2440E+01
7.600	2.5724E-03	1.9896E+02	1.2948E+01
7.900	2.6944E-03	1.9487E+02	1.3450E+01
8.000	2.7350E-03	1.9354E+02	1.3616E+01
8.300	2.3617E-03	1.8960E+02	1.4106E+01
8.600	2.0861E-03	1.8578E+02	1.4591E+01
8.900	1.8850E-03	1.8207E+02	1.5069E+01
9.200	1.7408E-03	1.7847E+02	1.5540E+01
9.500	1.6400E-03	1.7497E+02	1.6005E+01
9.800	1.5722E-03	1.7158E+02	1.6463E+01
10.100	1.5295E-03	1.6828E+02	1.6913E+01
10.400	1.5058E-03	1.6507E+02	1.7357E+01
24.000	2.4589E-03	8.5010E+01	2.9822E+01
48.000	9.0231E-04	6.0713E+01	3.1021E+01
72.000	8.4925E-04	5.0296E+01	2.9306E+01
96.000	7.7546E-04	4.4216E+01	2.6826E+01
240.000	3.3346E-04	2.4159E+01	1.4887E+01
480.000	1.2446E-04	9.0396E+00	5.5125E+00
720.000	4.6568E-05	3.3825E+00	2.0619E+00

Time (hr)	MSL "C" Volume 3 I-131 (Curies)	MSL "C" Volume 4 I-131 (Curies)
0.000	3.5698E-04	6.2309E-10
0.260	7.6827E+01	6.2024E-02
0.333	1.2563E+02	1.2959E-01
0.500	1.5676E+02	3.5488E-01
0.750	1.7964E+02	7.3596E-01
1.000	2.0324E+02	1.1798E+00
1.400	2.3935E+02	2.0418E+00
1.500	2.4808E+02	2.2893E+00
1.800	2.7356E+02	3.1148E+00
2.000	2.9000E+02	3.7375E+00
2.100	2.8961E+02	3.9275E+00
2.300	2.8477E+02	4.3115E+00
2.400	2.8229E+02	4.5051E+00
2.700	2.7482E+02	5.0919E+00
3.000	2.6744E+02	5.6863E+00
3.300	2.6023E+02	6.2866E+00
3.600	2.5324E+02	6.8915E+00
3.900	2.4647E+02	7.4996E+00
4.000	2.4427E+02	7.7029E+00
4.300	2.3780E+02	8.3134E+00

4.600	2.3154E+02	8.9245E+00
4.900	2.2550E+02	9.5352E+00
5.200	2.1966E+02	1.0144E+01
5.500	2.1401E+02	1.0751E+01
5.800	2.0855E+02	1.1355E+01
6.100	2.0327E+02	1.1955E+01
6.400	1.9817E+02	1.2551E+01
6.700	1.9324E+02	1.3141E+01
7.000	1.8848E+02	1.3726E+01
7.300	1.8387E+02	1.4304E+01
7.600	1.7942E+02	1.4876E+01
7.900	1.7511E+02	1.5441E+01
8.000	1.7371E+02	1.5628E+01
8.300	1.6959E+02	1.6180E+01
8.600	1.6561E+02	1.6724E+01
8.900	1.6177E+02	1.7260E+01
9.200	1.5805E+02	1.7788E+01
9.500	1.5446E+02	1.8308E+01
9.800	1.5098E+02	1.8819E+01
10.100	1.4762E+02	1.9321E+01
10.400	1.4437E+02	1.9815E+01
24.000	6.9514E+01	3.3167E+01
48.000	5.0363E+01	3.4011E+01
72.000	4.2593E+01	3.1893E+01
96.000	3.7868E+01	2.9102E+01
240.000	2.0847E+01	1.6111E+01
480.000	7.8004E+00	5.9541E+00
720.000	2.9188E+00	2.2261E+00

##
Cumulative Dose Summary
##

	EAB		LPZ		CR	
Time (hr)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)	Thyroid (rem)	TEDE (rem)
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.260	1.6724E-04	9.3157E-06	1.8686E-05	1.0409E-06	2.6274E-04	8.6199E-06
0.333	4.4832E-04	2.4797E-05	5.0091E-05	2.7706E-06	8.8969E-04	2.9165E-05
0.500	2.0889E-03	1.1642E-04	2.3340E-04	1.3008E-05	6.2803E-03	2.0563E-04
0.750	7.6445E-03	4.7958E-04	8.5413E-04	5.3584E-05	2.3011E-02	7.6377E-04
1.000	1.7429E-02	1.3789E-03	1.9474E-03	1.5406E-04	4.7524E-02	1.6318E-03
1.400	4.3691E-02	5.3152E-03	4.8817E-03	5.9387E-04	1.1581E-01	4.4046E-03
1.500	5.2615E-02	7.0530E-03	5.8788E-03	7.8804E-04	1.4051E-01	5.5158E-03
1.800	8.5946E-02	1.4861E-02	9.6030E-03	1.6605E-03	2.3840E-01	1.0348E-02
2.000	1.1423E-01	2.2736E-02	1.2763E-02	2.5403E-03	3.2708E-01	1.5184E-02
2.100	1.2341E-01	2.5471E-02	1.3789E-02	2.8459E-03	3.7663E-01	1.7997E-02
2.300	1.4314E-01	3.1542E-02	1.5993E-02	3.5243E-03	4.7596E-01	2.3733E-02
2.400	1.5369E-01	3.4885E-02	1.7172E-02	3.8978E-03	5.2615E-01	2.6687E-02
2.700	1.8815E-01	4.6171E-02	2.1022E-02	5.1588E-03	6.8088E-01	3.6045E-02
3.000	2.2683E-01	5.9355E-02	2.5344E-02	6.6318E-03	8.4486E-01	4.6368E-02
3.300	2.6978E-01	7.4417E-02	3.0143E-02	8.3147E-03	1.0213E+00	5.7878E-02
3.600	3.1704E-01	9.1304E-02	3.5423E-02	1.0202E-02	1.2125E+00	7.0734E-02
3.900	3.6862E-01	1.0994E-01	4.1187E-02	1.2284E-02	1.4205E+00	8.5045E-02
4.000	3.8678E-01	1.1652E-01	4.3216E-02	1.3019E-02	1.4938E+00	9.0151E-02
4.300	4.4415E-01	1.3734E-01	4.9626E-02	1.5345E-02	1.7264E+00	1.0650E-01
4.600	5.0586E-01	1.5967E-01	5.6521E-02	1.7840E-02	1.9787E+00	1.2441E-01
4.900	5.7191E-01	1.8340E-01	6.3900E-02	2.0491E-02	2.2515E+00	1.4388E-01
5.200	6.4226E-01	2.0841E-01	7.1761E-02	2.3286E-02	2.5452E+00	1.6489E-01
5.500	7.1690E-01	2.3460E-01	8.0101E-02	2.6212E-02	2.8605E+00	1.8742E-01
5.800	7.9581E-01	2.6184E-01	8.8917E-02	2.9256E-02	3.1975E+00	2.1142E-01
6.100	8.7893E-01	2.9004E-01	9.8205E-02	3.2407E-02	3.5564E+00	2.3685E-01
6.400	9.6624E-01	3.1910E-01	1.0796E-01	3.5653E-02	3.9373E+00	2.6364E-01
6.700	1.0577E+00	3.4890E-01	1.1818E-01	3.8983E-02	4.3403E+00	2.9174E-01
7.000	1.1532E+00	3.7937E-01	1.2885E-01	4.2388E-02	4.7653E+00	3.2110E-01
7.300	1.2528E+00	4.1042E-01	1.3998E-01	4.5857E-02	5.2121E+00	3.5165E-01
7.600	1.3563E+00	4.4196E-01	1.5155E-01	4.9381E-02	5.6807E+00	3.8334E-01
7.900	1.4638E+00	4.7394E-01	1.6355E-01	5.2954E-02	6.1708E+00	4.1611E-01
8.000	1.5005E+00	4.8468E-01	1.6765E-01	5.4154E-02	6.3389E+00	4.2726E-01
8.300	1.6119E+00	5.1708E-01	1.7194E-01	5.6453E-02	6.8101E+00	4.5816E-01
8.600	1.7271E+00	5.4976E-01	1.7638E-01	5.8769E-02	7.2204E+00	4.8461E-01
8.900	1.8460E+00	5.8266E-01	1.8095E-01	6.1097E-02	7.5860E+00	5.0782E-01

```
   9.200 1.9685E+00 6.1574E-01 1.8567E-01 6.3434E-02 7.9191E+00 5.2869E-01
   9.500 2.0945E+00 6.4895E-01 1.9052E-01 6.5778E-02 8.2290E+00 5.4788E-01
   9.800 2.2240E+00 6.8226E-01 1.9551E-01 6.8124E-02 8.5229E+00 5.6587E-01
  10.100 2.3569E+00 7.1562E-01 2.0062E-01 7.0471E-02 8.8061E+00 5.8303E-01
  10.400 2.4932E+00 7.4901E-01 2.0587E-01 7.2817E-02 9.0826E+00 5.9961E-01
  24.000 1.1088E+01 2.1722E+00 5.3675E-01 1.6969E-01 2.4885E+01 1.3888E+00
  48.000 1.9762E+01 3.0999E+00 7.1478E-01 1.9581E-01 3.2421E+01 1.7045E+00
  72.000 2.7743E+01 3.8419E+00 8.7856E-01 2.1637E-01 3.8800E+01 1.9571E+00
  96.000 3.4901E+01 4.4842E+00 1.0255E+00 2.3409E-01 4.4529E+01 2.1809E+00
 240.000 6.5245E+01 6.9952E+00 1.2037E+00 2.5370E-01 5.7103E+01 2.6591E+00
 480.000 8.8712E+01 8.5946E+00 1.3415E+00 2.6581E-01 6.6797E+01 3.0071E+00
 720.000 9.7492E+01 9.0743E+00 1.3931E+00 2.6928E-01 7.0424E+01 3.1302E+00

######################################################################
                        Worst Two-Hour Doses
######################################################################

EAB
   Time    Whole Body     Thyroid         TEDE
   (hr)       (rem)         (rem)          (rem)
    8.4    1.9477E-01    8.4287E-01    2.2104E-01
```

12.14 Main Steam Line Volumes & Surface Area for Plateout of Activity

Comparisons of the main steam piping drawings FP-27A (Ref. 9.72) and FP-27B (Ref. 9.22) indicate that the main steam piping layouts are comparable for the two outer steam distribution headers (A and D steam lines) and the inner distribution headers (B and C steam lines). Main Steam Lines "B" and "C" are shorter than Lines "A" and "D". Because steam line B is assumed to contain the failed MSIV, the volume and surface area for this line will be based on the line from the vessel nozzle to the outboard MSIV (V_1) and the volume between the outboard MSIV and the TSV (V_2).

General Data:

Pipe diameter = 24" (Ref. 9.22, FP-27B)

Minimum wall thickness = 1.219" (Schedule 80, Ref. 9.26, Crane 410)

Corrosion allowance for steam = 0.12" (assumed)

Total Minimum Thickness = 1.219" + 0.12" = 1.339"

24" Pipe ID = OD – (2 x min wall thickness) = 24" – 2 x 1.339" = 21.322" = 1.777'

Pipe cross sectional area = $\pi r^2 = \pi (1.777' / 2)^2 = 2.48\ ft^2$

Nozzle elevation (Center Line) = 338'-10'' (Ref. 9.22, FP-27B)

Main Steam Line with failed MSIV (24"-SHP-902-1B) from RPV nozzle to Outboard MSIV

Examination of FP-27A shows that the "B" and "C" main steam lines are the shortest. The following applies to steam line 24"-SHP-902-1B.

Nozzle elevation (Center Line) = 338'-10''

Straight pipe, horizontal

L = 15'-8" – 11'-11" = 3'-9" = 3.75'

Volume V = 2.48 ft^2 x 3.75 ft = 9.3 ft^3

90^0 Pipe Bend

Assume long radius bend so radius of curvature = 1.5 * nominal diameter

L = π*(2*1.5 x 24 in)/4 = 4.712 ft.

Volume = 2.48 ft^2 x 4.712 ft = 11.69 ft^3

Vertical pipe, Height H = 46'-9 = 46.75'

Volume = 2.48 ft^2 x 46.75 ft = 115.94 ft^3

90^0 Pipe Bend

L = 4.712 ft.

Volume = 11.69 ft^3

Curved Horizontal Pipe,

R = 18'-0", angle = 180º – 138º - 18º = 24º

L = π*(2*18')*24/360 = 7.54'

Volume = 2.48 ft^2 x 7.54 ft = 18.70 ft^3

Straight Horizontal Pipe,

L = 14" + 8'-10 7/8" + 4'-3" = 14.32'

Volume = 2.48 ft^2 x 14.32 ft = 35.52 ft^3

90^0 Pipe Bend

L = 4.712 ft.

Volume = 11.69 ft^3

Vertical pipe, Height H = 292'-1" – 280'-0" = 12.08'

Volume = 2.48 ft^2 x 12.08 ft = 29.97 ft^3

45^0 Pipe Bend

Assume long radius bend so radius of curvature = 1.5 * nominal diameter

L = π*(2*1.5 x 24 in)*45/360 = 2.356 ft

Volume = 2.48 ft^2 x 2.356 ft = 5.843 ft^3

Horizontal pipe segment before inboard MSIV

L = 2'-11 15/16" = 2.995'

Volume = 2.48 ft^2 x 2.995 ft = 7.427 ft^3

Volume V_1 for failed MSL "B" between RPV nozzle & inboard MSIV

Total Volume

$\mathbf{V_{T1}}$ = 9.3 ft^3 + 11.69 ft^3 + 115.94 ft^3 + 11.69 ft^3 + 18.70 ft^3 + 35.52 ft^3 + 11.69 ft^3 + 29.97 ft^3 + 5.843 ft^3 + 7.427 ft^3 = 257.77 ft^3

Horizontal pipe volume

$\mathbf{V_{H1}}$ = 9.3 ft^3 + 18.70 ft^3 + 35.52 ft^3+ 7.427 ft^3 = 70.95 ft^3

Horizontal pipe surface area for gravitational aerosol deposition

$\mathbf{A_{H1}}$ = π D x L (Horizontal Length)

= π 1.777' x (3.75' + 7.54' + 14.32'+ 2.995') = π 1.777' x 28.61' = 159.72 ft^2

Volume between Inboard & Outboard MSIVs

Pipe between Inboard & Outboard MSIVs, horizontal

Length = 16'-4 1/16" = 16.34 ft

$\mathbf{V_{T2}}$ = 2.48 ft^2 x 16.34 ft = 40.52 ft^3

Horizontal pipe volume

$\mathbf{V_{H2}}$ = Same as total volume = 40.52 ft^3

Horizontal pipe surface area for gravitational aerosol deposition

$\mathbf{A_{H2}}$ = π D x L (Horizontal Length) = π 1.777' x 16.34' = 91.22 ft^2

Volume V_1 for failed MSL between RPV nozzle & outboard MSIV

Total Volume

$\mathbf{V_1 = V_{T1} + V_{T2}}$ = 257.77 ft^3 + 40.52 ft^3 = 298.29 ft^3

Total Horizontal pipe volume

$\mathbf{V_H = V_{H1} + V_{H2}}$ = 70.95 ft^3 + 40.52 ft^3 = 111.47 ft^3

Total Horizontal Surface Area

$\mathbf{A_H = A_{H1} + A_{H2}}$ = 159.72 ft^2 + 91.22 ft^2 = 250.94 ft^2

Volume V_2 for failed MSL "B" between outboard MSIV & TSV

Length of outboard MSIV (5'-0") ignored.

Horizontal Length = 29'-5" – 6'-0" + 3'-6" + 26'-0" + 26'-0" + 26'-0" + 27'-0" + 5'-

9¾" = 137.8 ft = 138 ft FP-27C (Reference 9.51)

V_H = Horizontal Volume = 2.48 ft^2 x 138 ft = 342.24 ft^3 = 342 ft^3

Total Horizontal Surface Area

A_H = π D x L (Horizontal Length) = π 1.777' x 138' = 770.40 ft^2

Vertical Length = (El 276'-8" – El 249'-6") + (El 290'-0" – El 249'-6") = 67.67'

Rounded down to 67'

FP-27C and FP-27E (References 9.51 and 9.56)

V_v = Vertical Volume = 2.48 ft^2 x67 ft = 166 ft^3

V_2 = 342 ft^3 + 166 ft^3 = 508 ft^3

FP-27A shows that the "B" and "C" main steam lines are symmetrical so the dimensions from steam line 24"-SHP-902-1C will be used. The only difference is that for MSL "C", the MSL is divided into sub volumes differently. Volume 3 (V_3) represents the volume from the RPV to the inboard MSIV and Volume 4 (V_4) is the volume between the inboard MSIV and the TSV. The following applies to steam line 24"-SHP-902-1C.

Volume of Intact MSL between RPV nozzle & inboard MSIV

Total Volume

V_{T3} = 9.3 ft^3 + 11.69 ft^3 + 115.94 ft^3 + 11.69 ft^3 + 18.70 ft^3 + 35.52 ft^3 + 11.69 ft^3 + 29.97 ft^3 + 5.843 ft^3 + 7.427 ft^3 = 257.77 ft^3

Horizontal pipe volume

V_{H3} = 9.3 ft^3 + 18.70 ft^3 + 35.52 ft^3+ 7.427 ft^3 = 70.95 ft^3

Horizontal pipe surface area for gravitational aerosol deposition

A_{H3} = π D x L (Horizontal Length)

= π 1.777' x (3.75' + 7.54' + 14.32'+ 2.995') = π 1.777' x 28.61' = 159.72 ft^2

Volume V_3 for Intact MSL between RPV nozzle & inboard MSIV

Total Volume

V_T = 257.77 ft^3

Total Horizontal pipe volume

V_H = 70.95 ft^3

Total Horizontal Surface Area

A_H = 159.72 ft^2

Volume between Inboard & Outboard MSIVs

Pipe between Inboard & Outboard MSIVs, horizontal

Length = 16'-4 1/16" = 16.34 ft

V_{T1} = Volume = 2.48 ft^2 x 16.34 ft = 40.52 ft^3

Horizontal pipe volume

V_{H1} = Same as total volume = 40.52 ft^3

Horizontal pipe surface area for gravitational aerosol deposition

A_{H1} = π D x L (Horizontal Length) = π 1.777' x 16.34' = 91.22 ft^2

Volumes between Outboard MSIV & TSV

Length of outboard MSIV (5'-0") ignored.

Horizontal Length = 29'-5" – 6'-0" + 3'-6" + 26'-0" + 26'-0" + 26'-0" + 27'-0" + 5'-9¾" = 137.8 ft = 138 ft FP-27C (Reference 9.51)

V_H = Horizontal Volume = 2.48 ft^2 x 138 ft = 342.24 ft^3 = 342 ft^3

Total Horizontal Surface Area

$A_H = \pi$ D x L (Horizontal Length) = π 1.777' x 138' = 770.40 ft^2

Vertical Length = (El 276'-8" – El 249'-6") + (El 290'-0" – El 249'-6") = 67.67'

Rounded down to 67'

FP-27C and FP-27E (References 9.51 and 9.56)

V_v = Vertical Volume = 2.48 ft^2 x 67 ft = 166 ft^3

Volume V_4 for Intact MSL between Inboard MSIV and TSV

Total Volume

V_T = 40.52 ft^3 + 342 ft^3 + 166 ft^3 = 548.52 ft^3

Total Horizontal pipe volume

$V_H = V_{H1} + V_{H2}$ = 342 ft^3 + 40.52 ft^3 = 382.52 ft^3

Total Horizontal Surface Area

A_H = 770.4 ft^3 + 91.22 ft^3 = 861.62 ft^3

1st Pass Attributes – General Overview

Yes	No	Attribute
☒	☐	The purpose/scope is clear and well defined. You should be able to understand the purpose without resorting to consultation with the preparer. (4.3.2)
☒	☐	The reason or need for the product is clearly discussed. (4.3.2)
☒	☐	You possess the proper knowledge and skill sets needed for the review. **If** additional expertise is needed, **then** those reviews have been scheduled to ensure that appropriate knowledgeable “experts” are utilized for reviews.
☒	☐	The Methodology is appropriate for the purpose and scope of the document, and is clearly documented.

2nd Pass Attributes – Technical Review

Yes	No	Attribute
☒	☐	Input Parameters are clearly listed, defined with source documentation.
☒	☐	The Inputs are valid and are referenced to a quality documented reference.
☒	☐	Assumptions are reasonable and well documented.
☒	☐	The Methodology is appropriate and Equations Used have been verified- Ensure proper methodology & units
☒	☐	**If** an Alternate Calculation Tools or Methods was used as the review method, **then** that analysis has been attached to the final document
☒	☐	The Numerical calculations and computations have been verified correct- validate the numbers
☒	☐	The acceptance criteria is consistent with the Design Basis, Design Standards and applicable codes.
☒	☐	Does the analysis consider new potential failure modes and disposition them as appropriate? If none are indicated, is this appropriate?
☒	☐	Does the product consider the most limiting or bounding design basis conditions?
☒	☐	Are the results consistent with actual plant response and do they appear reasonable?
☒	☐	Does the conclusion clearly support the purpose as described?

3rd Pass Attributes – Administrative

Yes	No	Attribute
☒	☐	Check references- are they the correct rev
☒	☐	Check procedures used- are they the correct rev
☒	☐	Check for Spelling Errors, Punctuation and Grammar
☒	☐	Check for simplicity and readability
☒	☐	Are the proper forms included in the document and filled out correctly
☒	☐	Check Page and Attachment Numbering
☒	☐	Right Boxes Checked on Forms
☒	☐	Proper process has been used, Major Rev, Minor Rev, EC/ECR etc.
☒	☐	Appropriate boxes are signed off or marked N/A
☒	☐	Appropriate definition and use of abbreviations and acronyms

Reviewer: Marvin Morris Marvin Morris 7/12/19

Print / Signature Date

Attachment 7
Proposed Exemption to 10 CFR 50, Appendix J

1.0 INTRODUCTION

The current JAFNPP Technical Specifications include MSIV leakage in the overall Primary Containment leakage L_a. The new LOCA analysis evaluates the MSIV leakage as a separate release pathway from the containment leakage while maintaining the same containment leakage L_a. If the current TS is retained, it would be double counting the MSIV leakage contribution. The proposed change would provide separate MSIV leakage limits and containment leakage limits. This requires an exemption from some requirements of Appendix J.

10 CFR 50.54(o) requires that Primary Containments be subject to the requirements of Appendix J to 10 CFR Part 50. Appendix J specifies the leakage rate test requirements, schedules and acceptance criteria for test of the leak-tight integrity of primary reactor containment and systems and components that penetrate the containment. In Option B of Appendix J, Paragraph III.A requires that the overall integrated leakage rate (Type A test) must not exceed the allowable leakage (L_a) with margin, as specified in the Technical Specifications (TS), and Paragraph III.B requires the sum of the leakage of Type B and Type C leakage rate tests to be less than the performance criterion (L_a) with margin as specified in the TS. These tests, as specified in the 10 CFR 50, Appendix J definitions, include the contribution from the four main steam line penetrations, referred to as Main Steam Isolation Valve (MSIV) leakage. MSIV leakage consists of the combined leakage of the four main steam lines where each line contains two Main Steam Isolation Valves (MSIV's) in series and is tested in accordance with TS Surveillance Requirement 3.6.1.3.10. Concurrent with the request for license amendment, James A. FitzPatrick Nuclear Power Plant (JAFNPP) hereby requests an exemption from the requirements of 10 CFR 50, Appendix J, Option B, Paragraphs III.A and III.B to permit exclusion of the MSIV leakage contribution from the overall integrated leakage rate Type A test measurement and from the sum of the leakage rates from Type B and Type C tests. This request for exemption is similar to exemptions granted for Vermont Yankee Nuclear Power Station on March 17, 2005 (TAC No. MC0253) and for Browns Ferry Nuclear Plant, Units 2 and 3 on March 14, 2000 (TAC Nos. MA6815 and MA6816).

2.0 10 CFR 50.12 – SPECIFIC EXEMPTIONS

10 CFR 50.12 states that the Commission will not consider granting an exemption unless special circumstances are present. JAFNPP believes this request meets the criterion of a special circumstance as defined in 50.12(a)(2)(ii), which states, '"Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."

Applicable Rule

The pertinent rule is 10 CFR 50, Appendix J, Option B, Paragraphs III.A and III.B, which state in part:

(1) Type A Test

The leakage rate must not exceed the allowable leakage rate (L_a) with margin, as specified in the Technical Specifications.

And

(2) Type B and C Tests

The tests must demonstrate that the sum of the leakage rates at accident pressure of Type B tests, and pathway leakage rates from Type C tests, is less than the performance criterion (L_a) with margin, as specified in the Technical Specification.

The underlying purpose of the rule is to ensure the actual radiological consequences of Design Basis Accidents (DBA's) remain below those analyzed as demonstrated through the measured containment and local leakage rate tests.

3.0 REQUESTED EXEMPTION

JAFNPP requests a permanent exemption from: 1) the requirements of 10 CFR 50, Appendix J, Option B, Paragraph III.A, to allow exclusion of the MSIV leakage from the overall integrated leakage rate measured when performing a Type A test, and 2) the requirements of 10 CFR 50, Appendix J, Option B, Paragraph III.B, to allow exclusion of the MSIV leakage from the combined leakage rate of all penetrations and valves subject to Type B and C tests.

4.0 JUSTIFICATION

The JAFNPP Primary Containment leakage rate testing program complies with 10 CFR 50, Appendix J, Option B provisions for Type A, Type B and Type C tests. MSIV leakage currently is included in the Type A overall containment integrated leakage rate total and added to the combined Type B and C leakage rate total.

10 CFR 50, Appendix J testing ensures Primary Containment leakage following a design basis Loss-of-Coolant Accident (LOCA) will be within the allowable leakage limits specified in plant Technical Specifications (TS) and assumed in the safety analysis for determining radiological consequences, 1.5 weight percent per day (L_a). For return to power, the JAFNPP acceptance criteria for the Integrated Leakage Rate Test, or Type A test, is ≤ 0.75 L_a, and ≤ 0.60 L_a for combined Type B and C tests.

In Reference 1, the NRC endorsed NEDC-31858P, Revision 2, "'BWROG Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems." This Topical Report describes the need for this exemption in the context of proposed increases in main steam line leakage rates. NRC endorsement of the Topical Report underscores the fundamental acceptability of this exemption request from a regulatory perspective. The radiological consequences of MSIV leakage, as discussed in this amendment request, is modeled as a separate Primary Containment release path to the environment that bypasses Secondary Containment. The LOCA dose calculation assumes all MSIV leakage migrates to the Turbine Building. However, if MSIV leakage were also included as part of L_a in the Primary-to-Secondary Containment modeling, it would be "double counted."

MSIV leakages are periodically measured as part of the 10 CFR 50, Appendix J program to ensure the leakage rates will not exceed the TS limit, which is the maximum rate assumed in the safety analysis for radiological consequences. Therefore, since the MSIV leakage is considered a separate leakage path and its effects are specifically accounted for in the dose analysis, it is appropriate to exclude MSIV leakage from Type A and from Type B and C test result totals. As such, the requirement of 10 CFR 50, Appendix J, Option B, Paragraphs III.A and III.B, that the MSIV leakage be included as part of Type A and as part of Type B and C test results is not necessary to achieve the underlying purpose of the rule.

Approval of this exemption request will align the TS limits with the LOCA dose calculation. The L_a leakage value of 1.5 weight percent per day is unchanged.

In summary, the JAFNPP Primary Containment Leakage Rate Testing Program will more closely align with the assumptions used in associated accident consequence analyses. Corresponding changes to the TS which implement the requested exemption are also proposed.

5.0 AUTHORIZED BY LAW

The proposed exemption is authorized by law and has been previously granted to other licensees.

For example, References 2 and 3 from the NRC granted this exemption to Vermont Yankee Nuclear Power Station and to the Tennessee Valley Authority for the Browns Ferry Nuclear Plant, Units 2 and 3.

6.0 NO UNDUE RISK TO PUBLIC HEALTH AND SAFETY

The exemption presents no undue risk to public health and safety. MSIV leakage for the JAFNPP Design Basis Accident analysis has been accounted for separately from the overall leakage associated with the Primary Containment boundary (Type A) and local leakage rate total (Type B and C). As such, the inclusion of MSIV leakage as part of Type A and as part of Type B and C test results is not necessary to ensure the actual radiological consequences of DBA's remain below the regulatory limit. As such, the proposed exemption presents no undue risk to public health and safety.

7.0 CONSISTENT WITH COMMON DEFENSE AND SECURITY

The common defense and security are not endangered by this exemption request. Further, the potential impact on public health and safety has been determined to be inconsequential.

8.0 SPECIAL CIRCUMSTANCES

Special circumstances are present which warrant this exemption. The applicable criterion from 10 CFR 50.12(a)(2) is identified as:

(ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.

The underlying purpose of the rule is to ensure that the radiological consequences of DBA's remain below the applicable regulatory limits and are supported by the actual, periodic measurement of containment leakage (Type A) and local leakage rate measurement (Type B and C). Although Type A and Type B and C leakage tests are defined as a measurement of those leakages, inclusion of the MSIV leakage results in double counting, once as a part of the actual containment leakage and again as part of MSIV leakage used in dose calculations. This exemption resolves the special circumstance in which requiring inclusion of MSIV leakage in the Type A and Type B and C leakage is not necessary to achieve the underlying purpose of the rule.

9.0 ENVIRONMENTAL IMPACT

The exemption does not cause additional construction or operational activities to be conducted that may significantly affect the environment. No plant configuration changes are required.

The exemption does not result in an increase in adverse environmental impact previously evaluated, does not result in a change to normal effluents or power levels, and does not affect any matter not previously reviewed by the NRC which may have a significant adverse environmental impact.

The exemption does not alter the land use for the plant; water uses or impacts on water quality; air or ambient air quality. It does not affect the ecology of the site and vicinity and does not affect the noise emitted by the station. Therefore, the exemption does not affect the analysis of environmental impacts described in the environmental report.

10.0 REFERENCES

1. Letter from Frank M. Akstulewicz, USNRC, to T.A. Green, BWROG Group Projects, dated March 3, 1999, Safety Evaluation of GE Topical Report, NEDC-31858P Revision 2, September 1993.

2. Letter from Richard B. Ennis, USNRC Project Directorate I, to Michael Kansler, Entergy Nuclear Operations Inc., dated March 17, 2005, Vermont Yankee Nuclear Power Station - Issuance of Exemption from 10 CFR Part 50, Appendix J (ML041310359).

3. Letter from William O. Long, USNRC Project Directorate II, to J. A. Scalice, Tennessee Valley Authority, dated March 14, 2000, Browns Ferry Nuclear Plant, Units 2 and 3 - Issuance of Exemption from 10 CFR Part 50, Appendix J (ML003691985).

Attachment 8
Response to Standard NRC Questions Concerning Credit for Standby Liquid Control System

This Attachment addresses each consideration of the NRC guidance outlined in Reference 1 in order to demonstrate that the SLC system at JAFNPP is capable of performing its AST function.

1. ***The SLC system should be classified as ESF grade in accordance with 10 CFR 50.34(b) or as a safety-related system as defined in 10 CFR 50.2, and satisfy the regulatory requirements for such systems.***

   Response:

   In accordance with FSAR Section 1.2, the SLC system is a special safety system that is treated as a safety-related system at JAFNPP. Despite not being classified as safety related (as defined in 10 CFR 50.2) or as ESF grade (in accordance with 10 CFR 50.34(b)), the SLC system compares favorably with the guidance that would result in its acceptance in support of AST implementation. Responses to items (a) through (e) follow.

   (a) The SLC system should be provided with standby AC power supplemented by the emergency diesel generators.

   Response:

   Power and control for each of the two SLC system pumps are fed from separate essential Motor Control Centers (MCCs) which are in turn fed from divisionally separate essential buses with standby power supplied by the Emergency Diesel Generators (EDGs). The SLC squib valves and their associated continuity meters are powered by these same essential MCCs, providing divisionally separate essential power to these valves. SLC system pressure and level indication is powered by a non-essential power panel that is powered via a switchable power source to either of two essential buses, each of which can be supplied by a Diesel Generator.

   The SLC system tank heaters and suction line heat tracing are not relied upon to meet its safety objective. The JAFNPP Technical Specifications require verification that the sodium pentaborate solution and the SLC suction piping is within established temperature limits every 24 hours.

   Therefore, it is concluded that the SLC system is provided with standby AC power supplemented by the EDGs.

   (b) The SLC system should be seismically qualified in accordance with Regulatory Guide 1.29 and Appendix A to 10 CFR Part 100.

   Response:

   As described in the Section 3.9.4 of the JAFNPP FSAR, the SLC system equipment and piping required for injection of the sodium pentaborate solution has been designed or qualified to Seismic Class I requirements.

   (c) The SLC system should be incorporated into the plant's ASME Code ISI and IST Programs based upon the plant's code of record (10 CFR 50.55a).

Response:

The applicable components (Class 2 components) of the SLC system are inspected and tested in accordance with the ASME Boiler and Pressure Vessel Code Inservice Inspection (ISI) and Inservice Testing (IST) programs, as required by 10 CFR 50.55(a). The Class 2 boundary is from the SLC outboard injection check valves to the reactor vessel. The ISI scope includes the SLC piping and components within the Class 2 boundary, and the IST program scope includes the SLC injection check valves.

(d) The SLC system should be incorporated into the plant's Maintenance Rule program consistent with 10 CFR 50.65.

Response:

The SLC system is in the JAFNPP Maintenance Rule program consistent with 10 CFR 50.65.

(e) The SLC system should meet 10 CFR 50.49 and Appendix A (GDC 4) to 10 CFR 50.

Response:

As a special safety system (required only during special events as described in the JAFNPP FSAR), the SLC system was not originally evaluated as part of the JAFNPP Environmental Qualification (EQ) program. Therefore, it must be shown that electrical equipment in the SLC system needed for the AST function is located in a mild environment (and thus is not subject to 10 CFR 50.49).

All major electrical components necessary for SLC system function (including both pump motors, both squib valves, the storage tank level transmitter, and the pump discharge pressure transmitter) are located in the JAFNPP Reactor Building on elevation 326'-9" within the berm area along column 6, between lines A and R. As noted in Section 4.2.3.1 of JAF-RPT-MISC-04046, "Environmental Qualification Service Conditions," a LOCA has minimal temperature effects on this general area of the Reactor Building. A location specific radiological analysis for the SLC system demonstrated that the total integrated dose (normal plus LOCA radiation) to the SLC system components in this area would not exceed 1.0E04 rad (combined gamma, beta, and neutron) prior to 7 hours after the start of the LOCA.

The control switch used to initiate SLC injection is located in the Control Room, which is a mild environment.

Supporting electrical commodities (e.g., cables, splices, and terminal blocks) associated with the subject components are not confined to the berm area described above; thus, the location specific dose analysis above is not applicable. Instead, it was shown that supporting electrical commodities in portions of the SLC system needed for the AST function

are either (a) qualified for service in harsh environments (and maintained as part of the JAFNPP EQ program) or (b) confirmed to be routed exclusively in mild environments (and thus not subject to 10 CFR 50.49). Traceability to Qualification Documentation Reports (QDRs) for cables is established by the JAFNPP Mark Number specified by the plant purchase order (and tracked as Cable Code). Cables not traced to a QDR were shown to be in a mild environment.

2. ***The licensee should have plant procedures for injecting the sodium pentaborate using the SLC system. This information would be reviewed by the appropriate technical review branch, as requested by the lead SPSB reviewer.***

   (a) A review of the procedures may be appropriate if a reliability approach is taken (4(a) below) due to timing considerations for the injection of chemicals.

   Response:

   Due to the identification of non-redundant active components in the SLC system, a reliability approach is taken at JAFNPP. Information to support a review is provided in responses to items (b) through (f) below.

   (b) The SLC activation steps are placed in a safety-related plant procedure.

   Response:

   The steps necessary for the Control Room operator to manually initiate SLC injection are contained in a station Emergency Procedure used for LOCA mitigation. This procedure is safety-related and falls under the JAFNPP Quality Assurance program. Future changes to the procedure would be made under the provisions of 10CFR50.59. A controlled copy of this procedure is located in the Control Room.

   (c) The steps [are] activated by parameters that are symptoms of imminent or actual core damage.

   Response:

   The parameters used to direct activation of the SLC system for control of Suppression Pool pH are high Drywell pressure combined with high Drywell radiation as indicated on the Containment High-Range Radiation Monitors. High Drywell radiation is a symptom of actual core damage. High Drywell pressure is an indication of a LOCA.

   (d) The instrumentation relied upon to provide this indication meets the quality requirements for a Type E variable as defined in RG 1.97 Tables 1 and 2.

   Response:

   The high Drywell pressure instruments monitor Type B, C, and D variables listed in RG 1.97 for BWRs. The containment high range radiation instruments monitor Type C and E variables listed in RG 1.97 for BWRs. All the above instrumentation meets Category 1 design and

qualification criteria as required by RG 1.97 for multiple use applications. Control Room indications for the above instrument loops are required to be operable at JAFNPP by TS 3.3.3.1.

(e) Personnel receive initial and periodic refresher training in the procedure.

Response:

Licensed personnel are initially trained and receive periodic refresher training on these procedures as part of the Licensed Operator Requalification Training program.

(f) Other plant procedures (e.g., ERGs/SAGs) that call for termination of SLC as a reactivity control measure are appropriately revised to enable SLC injection for pH control.

Response:

As an implementing action for this LAR, EGC will review the EOPs, SAGs, and supporting abnormal operating procedures and revise as necessary to ensure that there are no procedural steps that would inhibit or suspend the injection of the entire contents of the SLC system sodium pentaborate solution storage tank under the LOCA conditions assumed in the LOCA Analysis.

3. A sufficient concentration and quantity of sodium pentaborate should be available for injection into the reactor vessel to control pH in the suppression pool.

Response

Reference 6.24 of Attachment 1 demonstrates that there is a sufficient concentration and quantity of sodium pentaborate solution available for injection into the reactor vessel post-LOCA to maintain the pH in the Suppression Pool above 7.0 for the duration of the event.

4. The SLC system should not be rendered incapable of performing its AST function due to a single failure of an active component. For this purpose the check valve is considered an active device for AST since the check valve must open to inject sodium pentaborate for suppression pool pH control.

If the SLC system cannot be considered redundant with respect to its active components, this lack of redundancy may be offset if the licensee can satisfy (a) or (b) or (c) below:

(a) Acceptable quality and reliability of the non-redundant active components and/or compensatory actions in the event of failure of the non-redundant active components.

Under this approach, the licensee should provide the following information in justifying the lack of redundancy of active components in the SLC system:

Response:

The following information is provided to support a reliability evaluation of the system by the NRC staff.

(1) The licensee should identify the non-redundant active components in the SLC system and provide their make, manufacturer, and model number. The staff reviewer will compare this information with performance data for the component from industry data bases and other sources.

Response:

The non-redundant active components of the SLC system are (1) the check valves (i.e., two in series) located on the SLC injection line and (2) the SLC initiation control switch in the Control Room. Details regarding these components are listed below.

Component ID	Component Name	Manufacturer	Model #
11A-S1	SLC Control Switch	General Electric	SB-1
11SLC-16	Pump Discharge to Reactor Outboard Check Valve	Anchor Darling	W8822726
11SLC-17	Pump Discharge to Reactor Inboard Check Valve	Velan Engineering Company	W7-334-13MS

(2) The licensee should provide the design-basis conditions for the component and the environmental and seismic conditions under which the component may be required to operate during a design-basis accident. Environmental conditions include design-basis pressure, temperature, relative humidity and radiation fields. The staff reviewer will compare the environmental and seismic conditions associated with the design basis accident to the conditions for which the component was designed to determine whether the component is capable of performing its intended function.

Response:

The control switch is in the Control Room which is a mild environment and therefore will not be affected by the DBA environmental conditions. Control panel 09-3 (in which the control switch is mounted) is Class I equipment supplied by General Electric.

The check valves identified above are 1 ½ inch check valves in SLC system piping through Drywell penetration X-42. Post-LOCA environmental conditions for these components are documented in the JAFNPP Environmental Qualification Service Conditions. The inboard check valve (11SLC-17) is located in EQ Zone DW300DW4. Post-LOCA environmental conditions include peak temperature of 285°F, bounding

Drywell pressure of 60 psia, relative humidity of 100%, a 24-hour gamma radiation dose of 3.308E7 Rad, and a 24-hour beta radiation dose of 1.574E8 Rad. The outboard check valve (11SLC-16) is located in EQ Zone RB326. Because this location is outside the Primary Containment, the valve is not affected by pressure increases or flooding conditions as a result of the LOCA scenario. Post-LOCA environmental conditions for this component include peak temperature of 111°F, a 24-hour gamma radiation dose of 3.08E4 Rad, and a 24-hour beta radiation dose of 4.75E4 Rad.

(3) The licensee should indicate whether the component was purchased in accordance with Appendix B to 10 CFR Part 50. If the component was not purchased in accordance with Appendix B, the licensee should provide information on the quality standards under which it was purchased. For the latter situation, information on the component would be reviewed by the appropriate technical review branch responsible for the component as requested by the lead SPSB reviewer.

Response:

The control switch and the check valves were purchased as original equipment for JAFNPP with administrative procedures (including procurement and material control) implemented in accordance with the requirements of 10 CFR 50, Appendix B. The SLC system is a special safety system; however, it is treated as safety related by the licensee; thus, all repair, replacement and modification work is performed in accordance with the Exelon Quality Assurance Topical Report, which implements 10 CFR 50, Appendix B.

(4) The licensee should provide the performance history of the component both at the licensee's facility and in industry databases such as EPIX and NPRDS. The staff reviewer will use this information to evaluate the reliability of the component relative to other components used in safety-related applications.

Response:

The containment isolation check valves are stainless steel 1½ inch valves, mounted horizontally in the injection line. For an anticipated transient without scram event, the containment isolation check valves are designed to open against full reactor pressure. For the AST function, the system operating requirements are reduced since the reactor pressure is much lower following a design basis LOCA.

In accordance with the IST program, these check valves are inspected and tested during scheduled refueling outages. Technical Specifications require a system flow test to the vessel, which demonstrates the operability of the integrated system, at least once every 24 months on a staggered test basis. A review of the IST databases at JAFNPP was performed, and no instances of the SLC check valves failing to open were identified.

Reference 2 documents a review and evaluation of check valve failures. The review found that the overall failure rate for all check valves was 0.00996 per year. The failure rate of the check valves < 2 inches was 0.00706 per year. In the distribution of failures, the restricted flow and failed closed modes were each responsible for only 7 percent of the valve failures. In the < 2 inches size group, the fraction of stuck closed failures was approximately 0.15 resulting in a failed closed failure rate of 0.001059 per year. This data indicates that check valves < 2 inches are very reliable.

A review of the EPIX database was performed, and no failures of the check valves failing to open were identified.

Additionally, no failures of the SLC control switch were identified in the EPIX database. Previous SLC system functional testing at JAFNPP has not identified any problems with the switch that would preclude SLC system injection. Based on the above, any failure that would prevent the start of at least one pump is highly improbable and EGC expects the SLC control switch to operate when required.

Based on this information, the stuck closed failure of these valves in the common SLC system discharge line, and the failure of the SLC control switch are highly unlikely.

(5) The licensee should provide a description of its inspection and testing program including standards, frequency, and acceptance criteria. The staff reviewer will use this information to evaluate the licensee's activities to monitor the component's performance at the facility. The information on the component would be reviewed by the appropriate technical review branch responsible for the component, as requested by the lead SPSB reviewer.

Response:

The check valves listed in the response to request (4)(a)(1) above are tested in accordance with Technical Specifications and IST program requirements. These valves have an open function to support injection of sodium pentaborate and a close function to meet Primary Containment isolation requirements.

SR 3.1.7.8 requires verification of flow through one SLC subsystem from a pump into the RPV every 24 months in accordance with the Surveillance Frequency Control Program. This allows the system to be tested for complete continuity during a shutdown when demineralized water can be pumped into the RPV. During the test, one of the subsystems, including an explosive valve, is initiated, and it is verified that a flow path from the SLC pump to the RPV is available. This testing necessitates replacement of the explosive charge in the shear plug valves. Both complete flow paths are tested every 48 months. This test verifies the flowpath to the RPV and particularly the proper operation of the check valves in the Drywell and the control switch in the Control Room.

Finally, SR 3.1.7.9 requires verification that all heat traced piping between the storage tank and pump suction is unblocked every 24 months in accordance with the Surveillance Frequency Control Program and once within 24 hours after piping temperature is restored within limits.

In summary, the required Technical Specifications and ASME Code testing provide assurance of a high degree of system reliability and confidence that the system injection function would perform satisfactorily if called upon following a design basis LOCA.

(6) The licensee should also indicate potential compensating actions that could be taken within an acceptable time period to address the failure of the component. An example of a compensating action might be the ability to jumper a switch in the control room to overcome its failure. The staff reviewer will consider the availability of compensating actions and the likelihood of successful injection of the sodium pentaborate where non-redundant active components fail to perform their intended functions.

Response:

Potential compensating actions could be taken (if needed) within two hours of discovering failure of the SLC Control Switch or the check valves located on the SLC injection line. Local operator actions in the Reactor Building (outside the Primary Containment) can be used to align an additional means of injecting boron using the Control Rod Drive (CRD) Hydraulic System at JAFNPP. Although available for potential use should the flow path using SLC pump(s) be disabled, the AST analysis for JAFNPP does not credit this method for pH control. Given the mission time of 5 hours, there is a high likelihood of successful injection of the sodium pentaborate solution if any of these highly reliable components were to fail.

(b) An alternative success path for injecting chemicals into the suppression pool…

Response:

Per the response to item 4.(a) above, JAFNPP has selected the option of demonstrating that the single failure components do not materially degrade the overall reliability of the SLC system to inject sodium pentaborate for Suppression Pool pH control.

(c) 10 CFR 50.67 and Appendix A, General Design Criterion (GDC) 19 doses are met even if pH is not controlled…

Response:

Per the response to item 4(a) above, JAFNPP has selected the option of demonstrating that the single failure components do not materially degrade the overall reliability of the SLC system to inject sodium pentaborate for Suppression Pool pH control.

References:

1. "Guidance on the Assessment of a BWR SLC system for pH Control," Dated February 12, 2004 (ADAMS Accession No. ML040640364).

2. NUREG/CR-5944, "A Characterization of Check Valve Degradation and Failure Experience in the Nuclear Power Industry," Dated September 30, 1993 (ADAMS Accession No. ML040340445).

Attachment 9
JAF-CALC-19-00004, Revision 0 -
Control Room Atmospheric Dispersion for Turbine Building Release

ATTACHMENT 1
Design Analysis Cover Sheet

Design Analysis	JAF-CALC-19-00004	**Last Page No.** [6]	26
Analysis No.: [1]	~~JAF-CALC-19-0004~~ AMW 5/1/19	**Revision:** [2]	0 Major ☒ Minor ☐
Title: [3]	Control Room Atmospheric Dispersion for Turbine Building Release		
EC No.: [4]	626767	**Revision:** [5]	0

Station(s): [7]	JAF	**Component(s):** [14]	
Unit No.: [8]	0	N/A	
Discipline: [9]	DEM		
Descrip. Code/Keyword: [10]	A1/L3		
Safety/QA Class: [11]	Safety-Related		
System Code: [12]	N/A		
Structure: [13]	TB		

CONTROLLED DOCUMENT REFERENCES [15]

Document No.:	From/To	Document No.:	From/To
JAF-CALC-RAD-04409	From	FA-1G	From
JAF-CALC-RAD-00007	From	FB-45A	From
FA-2G	From	FP-27C	From
FA-16B	From	FB-32G	From
FC-32N	From	FP-27D	From
FB-32L	From	ECR #5000012124 (JAF-06-11436)	From
TODI NF194653	From	12966.41 Problem 772	From
12966.41 Problem 631	From	MSK-127D1	From

Is this Design Analysis Safeguards Information? [16] Yes ☐ No ☒ If yes, see SY-AA-101-106

Does this Design Analysis contain Unverified Assumptions? [17] Yes ☐ No ☒ If yes, ATI/AR#:

This Design Analysis SUPERCEDES: [18] **N/A** **in its entirety.**

Description of Revision (list changed pages when all pages of original analysis were not changed): [19]
Initial Issue

Preparer: [20]	Brian Froese (ENERCON)		5/1/19
	Marvin Morris (ENERCON, Attachment B only)		5/1/19
	Print Name	Sign Name	Date

Method of Review: [21] **Detailed Review** ☒ **Alternate Calculations (attached)** ☐ **Testing** ☐

Reviewer: [22]	Julia Sharma (ENERCON)		5/2/19
	Print Name	Sign Name	Date

Review Notes: [23] Independent review ☒ Peer review ☐

The document has been reviewed in its entirety and found to be acceptable. All recommended changes were discussed, accepted, and incorporated into the final document.

(For External Analyses Only)

External Approver: [24]	Jared Monroe (ENERCON)		5/2/19
	Print Name	Sign Name	Date

Exelon Reviewer: [25]	Annie Wong Print Name	 Sign Name	5/8/19 Date
Independent 3rd Party Review Read? [26] **Yes** ☐ **No** ☐			
Exelon Approver: [27]	John Massari Print Name	 Sign Name	5/15/2019 Date

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis
Page 1 of 3

Design Analysis No.: JAF-CALC-19-00004 Rev: 0
Contract #: 00674335 Release #: _____

No	Question	Instructions and Guidance	Yes / No / N/A
1	Do assumptions have sufficient documented rationale?	All Assumptions should be stated in clear terms with enough justification to confirm that the assumption is conservative. For example, 1) the exact value of a particular parameter may not be known or that parameter may be known to vary over the range of conditions covered by the Calculation. It is appropriate to represent or bound the parameter with an assumed value. 2) The predicted performance of a specific piece of equipment in lieu of actual test data. It is appropriate to use the documented opinion/position of a recognized expert on that equipment to represent predicted equipment performance. Consideration should also be given as to any qualification testing that may be needed to validate the Assumptions. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
2	Are assumptions compatible with the way the plant is operated and with the licensing basis?	Ensure the documentation for source and rationale for the assumption supports the way the plant is currently or will be operated post change and they are not in conflict with any design parameters. If the Analysis purpose is to establish a new licensing basis, this question can be answered yes, if the assumption supports that new basis.	☒ ☐ ☐
3	Do all unverified assumptions have a tracking and closure mechanism in place?	**If** there are unverified assumptions without a tracking mechanism indicated, **then** create the tracking item either through an ATI or a work order attached to the implementing WO. Due dates for these actions need to support verification prior to the analysis becoming operational or the resultant plant change being op authorized.	☐ ☐ ☒
4	Do the design inputs have sufficient rationale?	The origin of the input, or the source should be identified and be readily retrievable within Exelon's documentation system. If not, then the source should be attached to the analysis. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
5	Are design inputs correct and reasonable with critical parameters identified, if appropriate?	The expectation is that an Exelon Engineer should be able to clearly understand which input parameters are critical to the outcome of the analysis. That is, what is the impact of a change in the parameter to the results of the analysis? If the impact is large, then that parameter is critical.	☒ ☐ ☐
6	Are design inputs compatible with the way the plant is operated and with the licensing basis?	Ensure the documentation for source and rationale for the inputs supports the way the plant is currently or will be operated post change and they are not in conflict with any design parameters.	☒ ☐ ☐

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis
Page 2 of 3

Design Analysis No.: JAF-CALC-19-00004 Rev: 0

No	Question	Instructions and Guidance	Yes / No / N/A
7	Are Engineering Judgments clearly documented and justified?	See Section 2.13 in CC-AA-309 for the attributes that are sufficient to justify Engineering Judgment. Ask yourself, would you provide more justification if you were performing this analysis? **If** yes, the rationale is likely incomplete.	☒ ☐ ☐
8	Are Engineering Judgments compatible with the way the plant is operated and with the licensing basis?	Ensure the justification for the engineering judgment supports the way the plant is currently or will be operated post change and is not in conflict with any design parameters. **If** the Analysis purpose is to establish a new licensing basis, **then** this question can be answered yes, if the judgment supports that new basis.	☒ ☐ ☐
9	Do the results and conclusions satisfy the purpose and objective of the Design Analysis?	Why was the analysis being performed? Does the stated purpose match the expectation from Exelon on the proposed application of the results? **If** yes, **then** the analysis meets the needs of the contract.	☒ ☐ ☐
10	Are the results and conclusions compatible with the way the plant is operated and with the licensing basis?	Make sure that the results support the UFSAR defined system design and operating conditions, or they support a proposed change to those conditions. If the analysis supports a change, are all of the other changing documents included on the cover sheet as impacted documents?	☒ ☐ ☐
11	Have any limitations on the use of the results been identified and transmitted to the appropriate organizations?	Does the analysis support a temporary condition or procedure change? Make sure that any other documents needing to be updated are included and clearly delineated in the design analysis. Make sure that the cover sheet includes the other documents where the results of this analysis provide the input.	☐ ☐ ☒
12	Have margin impacts been identified and documented appropriately for any negative impacts (Reference ER-AA-2007)?	Make sure that the impacts to margin are clearly shown within the body of the analysis. If the analysis results in reduced margins ensure that this has been appropriately dispositioned in the EC being used to issue the analysis.	☐ ☐ ☒
13	Does the Design Analysis include the applicable design basis documentation?	Are there sufficient documents included to support the sources of input, and other reference material that is not readily retrievable in Exelon controlled Documents?	☒ ☐ ☐
14	Have all affected design analyses been documented on the Affected Documents List (ADL) for the associated Configuration Change?	Determine if sufficient searches have been performed to identify any related analyses that need to be revised along with the base analysis. It may be necessary to perform some basic searches to validate this.	☒ ☐ ☐
15	Do the sources of inputs **and** analysis methodology used meet committed technical and regulatory requirements?	Compare any referenced codes and standards to the current design basis and ensure that any differences are reconciled. If the input sources **or** analysis methodology are based on an out-of-date methodology or code, additional reconciliation may be required if the site has since committed to a more recent code	☒ ☐ ☐

Attachment 2
Owner's Acceptance Review checklist for External Design Analysis

Design Analysis No.: JAF-CALC-19-00004 **Rev:** 0

No	Question	Instructions and Guidance	Yes / No / N/A
16	Have vendor supporting technical documents and references (including GE DRFs) been reviewed when necessary?	Based on the risk assessment performed during the pre-job brief for the analysis (per HU-AA-1212), ensure that sufficient reviews of any supporting documents not provided with the final analysis are performed.	☐ ☐ ☒
17	Do operational limits support assumptions and inputs?	Ensure the Tech Specs, Operating Procedures, etc. contain operational limits that support the analysis assumptions and inputs.	☐ ☐ ☒
18.	List the critical characteristics of the product, and validate those critical characteristics.		

Create an SFMS entry as required by CC-AA-4008. SFMS Number: 65508

Table of Contents

1. PURPOSE

The purpose of this calculation is to determine new atmospheric dispersion coefficients (χ/Qs) for main steam isolation valve (MSIV) leakage to the Control Room and Technical Support Center (TSC). This can be used for determining the post-loss of coolant accident (LOCA) control room and TSC doses. As part of this effort, an appropriate MSIV leakage release location will be determined. Currently, χ/Qs are taken from JAF-CALC-RAD-00007 (Ref. 2). This new calculation will use a more realistic release location and current NRC approved methodology.

Meteorological (met) data from 1985-1992 taken from the existing fuel handling accident (FHA) calculation JAF-CALC-RAD-04409 (Ref. 1) and JAF-CALC-RAD-00007 (Ref. 2) will be used for this calculation to ensure consistency. The met data will be verified by running ARCON96 using the same inputs as the FHA calculation and ensuring the same results are obtained. This met data, which is from Nine Mile Point nuclear station, was previously approved for use by the NRC for use at FitzPatrick (Ref. 13). Similarly, this met data will also be benchmarked against more recent Nine Mile Point meteorological data to demonstrate they are reasonably consistent.

2. INPUTS

1. ARCON96 uses meteorological data in the form of electronic meteorological data files. The meteorological data used in this calculation was obtained from calculation JAF-CALC-RAD-04409 (1985-1992) (Ref. 1). The wind speed is in mph. This data is used to rerun a case from JAF-CALC-RAD-04409 in Attachment A to ensure consistency.

2. The meteorological tower lower wind data is recorded at 30 ft (9.1 m) (Ref. 1).

3. The meteorological tower intermediate wind data is recorded at 100 ft (30.49 m) (Ref. 1).

4. The Admin Building Roof elevation is 322’-0” (Ref. 8).

5. Hood #3 is the primary intake for Control Room ventilation (Ref. 10). This is consistent with existing calculations JAF-CALC-RAD-04409 (Ref. 1) and JAF-CALC-RAD-00007 (Ref. 2).

6. Hood #3 is located on the Admin Building roof at approximately column line 9.6 and Row V (Ref. 8). This location is consistent with existing calculations JAF-CALC-RAD-04409 (Ref. 1) and JAF-CALC-RAD-00007 (Ref. 2).

7. From the FA-16B Roof Plan (Ref. 6), Hood #3 is depicted in FA-1G (Ref. 9), which is also shown in FC-32N (Ref. 7). FC-32N Section A-A shows the Control Room HVAC intake hood centerline is at approximately elevation 326’ (Ref. 7, Section A-A). This location and elevation are consistent with existing calculations JAF-CALC-RAD-04409 (Ref. 1) and JAF-CALC-RAD-00007 (Ref. 2).

8. The elevation of the center of the turbine stop valves is 289’-3 ¼” (Ref. 11).

9. JAF ground elevation is 272’-0” (Ref. 3).

10. The distance between Hood #3 and column line 9 is 14’-7” (Ref. 6, Roof Plan).

11. The distance between column line 9 and column line 12 is 78'-0" (26'-0"+ 26'-0"+ 26'-0") (Ref. 6, Roof Plan). This includes the distance between column 11 and 12 of 26'-0", which is used as a separate input.

12. The distance from between column line 12 and the center of the Turbine Stop Valves is 32'-9 ¾" (27'-0" + 5'-9 ¾") (Ref. 11).

13. The intake to the TSC is located 13'-0" south of column line 11 and on Row B on elevation 300' (Ref. 12). This is confirmed as the inlet location in calculation JAF-CALC-RAD-00007 (Ref. 2).

14. The distance between Rows B and V is 65'-0" (23'-6" + 20'-0" + 21'-6") (Ref. 6).

15. The wind direction window used in the ARCON96 runs is 90°. This is the recommended value from Regulatory Guide 1.194 (Ref. 4).

16. The averaging sector width constant used in the ARCON96 runs is 4.3. This is the recommended value from Regulatory Guide 1.194 (Ref. 4).

17. The surface roughness length used in the ARCON96 runs is 0.2m. This is the recommended value from Regulatory Guide 1.194 (Ref. 4).

18. The minimum wind speed used in the ARCON96 runs is 0.5 m/s. This is the recommended value from Regulatory Guide 1.194 (Ref. 4) since the anemometer is capable of documenting wind speeds of less than 0.6 m/s (Ref. 1).

19. The secondary Control Room intake is located at approximately column line 9.7 and Row B. This is 7'-0" south of column line 10 (Ref. 12). This is confirmed as the inlet location in calculations JAF-CALC-RAD-04409 (Ref. 1) and JAF-CALC-RAD-00007 (Ref. 2).

3. ASSUMPTIONS

1. The Turbine Stop Valves (TSVs) are assumed to be the release point for MSIV leakage. Per References 19,20, and 21, the main steam lines (MSLs) have been seismically analyzed up to the Turbine Stop Valves. This is consistent with UFSAR (Ref. 15) Section 4.11.4. This effectively assumes a seismic event causes the LOCA, the Turbine Building is lost, and the release occurs directly from the TSVs to the environment. This is considered to be a more realistic release location than the minimum distance to an equivalent circular area projection of the Turbine Building as was done in calculations JAF-CALC-RAD-04409 (Ref. 1) and JAF-CALC-RAD-00007 (Ref. 2).

   Additional release pathways out of the Turbine Building in the event of a LOCA were evaluated in ECR 5000012124 (Ref. 16). The smoke ejector vents on top of the Turbine Building are normally closed and would not open in a post-LOCA scenario. The access door from the Turbine Building 323' elevation to the Administrative Building roof is normally kept closed, locked, and monitored by security. There is also a Turbine Building exhaust duct that is 60' from the Control Room Intake. This was also determined not to be an appropriate release location because the vent is monitored for radiation, and would be closed to

prevent a radiological release to the environment. In the event of a loss of offsite power (LOOP) in combination with the LOCA, there would be considerable holdup in the Turbine Building. Therefore, using the TSVs as the release location to the environment is both conservative and appropriate.

2. The Turbine Building Stop Valve release direction is assumed to be directly north of the primary Control Room intake. There are four Turbine Stop valves, each located between Rows S and X (Ref. 14) and are just north of Column 13 in the Turbine Building. Using the location directly north as the release location results in the shortest distance to the Control Room intake and therefore is conservative. Per Inputs 5 and 6, the Control Room intake hood is located along Row V, so this conservatively neglects any east-west direction offset.

3. The secondary Control Room intake (Input 19) is assumed to be bounded by the primary Control Room intake (Input 6). From a north-south standpoint, the secondary intake is slightly closer (estimated column line 9.7 vs. 9.6). However, it is offset an additional 65'-0" in the east-west direction between Row B and V. The additional distance would result in less conservative χ/Q values.

4. REFERENCES

1. JAF-CALC-RAD-04409, Rev. 0, CR χ/Qs Using ARCON96 Code for Post-FHA Releases from RB Track Bay Door and RB Vent

2. JAF-CALC-RAD-00007, Rev. 2 (including Rev. 2a), Power Uprate Program – Onsite and Offsite Post-Accident Atmospheric Dispersion Factors

3. FA-2G, Rev. 5, General Arrangement Elevations

4. Regulatory Guide 1.194, Rev. 0, Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants, June 2003

5. NUREG/CR-6331, Rev. 1, ARCON96, Code System to Calculate Atmospheric Relative Concentrations in Building Wakes

6. FA-16B, Rev. 27, Administration BLDG. Floor & Roof Plans

7. FC-32N, Rev. 5, Administration Building Details Roof Air Intake & Exhaust

8. FB-32L, Rev. 6, Administration Building Heating, Ventilation, & Air Conditioning Roof Plan – El. 322'-0"

9. FA-1G, Rev. 3, Electrical Bay Elev. & Roof Plan

10. FB-45A, Rev. 42, Flow Diagram Control and Relay Rooms Heating and Ventilation System 70

11. FP-27C, Rev. 13, Main Steam Piping Sheet 3

12. FB-32G, Rev. 10, Admin Building Heating Vent and Air Cond. Sh. 4

13. James A. FitzPatrick Nuclear Power Plant – Issuance of Amendment RE: Changes to the Technical Specifications Regarding the Allowed Containment Leakage Rate (TAC No. MA1136), April 14, 2000 (ML18031A041)

14. FP-27D, Rev. 7, Main Steam Piping Sheet 4

15. James A. FitzPatrick UFSAR, Rev. 6

16. ECR #5000012124 (JAF-06-11436), Explain Why Smoke Ejector Vents in TB Roof, Access Door in TB El. 323', and Exhaust Duct Opening in TB El. 323' are not Valid Post-LOCA Release Points, 1/31/2006

17. ENERCON ARCON96 1.0 Acceptance Report, Rev. 0

18. TODI NF194653, Rev. 0

19. 12966.41 Problem 772, Rev. 0, Design Stress Analysis

20. 12966.41 Problem 631, Rev. 1 (Leg Rev. 0A), Pipe Stress

21. MSK-127D1, Rev. 7, Main Steam Lines – Outside Containment to Turbine

5. COMPUTER PROGRAMS

ARCON96 (Ref. 5) is an industry standard methodology used to calculate control room and TSC atmospheric dispersion coefficients (χ/Q values) (Reference 4). This software has been commercially dedicated for safety related use under ENERCON's QA Program (Ref. 17) and has been demonstrated as appropriate for use on this project per the ENERCON Computer Software Acceptance (CSA) Form for QA Project EXFP-00005. As part of the CSA Form, a search for error notices against ARCON96 was performed and no errors were identified. The ARCON96 runs for this calculation were completed on computer WIN7-365, which is an approved installation for safety-related use, per the ENERCON QA Program.

6. METHOD OF ANALYSIS

This evaluation is performed using the ARCON96 code (Ref. 5), which is an acceptable method for determining location-specific atmospheric dispersion factors (χ/Qs) for habitability analyses. Eight (8) years of hourly meteorological data (1985-1992) are used from Input 1. As discussed in Input 1, this data was previously approved to calculate χ/Qs by the NRC and is used here to maintain consistency. Attachment A documents that the meteorological data being used in this calculation matches the data from 1985-1992 in JAF-CALC-RAD-04409 (Ref. 1). This is supported by the ARCON96 output file, which is included in Attachment C. Attachment B benchmarks this older meteorological data to more recent data from Reference 18 to ensure there are no new patterns or trends.

The release point location is identified and justified in Assumption 1. This location is relative to the either the Control Room or TSC intake locations when input to the ARCON96 code. Ground level releases are used since the release will not be from a stack or vent. Note that a "ground

level release" does not necessarily mean it occurs at grade elevation. Separate release and intake heights are specified. This just means the effects of a vent or stack (such as specifying an exit velocity) are not used.

The resulting 95% atmospheric dispersion factors (χ/Qs) are determined by ARCON96. A summary of the ARCON96 inputs is presented in Table 1.

7. NUMERIC ANALYSIS

The following inputs are used in developing the ARCON96 input files:

Table 1 – ARCON96 inputs used to calculate χ/Qs

Parameter	Value	Basis
Meteorological Data	1985-1992 data	See Input 1, supported by Attachments A, B, and C.
Release Height (m)	5.26	289'-3 ¼" – 272' = 17.27' = 5.26m Turbine Stop Valve Elevation (Input 8) minus site grade (Input 9)
Building Area (m^2)	0.01	This value is the value to be used in ARCON96 if no building wake effects are considered (Ref. 4). There are no significant structures (e.g. containment) between the release location and the control room or TSC intakes. Further, the addition of structures to create wake effects would reduce the χ/Q. Therefore, it is conservative to not credit any intervening structures.
Release Type	Ground	Release is not through a stack or vent so ground level release is appropriate.
Vertical Velocity	0	0 because ground level release assumed.
Stack Flow	0	0 because ground level release assumed.
Stack Radius	0	0 because ground level release assumed.
Distance to Control Room Intake (m)	29.33	78'-0" – 14'-7" + 32'-9 ¾" = 96.23' = 29.33 m Column 9 to 12 – distance to CR intake + Column 12 to TSV (Inputs 11, 10, and 12)
Distance to TSC Intake (m)	29.52	North-South: 13'-0" + 26'-0" + 32'-9 ¾" = 71.8125' TSC intake to Column 11 + Column 11 to 12 + Column 12 to TSV (Inputs 13, 11, and 12) East-West: 65' Row B to V (Input 14) Total distance: $\sqrt{71.8125^2 + 65^2} = 96.86' = 29.52m$

Parameter	Value	Basis
Control Room Intake Height (m) Relative to Grade	16.46	326' – 272' = 54' = 16.46m Control Room HVAC intake height (Input 7) minus site grade (Input 9)
TSC Intake Height (m) Relative to Grade	8.54	300' – 272' = 28' = 8.54m
Terrain Elevation Difference	0	Grade Elevation (272', Input 9) for the release height (289'-3 ¼", Input 8) and the intake heights (326' & 300', Inputs 7 & 13) are the same.
Control Room Direction to Source (degrees)	360	See Assumption 2.
TSC Direction to Source (degrees)	318	The angle from the intake to the source is calculated using the north-south and east-west distances: $360° - \tan^{-1}\left(\frac{65'}{71.8125'}\right) = 318°$
Wind Direction Window (degrees)	90	Recommended value per RG 1.194 (Ref. 4). See Input 15.
Averaging Sector Width Constant	4.3	Recommended value per RG 1.194 (Ref. 4). See Input 16.
Surface Roughness Length (m)	0.2	Recommended value per RG 1.194 (Ref. 4). See Input 17.
Minimum Wind Speed (m/s)	0.5	Recommended value per RG 1.194 (Ref. 4). See Input 18.

8. RESULTS / CONCLUSION

The ARCON96 95% χ/Q's results for the Control Room and TSC are presented in Table 2.

Table 2 – χ/Q Values

Time Period	CR χ/Q (sec/m^3)	TSC χ/Q (sec/m^3)
0 to 2 hours	4.52E-03	6.54E-03
2 to 8 hours	3.33E-03	5.46E-03
8 to 24 hours	1.19E-03	1.94E-03
1 to 4 days	8.27E-04	1.26E-03
4 to 30 days	6.40E-04	9.93E-04

9. ATTACHMENTS

A. JAF-CALC-RAD-04409 Met Data Verification

B. Met Data Benchmark

C. JAF-CALC-RAD-04409 Comparison Run ARCON96 Output File

D. Control Room ARCON96 Output File

E. TSC ARCON96 Output File

Attachment A: JAF-CALC-RAD-04409 Met Data Verification

The purpose of this attachment is to ensure the meteorological data being used in this calculation matches the data from 1985-1992 in JAF-CALC-RAD-04409 (Ref. 1). This will be done by comparing the resulting χ/Q's from the Turbine Building Test Case that was included in Section 8.3 of JAF-CALC-RAD-04409.

Table 3 – 1985-1992 χ/Q comparison

Time Interval	JAF-CALC-RAD-04409 TB Test Case ARCON96 χ/Q's [s/m^3] (JCRTB30.log)	Verification χ/Q's [s/m^3] (04409V.log)
0 to 2 hours	4.69E-03	4.69E-03
2 to 8 hours	4.02E-03	4.02E-03
8 to 24 hours	1.43E-03	1.43E-03
1 to 4 days	9.36E-04	9.36E-04
4 to 30 days	7.12E-04	7.12E-04

As shown, the resulting χ/Q's are identical. This ensure the Met Data used in this calculation is the same as is from calculation JAF-CALC-RAD-04409 (Ref. 1).

Attachment B: Met Data Benchmark

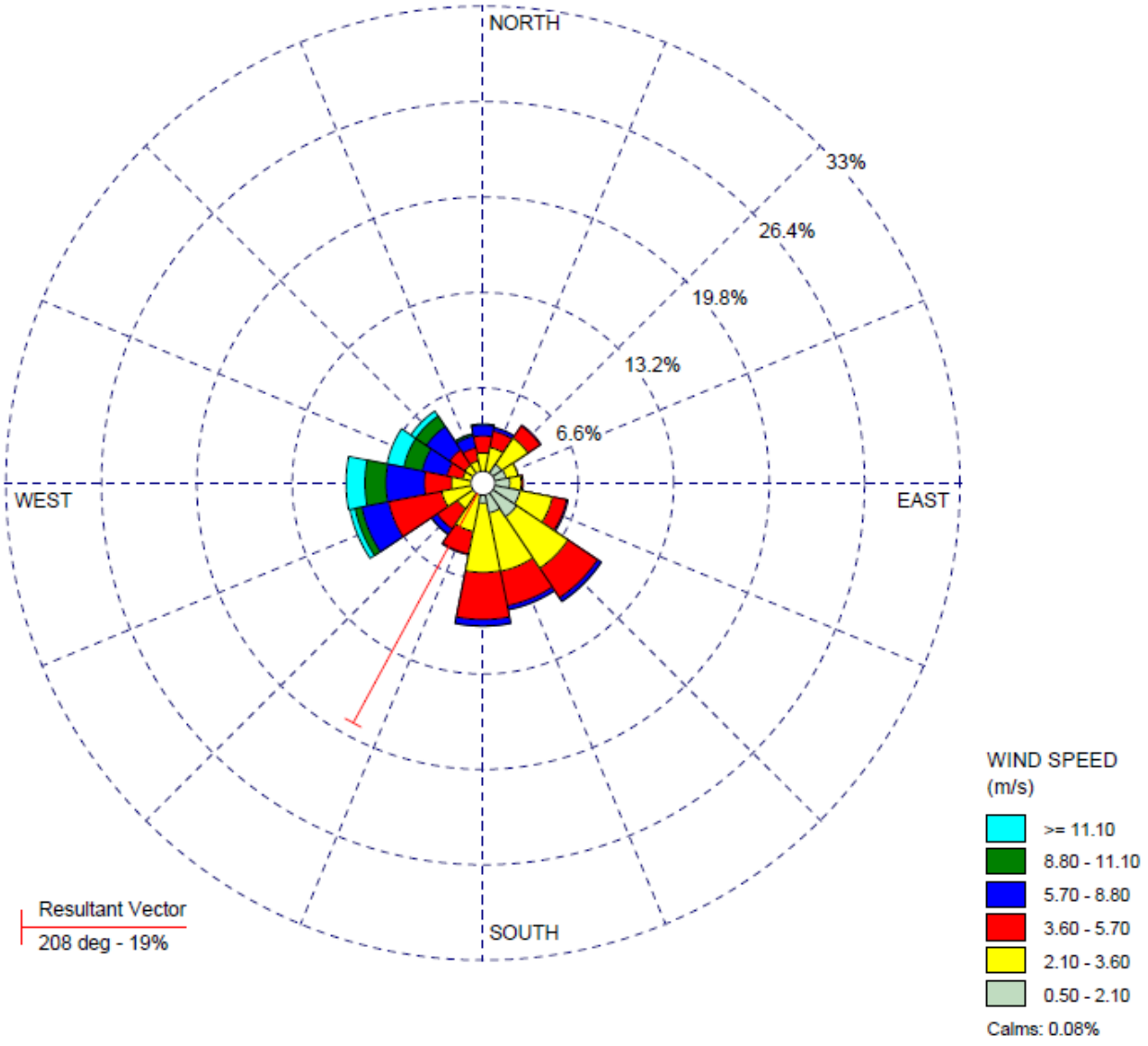
The purpose of this Attachment is to compare the meteorological data from 1985-1992 used in this calculation and in calculation JAF-CALC-RAD-04409 (Ref. 1) with more recent data to determine if there are any significant changes in local meteorological patterns and trends. This comparison is for information only and the results are not used as design input to the calculation.

The more recent data is also from Nine Mile Point, which is adjacent to Fitzpatrick, and covers the period from 2014 to 2018 (Ref. 18). Wind roses were constructed using the two data sets (1985 – 1992 and 2014 – 2018) to provide a comparison of the two sets of data. These were constructed based on the lower level meteorological data (30 ft), which is most representative of the ground level release modeled in this calculation. As shown in the following figures, the wind roses show very consistent wind directions and wind speeds. The resultant vector for the 1985-1992 data (208°) is almost identical to the resultant vector for the more current data (206°). The average wind speed of 4.09 m/s for the 1985-1992 data is essentially the same as the average wind speed of 3.99 m/s for the 2014-2018 data. Therefore, it's reasonable to conclude that the 1985-1992 metrological data is representative of current site conditions and is appropriate for use in this calculation.

These wind rose figures were generated using the Lakes Environmental Software WrPlot View 8.0.2.

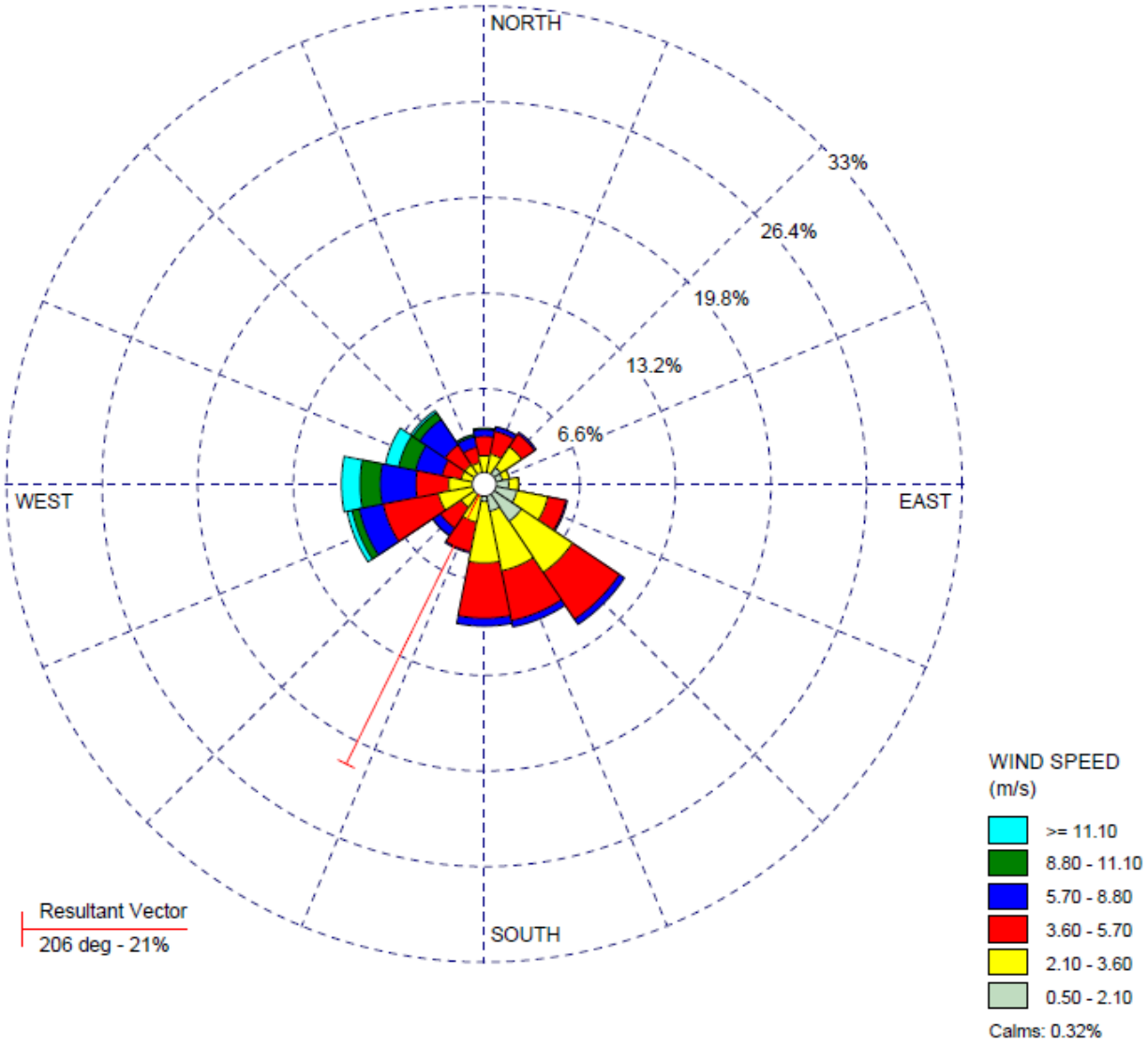
Wind Rose

NMP data for 1985-1992



Wind Rose

NMP data for 2014-2018



Attachment C: JAF-CALC-RAD-04409 Comparison Run ARCON96 Output File

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

NRC Contacts: J. Y. Lee Phone: (301) 415 1080
e-mail: jyl1@nrc.gov
J. J. Hayes Phone: (301) 415 3167
e-mail: jjh@nrc.gov
L. A Brown Phone: (301) 415 1232
e-mail: lab2@nrc.gov

Code Developer: J. V. Ramsdell Phone: (509) 372 6316
e-mail: j_ramsdell@pnl.gov

Code Documentation: NUREG/CR-6331 Rev. 1

The program was prepared for an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibilities for any third party's use, or the results of such use, of any portion of this program or represents that its use by such third party would not infringe privately owned rights.

Program Run 3/11/2019 at 16:54:47

******* ARCON INPUT **********

Number of Meteorological Data Files = 8
Meteorological Data File Names
C:\SOFTWARE\ARCON96\ARCON96\FITZ3085.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3086.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3087.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3088.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3089.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3090.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3091.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3092.MET

Height of lower wind instrument (m) = 9.1
Height of upper wind instrument (m) = 30.5
Wind speeds entered as miles per hour

Ground-level release
Release height (m) = 32.9
Building Area (m^2) = 1305.0
Effluent vertical velocity (m/s) = .00

Vent or stack flow (m^3/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 360
Wind direction sector width (deg) = 90
Wind direction window (deg) = 315 - 045
Distance to intake (m) = 28.7
Intake height (m) = 16.5
Terrain elevation difference (m) = .0

Output file names
04409V.log
04409V.cdf

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00
Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 70128
Hours of missing data = 1826
Hours direction in window = 13154
Hours elevated plume w/ dir. in window = 0
Hours of calm winds = 2490
Hours direction not in window or calm = 52658

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24	96	168	360	720
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
ABOVE RANGE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
IN RANGE	15644.	18255.	22309.	28298.	33336.	44011.	63579.	64990.	64453.	64219.
BELOW RANGE	0.	0.	0.	0.	0.	0.	0.	81.	0.	0.
ZERO	52658.	49841.	45398.	38663.	33918.	22963.	2465.	123.	0.	0.
TOTAL X/Qs	68302.	68096.	67707.	66961.	67254.	66974.	66044.	65194.	64453.	64219.
% NON ZERO	22.90	26.81	32.95	42.26	49.57	65.71	96.27	99.81	100.00	100.00

95th PERCENTILE X/Q VALUES
4.69E-03 4.65E-03 4.52E-03 4.19E-03 3.38E-03 2.35E-03 1.29E-03 1.07E-03 8.74E-04 7.89E-04

95% X/Q for standard averaging intervals

0 to 2 hours 4.69E-03
2 to 8 hours 4.02E-03
8 to 24 hours 1.43E-03
1 to 4 days 9.36E-04
4 to 30 days 7.12E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	7.10E-03	5.98E-04
SECTOR-AVERAGE	4.14E-03	3.49E-04

NORMAL PROGRAM COMPLETION

Attachment D: Control Room ARCON96 Output File

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

The program was prepared for an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibilities for any third party's use, or the results of such use, of any portion of this program or represents that its use by such third party would not infringe privately owned rights.

Program Run 3/11/2019 at 16:55:16

******* ARCON INPUT **********

Number of Meteorological Data Files = 8
Meteorological Data File Names
C:\SOFTWARE\ARCON96\ARCON96\FITZ3085.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3086.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3087.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3088.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3089.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3090.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3091.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3092.MET

Height of lower wind instrument (m) = 9.1
Height of upper wind instrument (m) = 30.5
Wind speeds entered as miles per hour

Ground-level release
Release height (m) = 5.3
Building Area (m^2) = .0
Effluent vertical velocity (m/s) = .00

Vent or stack flow (m^3/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 360
Wind direction sector width (deg) = 90
Wind direction window (deg) = 315 - 045
Distance to intake (m) = 29.3
Intake height (m) = 16.5
Terrain elevation difference (m) = .0

Output file names
TSVCR.log
TSVCR.cdf

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00
Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 70128
Hours of missing data = 1826
Hours direction in window = 11670
Hours elevated plume w/ dir. in window = 0
Hours of calm winds = 2293
Hours direction not in window or calm = 54339

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24	96	168	360	720
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
ABOVE RANGE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
IN RANGE	13963.	16784.	21088.	27407.	32653.	43655.	63511.	64974.	64453.	64219.
BELOW RANGE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ZERO	54339.	51312.	46619.	39554.	34601.	23319.	2533.	220.	0.	0.
TOTAL X/Qs	68302.	68096.	67707.	66961.	67254.	66974.	66044.	65194.	64453.	64219.
% NON ZERO	20.44	24.65	31.15	40.93	48.55	65.18	96.16	99.66	100.00	100.00

95th PERCENTILE X/Q VALUES
4.52E-03 4.32E-03 4.04E-03 3.63E-03 2.94E-03 2.01E-03 1.12E-03 9.59E-04 8.03E-04 7.05E-04

95% X/Q for standard averaging intervals

0 to 2 hours 4.52E-03
2 to 8 hours 3.33E-03
8 to 24 hours 1.19E-03
1 to 4 days 8.27E-04
4 to 30 days 6.40E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	9.47E-03	1.01E-03
SECTOR-AVERAGE	5.52E-03	5.91E-04

NORMAL PROGRAM COMPLETION

Attachment E: TSC ARCON96 Output File

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 3/18/2019 at 17:39:27

******* ARCON INPUT **********

Number of Meteorological Data Files = 8
Meteorological Data File Names
C:\SOFTWARE\ARCON96\ARCON96\FITZ3085.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3086.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3087.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3088.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3089.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3090.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3091.MET
C:\SOFTWARE\ARCON96\ARCON96\FITZ3092.MET

Height of lower wind instrument (m) = 9.1
Height of upper wind instrument (m) = 30.5
Wind speeds entered as miles per hour

Ground-level release
Release height (m) = 5.3
Building Area (m^2) = .0
Effluent vertical velocity (m/s) = .00

Vent or stack flow (m^3/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 318
Wind direction sector width (deg) = 90
Wind direction window (deg) = 273 - 003
Distance to intake (m) = 29.5
Intake height (m) = 8.5
Terrain elevation difference (m) = .0

Output file names
TSVTSC.log
TSVTSC.cdf

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00
Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 70128
Hours of missing data = 1826
Hours direction in window = 15340
Hours elevated plume w/ dir. in window = 0
Hours of calm winds = 2293
Hours direction not in window or calm = 50669

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24	96	168	360	720
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
ABOVE RANGE	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
IN RANGE	17632.	20908.	25946.	33087.	38930.	50541.	65389.	65177.	64453.	64219.
BELOW RANGE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ZERO	50669.	47187.	41761.	33874.	28324.	16433.	655.	17.	0.	0.
TOTAL X/Qs	68302.	68096.	67707.	66961.	67254.	66974.	66044.	65194.	64453.	64219.
% NON ZERO	25.82	30.71	38.32	49.41	57.89	75.46	99.01	99.97	100.00	100.00

95th PERCENTILE X/Q VALUES
6.54E-03 6.45E-03 6.25E-03 5.73E-03 4.64E-03 3.21E-03 1.74E-03 1.48E-03 1.26E-03 1.09E-03

95% X/Q for standard averaging intervals

0 to 2 hours 6.54E-03
2 to 8 hours 5.46E-03
8 to 24 hours 1.94E-03
1 to 4 days 1.26E-03
4 to 30 days 9.93E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	1.06E-02	1.14E-03
SECTOR-AVERAGE	6.15E-03	6.62E-04

NORMAL PROGRAM COMPLETION