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John A. Scalice Site Vice President, Watts Bar Nuclear Plant

JAN 2 9 1996

U.S. Nuclear Regulatory Commission Document Control Desk Washington, D.C. 20555 Attention: Mr. S. D. Ebneter

Dear Mr. Ebneter:

In the Matter of the Tennessee Valley Authority Docket Nos. 50-390

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WATTS BAR NUCLEAR PLANT (WBN) - RADIATION MONITORING SYSTEM ASSESSMENT, SUPPLEMENTAL INFORMATION

In response to the NRC's letter of January 12, 1996, TVA provided 'an assessment of the Watts Bar Radiation Monitoring System (RMS) by letter dated January 22, 1996. Based on review of the RMS, including information regarding system performance since fuel load, TVA reaffirmed its conclusion that the system meets regulatory requirements and TVA commitments, and is ready to support full power operation of Unit 1.

In subsequent discussions, the NRC staff requested supplemental and detailed information supporting several of TVA's conclusions. The enclosures to this letter provide the requested information. Enclosure 1 discusses pre-fuel load activities associated with the RMS and addresses:

- Information regarding the specific monitors covered by the Radiation Monitoring Special Program (RMSP).
- The Regulatory Guides, including exceptions and clarifications, and deviations, and Industry Standards to which TVA is committed.

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- The key issues associated with the RMS and, on a monitor-by-monitor basis, a listing of deficiencies contained in corrective action documents and design change notices associated with the RMS.
- The results of assessments of the RMSP performed by TVA's Nuclear Assurance organization.
- The basis for resolution of the 20 open items, 58 team items, and 27 observations identified in the TVA Engineering Assessment report issued in April 1995.

Enclosure 2 addresses the post-fuel load activities and includes discussions of the following:

- The availability (time in-service) of the monitors since receipt of a low power license.
- The specific training that has been provided to help ensure the RMS is operated and maintained in accordance with TVA procedures and NRC regulations.
- The methods used to ensure conformance with Regulatory Guide 1.21.
- The program that supports the availability of spare parts to maintain the system.

Should there be any questions on this information, or if the staff should require any additional information to complete its review, please contact me at (423) 365-8767.

Sincerely, 'A. Scalice

7. A. Scalice Enclosures

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cc (Enclosures): Mr. S. D. Ebneter, Regional Administrator U.S. Nuclear Regulatory Commission Region II 101 Marietta Street, NW, Suite 2900 Atlanta, Georgia 30323

> NRC Resident Inspector Watts Bar Nuclear Plant 1260 Nuclear Plant Road Spring City, Tennessee 37381

Mr. P. S. Tam, Senior Project Manager U.S. Nuclear Regulatory Commission One White Flint North 11555 Rockville Pike Rockville, Maryland 20852

# Enclosure 1 Watts Bar Nuclear Plant (WBN) Unit 1 Radiation Monitoring System (RMS) Assessment

## Pre-fuel Load Activities

### Information Requested:

State the impact of the activities performed under the Radiation Monitoring Special Program (RMSP) for those monitors which were not included within the scope of the RMSP.

## Response:

The scope of the RMSP includes the monitors required for compliance with the Technical Specifications, the Offsite Dose Calculation Manual (ODCM), and Regulatory Guide (RG) 1.97 (Post Accident Monitoring).

However, the activities performed for the monitors included in the scope of the RMSP were also applied to permanently installed monitors not required by the Technical Specifications, ODCM, or RG 1.97. Therefore, there was no difference between activities performed for monitors within the scope of the RMSP and those outside of the program. Corrective actions, maintenance, modifications, calibration, and preoperational testing which applied to a particular type of monitor (i.e., area monitors) were performed for each appropriate monitor of that type.

The RMSP Closure Report identified the completion of 121 total design changes. Since closure of the RMSP, ten design changes associated with RMS have been issued and closed. However, none of the ten changes affected system compliance with regulatory requirements, commitments, or the design basis documents. Principally, the design changes were for correction of engineering documentation discrepancies and also correction of electronic or circuit noise problems discovered during integrated system operation.

One measure that provided added assurance that outstanding required design changes impacting the RMS, System 90, were complete prior to fuel load, was the System Preoperability Acceptance Evaluation (SPAE) This process was used by the Nuclear Engineering staff to process. assess the status of the system and to establish that the system was complete and ready for preoperational testing. The documentation developed as a package under the SPAE process established that all engineering work was either design complete or had been approved as a deferral or as an exception. Through this process, completion of design bases documents, control room drawings, system boundary reviews, calculations, and corrective action documents was assured. The final SPAE package for the RMS, System 90, was issued on October 24, 1995, and certified that engineering activities had been completed and documentation closed or partially closed as indicated in the Master Tracking System (MTS) Report attached to the SPAE

package. Punchlist items for previous System 90 SPAE packages were tracked by the MTS. Consequently, the final SPAE package addressed previous punchlisted items.

The final SPAE MTS report was reviewed and items were confirmed closed except for Nuclear Experience Review item SQN II-S-92-025. This item involves an issue identified at TVA's Sequoyah Nuclear Plant regarding the initiation of a containment ventilation isolation during post-maintenance testing. Final closure of this item will occur upon evaluation of WBN experience following initial power operation.

To assure that no issues had emerged since approval of the final SPAE package, Nuclear Engineering reviewed the final SPAE package, Design Change Notices (DCNs), Tracking (TROI) items, Significant Corrective Action Reports (SCARs), Problem Evaluation Reports (PERs), etc., issued subsequent to the final SPAE package. This established that the conclusions in the final SPAE package regarding completion of engineering activities remained valid.

Another program that provided assurance of the operability of the RMS as a whole, was the System Pre-Operability Checklist (SPOC) process. This process established the requirements for turnover of a system from the Startup and Test organization to plant Operations. Implementation of the SPOC process provided a systematic method to ensure that open work items and outstanding programmatic items affecting system operability or operational readiness of a system were completed or dispositioned before recommending a system was functionally ready to support Unit 1 fuel load.

The system turnover portion of the SPOC process was specifically developed to:

- A. Verify completion of required testing,
- B. Verify system and equipment readiness for jurisdictional control by Operations,
- C. Identify and document any outstanding items (design, construction or modifications, licensing, testing, and physical work) against the system which was being turned over, and
- D. Document the turnover and acceptance of systems, subsystems and components from Startup and Test to Operations.

As part of the system turnover process, a system walkdown was performed to assess the physical condition of the system. The walkdown was not performed until system testing and associated field work had been completed. Identified deficiencies from the walkdown were dispositioned using existing plant work documents and programs, (i.e., Work Requests, Work Orders, Design Change Notices, Workplans, Labeling Requests, Service Requests, Test Deficiencies, etc.). Completion of the SPOC process ensured that open items and other issues which may have potentially affected system operation were either completed or reviewed, satisfactorily dispositioned and tracked. The MTS was used to track the status of open items. No special operating conditions were established at the completion of the SPOC turnover of any system. For the RMS, the SPOC process ensured that construction and testing were completed successfully and that the system was ready to be accepted by the plant staff for operations. The process did allow for a limited number of exceptions for open items not complete at turnover. These items are now complete.

## Information Requested:

Identify the Regulatory Guides (RGs) and Industry Standards (ISs) to which TVA is committed for the RMS.

#### Response:

The requested information regarding commitments to RGs and ISs if provided below. Where appropriate, the exceptions, clarifications, and deviations to the RGs or ISs are listed.

Regulatory Guide 1.21, Revision 1 - "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents From Light-Water-Cooled Nuclear Power Plants."

#### Exceptions:

None

#### Clarification:

Subsequent to the issuance of Revision 1 of this RG, the NRC initiated effluent reporting using the Offsite Dose Calculation Manual (ODCM). In accordance with the ODCM approach, requirements for effluent monitors are captured in the Watts Bar ODCM as opposed to the plant technical specifications and the Effluent and Waste Disposal Report is made annually rather than to semiannually.

Regulatory Guide 1.45, Revision 0 - "Reactor Coolant Pressure Boundary Leakage Detection Systems"

## Exceptions:

None

Regulatory Guide 1.97, Revision 2 - "Instrumentation for Light-" Water-Cooled Nuclear Power Plant to Assess Plant and Environs Conditions During and Following an Accident."

#### Exceptions:

None

## Approved Deviations:

1. <u>RG 1.97 Guidance:</u> Monitor - Auxiliary Building Exhaust Vent Radiation Level -Noble Gas Release

# Deviations:

The range recommended in RG 1.97, Revision 2, is  $10^{-6}$  to  $10^{3}$  microcuries/cubic centimeter (cc); the recommendation for WBN is  $10^{-6}$  to  $10^{-2}$  microcuries/cc.

The Auxiliary Building vent monitor is provided to continuously monitor the airborne radioactivity released through the Auxiliary Building exhaust vent. An accident causing the Auxiliary Building radiation level to be high will cause all ventilation paths exhausting into the Auxiliary Building vent duct to automatically close and the Auxiliary Building gas treatment system to be activated. Because the isolation function occurs before accident-range activity is reached, a normal-range monitor only is employed to monitor activity in the Auxiliary Building exhaust vent. Therefore, the recommended range of  $10^{-6}$  to  $10^{-2}$ microcuries/cc is adequate for detecting and measuring noble gas concentrations.

2. <u>RG 1.97 Guidance:</u> Radiation Exposure Rate

## Deviation:

RG 1.97, Revision 2, includes exposure rate monitors as Type E (Category 2) variables. These monitors are required to have a range of 1.0 E-1 Roentgen per hour (R/hr) to 1.0 E+4 R/hr and are to be located inside buildings or areas where access is required to service equipment important to safety. The area monitors are intended for use in detection of significant releases, release assessment, and long-term surveillance.

RG 1.97, Revision 2, also includes radiation exposure rate monitors, with ranges of 1.0 E-1 R/hr to 1.0 E+4 R/hr as Type C variables (these monitors were to be installed inside buildings or areas in direct contact with primary containment where penetrations and hatches were located). This variable was removed from RG 1.97 in Revision 3, and will not be addressed further. WBN RG 1.97 monitoring instrumentation does not include installed high-range exposure rate monitors as Type E variables. The intended objectives of such instrumentation will be achieved in a different manner than that described in RG 1.97. The following paragraphs describe how WBN's program is designed to monitor radiation exposure rates.

A large number of useful missions outside the Main Control Room (MCR) during accident conditions may be postulated. These missions would be for activities that might enhance accident mitigation, such as equipment maintenance, grab sample acquisition, and laboratory analyses of grab samples. Exposure rates encountered on these missions would vary over a wide range. This variability arises from the fact that the greatest exposure outside the containment during accident conditions would be attributable to contained sources and, therefore, be strong functions of distance from the sources. Because of the wide exposure rate variability, the installation of even a large number of high-range exposure rate monitoring instruments at selected locations on projected mission routes might not contribute substantially, either to the planning of missions for accident mitigation purposes or to the minimization of dose equivalent to personnel performing the missions.

Based on the above considerations, the WBN radiation monitoring system design uses portable high-range exposure rate instruments in lieu of installed high-range exposure rate monitors. Crews attempting missions outside the MCR following an accident would include Radiological Control personnel provided with high-range exposure rate instrumentation. The range of the Type E portable instrumentation available for this purpose is 1.0 E-3 R/hr to 1.0 E+4 R/hr, which is consistent with the range required for area exposure rate monitoring.

Additionally, the TVA RMS presently includes normal-range area monitors, each with a range from 1.0 E-1 mR/hr to 1.0 E+4 mR/hr. These monitors are located throughout the plant in areas where personnel access is common. Area monitors are not required to be within the scope of the environmental qualification program and are not included in the Post Accident Monitoring (PAM) program. Monitors located outside the primary containment and other locations of high post-accident exposure rates can be expected to remain on scale and to continue to provide exposure rate indication with required accuracy during accident conditions. These monitors will provide useful input to MCR personnel for assessment of plant exposure rate levels during accident conditions. Based on this assessment and WBN Radiological Emergency Plan dose limitations, a decision will be made as to whether or not missions outside the MCR would be attempted.

In summary, the WBN position on high-range accident monitoring is that high-range exposure rate instrumentation will not be installed and that high-range monitoring will be provided by portable monitoring instrumentation that meets the range stated in RG 1.97.

3. <u>RG 1.97 Guidance:</u> Containment Area Radiation, High-Range

# Deviation:

Note 7 of RG 1.97, Revision 2, for the subject variable states, "...detectors should respond to gamma photons within any energy range from 60KeV to 3MeV with an energy response accuracy of 20% at any specific photon energy from 0.1 MeV to 1MeV. Overall system accuracy should be within a factor of 2 over the entire range." TVA meets the guidance of RG 1.97 Revision 3, Note 7 for the subject variable, which states, "Detectors should respond to gamma radiation photons within any range from 60KeV to 3MeV with a dose rate response accuracy within a factor of 2 over the entire range."

It is acceptable to meet the guidance of RG 1.97, Revision 3.

4. RG 1.97 Guidance:

Condenser Vacuum Pump Exhaust Vent (Noble Gas)

## Deviation:

The RG 1.97, Revision 2, range for the condenser vacuum pump exhaust monitors is 1.0 E-6 to 1.0 E+5  $\mu\text{Ci}/\text{cc}$  .

TVA has determined the total gas required range of the condenser vacuum pump exhaust monitors to be less than the 1.0 E-6 value in RG for the low end of the range and 2.4 E+3  $\mu$ Ci/cc at the upper end of the range.

The steam generator tube rupture (SGTR) is the only credible accident monitored by the condenser vacuum pump exhaust monitor. NUREG-0800, Revision 2, provides that the SGTR accident be analyzed using the highest isotope concentrations allowed by the Watts Bar Technical Specifications. The specific activity of the reactor coolant is limited to:

- a) Less than or equal to 1 microcurie per gram dose equivalent Iodine-131, and
- b) Less than or equal to  $100/\overline{E} \ \mu \text{Ci/gm}$

The dose equivalent of  $I-\underline{1}31$  is greater than 4 times more restrictive than the  $100/\underline{E}$  limit. The  $100/\underline{E}$  is more conservative and is selected to demonstrate that the monitor will remain on scale during the most severe accident. The highest concentration of mixed noble gas isotopes that can be present under the 100/E limit is 1.45 E+3  $\mu$ Ci/cc as determined in TVA calculation WBNAPS3-048. For the SGTR source spectrum, the maximum measurable concentration for the condenser vacuum pump exhaust monitors is 3.53 E+4  $\mu$ Ci/cc. Therefore, the Watts Bar required range for the condenser vacuum pump exhaust monitors meet the intent of RG 1.97, Revision 2, based on either the mixed gas or the SGTR specific source spectrum.

5. RG 1.97 Guidance:

Auxiliary Building Exhaust Vent Radiation Level -Particulates and Halogens

#### Deviation:

The range recommended in RG 1.97, Revision 2, is 1.0E-3 to  $1.0 E+2 \mu Ci/cc$ ; WBN recommends 1.0 E-10 to 1.0 E-5 for particulates and 1.0 E-9 to  $1.0 E-4 \mu Ci/cc$  for halogens (iodine).

The Auxiliary Building vent monitor is provided to continuously monitor the radioiodine and particulate radioactivity released through the Auxiliary Building exhaust vent. A design basis fuel handling accident in the Auxiliary Building or a design basis LOCA in the Reactor Building will cause the ventilation paths exhausting into the Auxiliary Building vent duct to automatically close and the Auxiliary Building gas treatment system to be activated. Because the isolation function occurs before accident-range activity is reached, a normal-range monitor only is employed to monitor activity in the Auxiliary Building vent. Therefore, the recommended range of 1.0 E-10 to 1.0 E-5 µCi/cc for particulates and 1.0 E-9 to 1.0 E-4 µCi/cc for halogens (iodine) are adequate for detecting and measuring normal operation particulate and radioiodine concentrations. Laboratory analysis of collected samples allows measurement over a wide range.

The following ISs were used as reference guidance in designing and evaluating the radiation monitoring system:

ANS N13.1-1969 - "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities"

ANSI/ANS-HPSSC-6.8.1-1981, "Location and Design Criteria for Area Radiation Monitoring Systems for Light Water Nuclear Plants"

# Information Requested:

Define and quantify the key issues associated with the RMS.

#### Response:

Prior to turnover of the RMS to plant Operations, the issues which impacted the RMS could be grouped into the following four categories (corrective actions initiated to address the issues are cataloged on a monitor-by-monitor basis in Attachment 1 to this Enclosure):

- 1. Inconsistent documentation.
- 2. Noncompliance with design requirements.
- 3. Isokinetic sampling.
- 4. Maintenance or age related problems.

For the first category, inconsistencies existed in and among commitment documents (FSAR, responses to RGs, etc.), requirements documents (system design criteria), configuration control documents (drawings), and field installations. These inconsistencies involved sample line construction, equipment configuration, and system performance.

The primary corrective action document associated with this category was SCRWBNEEB8724SCA and its associated 10 CFR 50.55(e) report, CDR 390/86-49. Specific examples of inconsistencies included components which were not as specified on vendor drawings for the Shield Building, Auxiliary Building, and Service Building vent monitor isokinetic flow control stations; lack of location and mounting details for on-line area monitors; vendor change documents which were not incorporated into the vendor manuals; and discrepancies between vendor drawings and TVA drawings.

Also discussed in CDR 390/86-49 was WBP890386PER, which included deficiencies in the retrievability of QA records supporting radiation monitoring calibration transfer sources. The issue concerned the traceability to the primary calibration and to the National Bureau of Standards (NBS).

WBPER940601 documented discrepancies discovered during performance of the Engineering Assessment of the RMS, which included incorrect depiction of ball and plug valves on the control drawings, and inconsistencies between Equipment Management System (EMS) safety classifications for Class 1 sample line tubing and pressure boundary retention requirements.

Corrective actions for the documentation inconsistencies included sample line and equipment walkdowns and evaluation efforts. Sample line walkdowns and evaluations were documented in 1989 and 1995. Equipment walkdowns were completed in 1990. Equipment evaluations were performed in 1990 and 1995. DCN S-06973-A resolved documentation discrepancies associated with sample line configurations discovered during the 1989 walkdown and evaluation. DCN S-10604 resolved equipment documentation discrepancies discovered in the 1990 walkdowns and evaluations. DCNs S-36049 and S-37549 corrected the documentation discrepancies discovered during the 1995 evaluations. The validity of the corrective actions performed following the 1989 and 1990 evaluations were supported by the small number of discrepancies noted in the 1995 evaluations.

With regard to the Shield Building, Auxiliary Building, and Service Building vent isokinetic flow control station documentation discrepancies, the equipment was replaced or upgraded. In addition, new vendor documentation was received, reviewed, and approved by TVA. Revised TVA drawings were prepared for these components as part of DCNs M-03450, M-03451, and W-07445.

Discrepancies in vendor manuals were corrected under the Vendor Manual Upgrade Program as part of WBP870701SCA.

Location details for on-line area monitors were documented in DCNs W-23167, S-31335, and S-29173. Drawings controlling mounting details were verified to be available.

Records supporting the traceability of transfer calibration sources to the primary calibration and to NBS standards were located and retrievability was assured.

Recurrence control for this category of RMS issues included the revision and upgrade of design control procedures, which are specified in the report for CDR 390/86-49.

For the second category, noncompliance with design requirements, the primary corrective action documents were WBP880409SCA and WBP890192PER. WBP880409SCA reported changes made by the field in an attempt to achieve operation of the Air Monitor isokinetic flow control stations for the Shield, Auxiliary, and Service Building vent monitors within acceptable error tolerances. WBPER890192PER reported undocumented changes made to radiation monitoring ratemeters and to detector preamplifier boards. The ratemeter changes were made to add a trip-inhibit feature on the model RP-1 and RP-30 radiation analyzers. The changes to the detector preamplifier boards were made to achieve higher gain and overcome inadequate photomultiplier tube performance.

To address these issues, the affected portion of the instrumentation for the Shield Building, Auxiliary Building, and Service Building vent monitors was replaced or upgraded. These modifications resulted in the equipment being supported by a new set of vendor supplied and TVA approved as-built documentation. This was accomplished by DCNs M-03450, M-03451, and W-07445 and resolved the undocumented changes reported in WBP880409SCA.

Radiation monitoring ratemeters Models RP-1, RP-2, and RP-30 were replaced with new models RP-1AM, RP-2AM, and RP-30AM for WBP890192PER. This was accomplished under DCN W-06378. The new model ratemeters incorporate the trip inhibit feature, which was desirable. A new set of documentation was supplied with the equipment so that configuration control was regained. The safetyrelated preamplifier boards were returned to the vendor for refurbishment. Nonsafety-related preamplifier boards were returned to documented configuration by Instrument Maintenance. This was accomplished by DCNs W-09308, W-09309, M-09378, and M-09786.

Recurrence control included the issuance of revised and upgraded plant modification procedures specified in the 10CFR50.55(e) report, CDR 390/86-49.

Isokinetic sampling issues, the third category listed above, involved both sample line construction and equipment design. The corrective action documents associated with this category were SCRWBNEEB8724SCA, WBP880409SCA, and WBPER940423. SCRWBNEEB8724SCA described problems with sample lines which may degrade representative sample capability, including long line lengths, excessive numbers of bends, inappropriate bend radii, and lack of heat tracing and insulation for processes susceptible to moisture condensation. WBPER940423 included additional examples of sample line deficiencies. WBP880409SCA reported problems with maintaining isokinetic flow control for the Shield Building, Auxiliary Building, and Service Building ventilation monitors with the Air Monitor equipment; and additionally reported that the subsamples to the radiation monitors were not isokinetic after leaving the primary sample line.

As stated previously, to determine the condition of sample lines and to determine corrective action, walkdowns and evaluations of the sample lines were performed in 1989 and again in 1995.

The problems with the isokinetic sampling stations were resolved by revision to the design criteria where requirements were overly restrictive, physical changes to the sample lines to bring them into compliance with the revised criteria, and the development of calculations to determine particle loss in the sample lines so that effluent reports would be conservative.

Sample line configuration and the lack of isokinetic subsamples on the Auxiliary Building and Service Building vents were resolved by completion of particle loss calculation WBNTSR-060. This calculation provided transmission factors to be used to assess the actual particulate concentration in the effluent release path based on activity on the filter and sample line losses. For the Shield Building, the issue of non-isokinetic subsamples is no longer valid, since the radiation monitor subsample is also controlled based on flow rate in the duct.

Recurrence control for this category included the development and issuance of an adequate design criteria as described in the final report for CDR 390/86-49.

Regarding the fourth category, one of the more effective activities which addressed age-related problems was the replacement of the RP-1, RP-2, and RP-30 ratemeters. This replacement was performed as part of WBP890192PER under Design Change Notice (DCN) W-06378. Additional examples of the resolution of age-related problems are:

- The implementation of DCNs W-09308, W-09309, M-09378, and M-09786 for the rebuilding of detectors.
- The refurbishment of preamplifiers by the vendor or TVA to support the corrective action for WBP890192PER.

State-of-the-art digital flow control systems were provided for the Shield Building, Auxiliary Building, and Service Building vent isokinetic flow control equipment. The upgrading was completed as part of the corrective action for WBP880409SCA by DCNs M-03450, M-03451, and W-07445.

Heat trace and insulation added for the prevention of moisture condensation by DCNs W-33688 and W-35465 will aid in decreasing maintenance activities caused by humidity and water problems. The heat trace and insulation was part of the corrective action required for resolution of WBPER940423.

The need for decontamination maintenance of the RMS was further decreased by the addition of purge valves as part of the corrective action for SCRWBNEEB8724SCA. The addition of these valves decreases the maintenance time required to decontaminate the monitor sample chambers.

Additional information regarding the corrective actions implemented for each monitor is contained in Attachment 1.

## Information Requested:

Describe the results of assessments performed by TVA's Nuclear Assurance organization on the RMSP.

## Response:

The closure verification activities associated with the RMSP performed by TVA's Nuclear Assurance organization was comprised of assessments performed at various stages of the RMSP effort. These assessments were performed in the February 94 to December 95 timeframe. The scope of these assessments included engineering, design changes, field walkdowns, open item closures, setpoint and scaling documents, testing, transfer of calibration data, and control of check sources. The following issues resulted from these assessments:

- 1. Duplicate design exception numbers were used on two different exceptions.
- FSAR seismic classification was not consistent with Q-List or design criteria.
- 3. Radiation monitor 1-R-90-140 (non-technical specification) was discussed in the design criteria but not in the FSAR.

- 4. The design criteria were inconsistent with certain calculations regarding the safety-related classification of radiation monitors.
- 5. Walkdowns identified slope problems on three non-technical specification radiation monitors.
- 6. Non-technical specification radiation monitor 1-RE-90-124 would not function as designed.
- 7. The non-retrievability of some calibration records was noted; this had been previously identified and documented in WBP890396PER.
- 8. Differences between DCAs and the plant (e.g., dimensional errors).
- 9. Slope deviations, mistagged equipment, and loose hardware.
- 10. A missing tag on 1-HTR-234-0460 and incorrect nomenclature on 1-RE-090-0131A.

The final Nuclear Assurance verification of the RMSP was completed on October 26, 1995. This assessment verified that issues from prior assessments were satisfactorily corrected and 74 of 108 open items were closed. (These open items were subsequently verified as satisfactorily closed by Nuclear Assurance as part of the open item closure reviews performed prior to fuel load.)

In January 1996 an assessment was performed by Nuclear Assurance to evaluate the effectiveness of training of operations and maintenance personnel in the area of radiation monitor maintenance and operation. Each department's classroom training course was evaluated. Personnel were questioned to ascertain their level of knowledge after attending the training. No deficiencies were found. Additionally, the trending of equipment failures by Technical Support was reviewed for radiation monitoring equipment and was found to be acceptable. Nuclear Assurance concluded that maintenance and operations personnel have the appropriate knowledge level to maintain and operate the radiation monitoring system and that equipment failure analysis evaluations were satisfactory.

## Information Requested:

The TVA Engineering Assessment report issued in April 1995 identified 20 open items, 58 team items, and 27 observations. Provide the basis for resolution of each of the items.

#### Response:

The assessment report issued in April 1995 documented a monitor-bymonitor review of the radiation monitors in System 90 to assess the system's ability to perform its intended functions, to determine if the system met regulatory requirements, and to identify and correct inconsistencies in design documentation. Each monitor in the system was evaluated against criteria such as range, sensitivity, accuracy, background accounted for, safety classification, redundancy, location of and type of readouts, electrical and mechanical requirements, and environmental requirements. The requirements for these attributes were established from the design criteria and TVA licensing commitments. The review examined whether the hardware and associated documentation met the established requirements. It also examined whether inconsistencies existed between the design criteria and licensing commitments.

During the review 20 open items, 58 team items, and 27 observations were identified. The open items were issues that required correction and were determined to be outside of the scope of the team's charter to correct and thus were added as specific corrective actions in WBNPER940601 to document and track resolution of the conditions. A description of each open item, which monitor it related to, and how the item was resolved is provided in Table 1 of Attachment 2.

The 58 team items were issues for which it was determined that the Radiation Monitoring System Design Criteria, FSAR sections on radiation monitoring, or calculations needed to be revised to correct inconsistencies, errors, or provide clarification. The 58 team items shown in Table 2 of Attachment 2 were addressed by revisions to the documents listed above. These actions were completed prior to September 1995. The specific documents changed and the date of the change are also shown in the table.

The 27 observations were items that the team documented for information in the tables attached to the April 28, 1995, report. The items reflected work being tracked by open corrective action documents, items related to work in progress, practices used at other utilities, or informational comments. None of these items required new actions on the part of TVA to meet design requirements or regulatory commitments. Table 3 of Attachment 2 provides a listing of the observations and shows how they were dispositioned. All of the observations were evaluated and closed.

# Attachment 1

Deficiencies Impacting the RMS

		R		lear Plant g System (RMS) acting RMS		
Radiation Monitor:	Monitor Type:	Monitor Classi		-		
0-RE-90-003	Area	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
		No	No	No	No	
Monitor Description:	Waste Package Area Monitor					
TVA Deficiency: SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890473P WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 89 CRDR HED 89 CRDR HED 89 CRDR HED 89 WBSCA940032 WBPER940072 WBP890492SCA	Description of Deficience Condition A8 of SCRWBNEEB8724, doce Inductive kickback from RL-1, failure reso Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card cha Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels (n Recorder scales (not applicable to 1-RE-92 Recorder scales (applicable only to 2-RE-53 Recorder scales (applicable only to 1-RE-92 Undocumented method of transitioning fro RT-10, RT-11 calibrator documentation, S Replace coax cable for cable damage issue	umentation inconsistencies et (not applicable to O-RE-90-135) nge fit >280, 2-RE-90-1,6,7,8,10) >0-1,6,7,8,10) >0-280) m coax to TSP, triax, or single cond E calibration methods	fuctor; inadequate WWK cable to	o connector termination	N	· · ·
Design Change Notice:	Related Deficiency:	Description of [	)esign Changes/Fi	eld Modifications:		

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02440 30312 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 09153 35114 37566 16544 06378	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA	Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674 PAM Upgrade (0-RE-90-135) Install new ratemeters & power supply Install new ratemeters & power supply Install new ratemeters & power supply Install new detector and components, loop 002 Delete loops 235 & 236 Condition A8 of SCRWBNEEB8724, documentation corrections only Correct recorder scales Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674 SSD for 0-RE-90-135 Replace recorders 1-RR-90-1 and RR-90-12 Purchase new RT-10, RT-11 calibrators Provide materials/instructions for transition from coax to single conductors Replace coax cable for cable damage issue Replace coax cable for cable damage issue In WBRD 390,391/94-56 not a listed violation, Relocate 1-RE-90-7,61, and 0-RE-90-11 for optimum area radiation detection Resolve ground loops (shield ties) (loops 2,59,60 only) Delete 0-R-90-63 Add keep alive source for 1-RE-90-2	
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				clear Plant ng System (RMS) pacting RMS	
Radiation Monitor:	Monitor Type:	Monitor Classifi			
0-RE-90-004	Area	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	,	No	No	No	No
Monitor Description: TVA Deficiency: SCRWBNEEB8724 WBP80070 WBP890192 WBP890173 WBP910053 WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940032 WBPER940072	Decontamination Room Mon Description of Deficience Condition A8 of SCRWBNEEB8724, do Inductive kickback from RL-1, failure re Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card ct Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels of Recorder scales (not applicable to 1-RE- Recorder scales (applicable only to 2-RE Recorder scales (applicable only to 1-RE Undocumented method of transitioning fr RT-10, RT-11 calibrator documentation,	Cy: Cumentation inconsistencies Set (not applicable to O-RE-90-135) Tange fit (not applicable to 0-RE-90-135) S0-280, 2-RE-90-1,6,7,8,10) -90-1,6,7,8,10) -90-280) om coax to TSP, triax, or single cond	uctor; inadequate WWK cable	to connector termination	

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Design Change Notice:	<b>Related Deficiency:</b>	Description of Design Changes/Field Modifications:
02440	WBP870870	Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674
30312		PAM Upgrade (0-RE-90-135)
06378	WBP890192	Install new ratemeters & power supply
06378	CRDR HED 109	Install new ratemeters & power supply
06378	WBP890396	Install new detector and components, loop 002
09840	N/A	Delete loops 235 & 236
10604	SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation corrections only
23167	CRDR HED 89 & 93	Correct recorder scales
23169	WBP870870	Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674
23409	N/A	SSD for 0-RE-90-135
33616	N/A	Replace recorders 1-RR-90-1 and RR-90-12
RD1014511	WBPER940072	Purchase new RT-10, RT-11 calibrators
23167	WBSCA940032	Provide materials/instructions for transition from coax to single conductors
08858	WBP890492SCA	Replace coax cable for cable damage issue
08859	WBP890492SCA	Replace coax cable for cable damage issue
09153	WBP890492SCA	Replace coax cable for cable damage issue
35114	N/A	In WBRD 390,391/94-56 not a listed violation) Relocate 1-RE-90-7.61, and 0-RE-90-11 for optimum area radiation detection
37566	F 0///-	Resolve ground loops (shield ties) (loops 2,59,60 only)
16544 06378	F-24447 F-36399	Delete 0-R-90-63
00370	L-20288	Add keep alive source for 1-RE-90-2

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Watts F	clear Plant
Radiation M	Ing System (RMS)
Deficiencies	mpacting RMS

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			Denotencies imp	acting Rino	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
0-RE-90-005	Area	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
		No	No	No	No
Monitor Description:	Spent Fuel Pool Pumps Are	a Monitor			
TVA Deficiency:	Description of Deficien				-
SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, de	•			
WBP870870 WBP890192	Inductive kickback from RL-1, failure re Undocumented ratemeter changes	eset (not applicable to O-RE-90-135)			
WBP890396 WBP890473P	Lack of calibration documentation				
WBP910053	Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card c				
WBNEEB8553 23005-WBN-02	Lack of load data Lack of radiation monitoring in CDWE		۰.		
CDR HED 109 CRDR HED 93	Radiation analyzer indicator light labels Recorder scales (not applicable to 1-RE-	(not applicable to 0-RE-90-135) -90-280, 2-RE-90-1.6,7,8,10)			
CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238	Recorder scales (applicable only to 2-RI Recorder scales (applicable only to 1-RI	E-90-1,6,7,8,10)			
WBSCA940032 WBPER940072	Undocumented method of transitioning f	rom coax to TSP, triax, or single cond	luctor; inadequate WWK cable (	to connector termination	
WBP890492SCA	RT-10, RT-11 calibrator documentation. Replace coax cable for cable damage iss				
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Design Change Notice:	Related Deficiency:	Decoription of (	)	[	,
02440	WBP870870	Add diode, alarm relay co	vil. RL-1. General Atomic En	ield Modifications: gineering Change Order 12674	
30312 06378	WBP890192	PAM Upgrade (0-RE-90-1 Install new ratemeters &	35)	, ,	
06378 06378	CRDR HED 109 WBP890396	Install new ratemeters &	power supply		2
09840	N/A SCRWBNEEB8724	Install new detector and o Delete loops 235 & 236			
10604 23167	CRDR HED 89 & 93	Correct recorder scales	NEEB8724, documentation c		
23169 23409	WBP870870 N/A	Add diode, alarm relay co SSD for 0-RE-90-135	il, RL-1 for 2-RI-90-7B,8B,10	B, General Atomic Engineering Change	Order 12674
33616 RD1014511	N/A WBPER940072	Replace recorders 1-RR- Purchase new RT-10, RT			,
23167 08858	WBSCA940032 WBP890492SCA	Provide materials/instruct	ions for transition from coax	to single conductors	
08859	WBP890492SCA	Replace coax cable for ca Replace coax cable for ca	ible damage issue		
09153 35114	WBP890492SCA N/A	Replace coax cable for ca In WBRD 390,391/94-56	not a listed violation) Relocat	e 1-RE-90-7,61, and 0-RE-90-11 for opti	mum area radiation detection
37566 16544	F-24447	Delete 0-R-90-63	ield ties) (loops 2,59,60 only)	)	
06378	F-36399	Add keep alive source for	1-RE-90-2		r

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		Ra		lear Plant g System (RMS) acting RMS	• •	
Radiation Monitor:	Monitor Type:	Monitor Classifi	ication:			
0-RE-90-009	Area	Tech Spec: No	ODCM: No	<b>Reg. Guide 1.97:</b> No	Safety Related: No	
Monitor Description:	Waste Evaporator Condensa	te Tank Area Monitor				
TVA Deficiency: SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890473P WBP910053 WBPE98553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940032 WBPER940072 WBP890492SCA	Description of Deficience Condition A8 of SCRWBNEEB8724, doc Inductive kickback from RL-1, failure res Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card chu Lack of Ioad data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels (in Recorder scales (applicable only to 2-RE- Recorder scales (applicable only to 2-RE- Undocumented method of transitioning fro RT-10, RT-11 calibrator documentation, in Replace coax cable for cable damage issue	umentation inconsistencies et (not applicable to O-RE-90-135) ange fit not applicable to 0-RE-90-135) 0-280, 2-RE-90-1,6,7,8,10) 90-280, 2-RE-90-1,6,7,8,10) 90-280, 0 TSP, triax, or single cond SE calibration methods	uctor; inadequate WWK cable	to connector termination		
				Ň		
Design Change Notice	Related Deficiency: WBP870870			ield Modifications:		
30312 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08658 08859 09153 35114 37566 16544 06378	WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA N/A F-24447 F-36399	PAM Upgrade (0-RE-90-1 instail new ratemeters & r Instail new ratemeters & r Instail new ratemeters & r Instail new detector and c Delete loops 235 & 236 Condition A8 of SCRWBh Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR-§ Purchase new RT-10, RT- Provide materials/instruct Replace coax cable for ca Replace coax cable for ca Replace coax cable for ca In WBRD 390.391/94-55	35) power supply pomponents, loop 002 IEEB8724, documentation of il, RL-1 for 2-RI-90-78,88,10 20-1 and RR-90-12 11 calibrators ions for transition from coax ible damage issue ible damage issue hole damage issue not a listed violation) Reloca ield ties) (loops 2,59,60 only	corrections only DB, General Atomic Engineering Change ( to single conductors te 1-RE-90-7.61, and 0-RE-90-11 for optic		,,

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	Я		lear Plant g System (RMS) acting RMS		
Monitor Type:	Monitor Classi	ification:			
•	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
Area	No	No	No	No	
Containment Spray & RHR P	ump Area Monitor				
	•				
Inductive kickback from RL-1, failure rese	et (not applicable to O-RE-90-135)	)			
Undocumented ratemeter changes Lack of calibration documentation					
Unauthorized keep alive source in RD-1					
Lack of load data	inge tit				
	ot applicable to 0-RE-90-135)				
Recorder scales (not applicable to 1-RE-90	-280, 2-RE-90-1,6,7,8,10)				
Recorder scales (applicable only to 1-RE-	90-280)				
		nductor; inadequate WWK cable	to connector termination		
Replace coax cable for cable damage issue					
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					:
					~ .}`
	PAM Upgrade (0-RE-90	0-135)	gineering Change Order 12674	-	
					<b>.</b> .
WBP890396	Install new detector and	components, loop 002			
SCRWBNEEB8724	Condition A8 of SCRW	BNEEB8724, documentation of	orrections only		
			B. General Atomic Engineering Change	Order 12674	
N/A	SSD for 0-RE-90-135				
WBPER940072	Purchase new RT-10, F	RT-11 calibrators			
WBSCA940032 WBP890492SCA			to single conductors		
WBP890492SCA	Replace coax cable for	cable damage issue			
N/A	In WBRD 390 391/94-5	6 not a listed violation) Reloca	te 1-RE-90-7,61, and 0-RE-90-11 for opti	mum area radiation detection	
F-24447	Resolve ground loops ( Delete 0-R-90-63	shield ties) (loops 2,59,60 only	)		
	Area Containment Spray & RHR PA Description of Deficience Condition A8 of SCRWBNEEB8734, doc Inductive kickback from RL-1, failure rest Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card cha Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels (n Recorder scales (not applicable to 1-RE-9 Recorder scales (applicable only to 2-RE-8 Recorder scales (applicable only to 1-RE-9 Undocumented method of transitioning fro RT-10, RT-11 calibrator documentation, S Replace coax cable for cable damage issue WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 NA N/A WBPER940072 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA	Area       Tech Spec: No         Area       No         Containment Spray & RHR Pump Area Monitor         Description of Deficiency:         Condition A8 of SCRWBNEEB8724, documentation inconsistencies Inductive kickback from RL-1, failure reset (not applicable to 0-RE-90-135) Undocumented ratemeter changes         Lack of calibration documentation         Unauthorized keep alive source in RD-1         Vendor change, RD-1 electronics card change fit Lack of radiation monitoring in CDWE         Radiation analyzer indicator light labels (not applicable to 0-RE-90-135)         Recorder scales (applicable only to 1-RE-90-280)         Undocumented method of transitioning from coax to TSP, triax, or single co RT-10, RT-11 calibrator documentation, SE calibration methods Replace coax cable for cable damage issue         WBP870870       Add ciode, alarm relay PAM Upgrade (0-RE-90 Install new ratemeters 4 Install new ratemeters 4 Install new ratemeters 4 Install new ratemeters 4 Install new ratemeters 4 MA         WBP890396 N/A       SCRWBNEEB8724 CORDR HED 89 & 93 WBP870870         N/A       SD for 0-RE-90-135 N/A         N/A       Replace recorders 1-RF WBPER940072         N/A       Replace recorders 1-RF WBPER90492SCA         N/A       Replace coax cable for WBP890492SCA         N/A       Replace coax cable for WBP890492SCA         N/A       Replace coax cable for WBP890492SCA         Replace coax cable for WBP8904	Monitor Type:       Monitor Classification: Tech Spec:       ODCM: ODCM:         Area       No       No         Area       No       No         Containment Spray & RHR Pump Area Monitor       Description of Deficiency:       No         Condition A8 of SCRWENEEB873, documenation inconsistencies       Inductive kickback from RL-1, failure reset (nor applicable to 0-RE-90-135)       Undocumented ratemeter changes         Lack of lead data       Lack of relation onolitoring in CDWE       Radiation analyzer indicator light tables (nor applicable to 0-RE-90-135)         Recorder scales (applicable only to 2-RE-90-16, 7, 8, 10)       Recorder scales (applicable only to 1-RE-90-280)         Recorder scales (applicable only to 1-RE-90-280)       Undocumented method of transitioning from coax to TSP, triax, or single conductor; inadequate WWK cable         RT-10, RT-11 calibrator documentation, SE calibration methods       Replace coax cable for cable damage issue         WBP870870       Add diode, alarm relay coil, RL-1, General Atomic En PAM Upgrade (O-RE-90-135)         WBP830396       Install new ratemeters & power supply         NA       SCRWENEEB8724         CODTM HED 199       NA         NA       SSC Not 0-RE-90-135         NA       SSCRWENEEB8724         Contert tecorders cales       Contert tecorders cales         WBP8300492SCA       Replace roccurdes 1-RR-90-1 and RR-90-	Monitor Type:       Monitor Classification:       Reg. Guide 1.97:         Area       No       No       No         Condition of Deficiency:       Condition of Deficiency:       Sector price of the construction inconsistencies in hold the construction of the construction in consistencies in hold the construction of the construction in consistencies in hold the construction of the construction in consistencies in hold the construction of the construction of the construction of the construction of the construction in constructions in constructions in construction in constructions in construction in constructions in constructions in constructions in constructions in constructions in construction in constructions in constructions in construction in constructions in construction in constructions in construction in construling in constructin construction in construction in construction	Monitor Type:     Monitor Classification:       Tech Spec:     ODCM:     Reg. Guide 1.97:     Safety Related:       Area     No     No     No     No       Containment Spray & RHR Pump Area Monitor       Description of Deficiency:     Containment Spray & RHR Pump Area Monitor       Description of Deficiency:     Containment Spray & Supplicable to supplicable to supplicable to supplicable to the State 901300     No     No       Undocumented naturation documentation floations and state 916     Each of adiation monitoring in CDWE     State of Mode 91000     No       Lack of adiation monitoring in CDWE     Regle supplicable to 188-90-130     No     No       Rodination adjustering for table for supplicable to PRE-90-130     Rodination adjustering for table for supplicable to PRE-90-130       Rodination supplicable to 188-90-280     No     No       Rodination supplicable to 188-90-280     No     No       Rodination adjustering for table for supplicable to 188-90-280     No     No       Rodination adjustering for table for supplicable to RE-90-130     Rodination adjustering for table for supplicable to 188-90-280       Rodination adjustering for table for supplicable to RE-90-130     Rodination adjustering for table for supplicable to 188-90-280       Rodination adjustering for table for supplicable to 188-90-280     Rodination adjustering for table for supplicable to 188-90-280       Rodination proting for table for supplicable to

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		Ra		ear Plant System (RMS) cting RMS	
Radiation Monitor:	Monitor Type:	Monitor Classifi	ication:		
0-RE-90-012	Particulate	<b>Tech Spec:</b> No	ODCM: No	<b>Reg. Guide 1.97:</b> No	<b>Safety Related:</b> No
Monitor Description:	Spent Fuel Pool Monitor				
TVA Deficiency:	Description of Deficiency:				
SCRWBNEEB8724 R3	Condition A8 of WBNEEB8724, Documentation	on inconsistencies			
WBP890192 WBP880318 WBP890396 WBP890422 WBNEEB8353 WBPER940670	Undocumented changes to ratemeters Noise causes spurious actuations Calibration documentation missing Ratemeter cable damage on rough cable entry Lack of load data Degraded wiring from 10CFM moving filter to	electronics box			

Design Change Notice: 03001	Related Deficiency:	Description of Design Changes/Field Modifications:
06378	WBP890192	Install new ratemeters and power supply
07064 09786 09786	WBP890422 WBP880318 WBNEEB8724 R3	Add grommet to prevent wire damage Add noise suppression across three relay coils and buzzer, correct ground for single point ground Condition A8, rebuild detectors; correct preamp board to as documented condition; make all wiring consistent and as documented; delete isolation transformer (doc only, except 1-RE-90-62) add diode across flow alarm relay in 1-RE-90-62
10604	WBNEEB8724 R3	Condition A8 of WBNEEB8724, Documentation corrections

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33714

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WBPER940670

Corrects degraded wiring, 10CFM moving filter to electronics box (except loops 2-14)

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		R		lear Plant g System (RMS) acting RMS	~
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
0-RE-90-013	Particulate	<b>Tech Spec:</b> No	ODCM: No	<b>Reg. Guide 1.97:</b> No	Safety Related: No
Monitor Description: TVA Deficiency:	Shipping Bay Monitor Description of Deficiency:			、	
SCRWBNEEB8724 R3	Condition A8 of WBNEEB8724, Documentation	n inconsistencies			
WBP890192 WBP880318 WBP890396 WBP890422 WBNEEB8553	Undocumented changes to ratemeters Noise causes spurious actuations Calibration documentation missing Ratemeter cable damage on rough cable entry Lack of load data				
31105-WBN-06 WBPER940423 WBPER940670	Various ALARA concerns (applicable to 0-RE- General sample line deficiencies Degraded wiring from 10CFM moving filter to				

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:
<sup>03001</sup>	N/A	Installs multiplexer so particular CAM unit in alarm can be determined from recorder
06378 06973 07064 09786 09786 09786 10604	WBP890192 WBNEEB8724 R3 WBP890422 WBP880318 WBNEEB8724 R3 31105-WBN-06 WBNEEB8724 R3	Install new ratemeters and power supply Condition A2 of WBNEEB8724, as constructed sample lines Add grommet to prevent wire damage Add noise suppression across three relay coils and buzzer; correct ground for single point ground Condition A8, rebuild detectors; correct preamp board to as documented condition; make all wiring consistent and as documented; delete isolation transformer (doc only, except 1-RE-90-62) add diode across flow alarm relay in 1-RE-90-62 Move 0-RE-90-13 and add sample line Condition A8 of WBNEEB8724, Documentation corrections

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33714

WBPER940670

Corrects degraded wiring, 10CFM moving filter to electronics box (except loops 2-14)

		Ra		ear Plant System (RMS) cting RMS			
<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classif	ication:				
0-RE-90-015	Particulate	Tech Spec: No	ODCM: No	<b>Reg. Guide 1.97:</b> No	Safety Related: No		
Monitor Description:	Holdup Valve Gallery Monitor						
TVA Deficiency: SCRWBNEEB8724 R3	Description of Deficiency: Condition A8 of WBNEEB8724, Document						
WBP890192 WBP880318 WBP890396 WBP890422 WBNEEB8553	Undocumented changes to ratemeters Noise causes spurious actuations Calibration documentation missing Ratemeter cable damage on rough cable entr Lack of load data	y					
WBPER940423 WBPER940670	General sample line deficiencies Degraded wiring from 10CFM moving filter	to electronics box					
Design Change Notice: 03001	Related Deficiency:		Design Changes/Fie rticular CAM unit in alarm can t			<i></i>	
06378 06973 07064 09786 09786	WBP890192 WBNEEB8724 R3 WBP890422 WBP880318 WBNEEB8724 R3	Add grommet to prevent Add noise suppression a Condition A8, rebuild det	B8724, as constructed sample wire damage cross three relay coils and buzz	zer; correct ground for single point grou as documented condition; make all w	ind iring consistent and as documented; d	lelete isolation transformer (doc only,	
10604	WBNEEB8724 R3	Condition A8 of WBNEE	B8724, Documentation correction	ons			
94-22034-01	N/A	Replace defective cable r	ratemeter to detector for 0-RE-9	90-15			
33714	WBPER940670	Corrects degraded wiring	, 10CFM moving filter to electro	onics box (except loops 2-14)		<b>`</b>	
35152	N/A WBPER940423	Add sample line lengths t Resolve or incorporate ex	for 15, 17, 105, and 138 ceptions to design criteria WB-	DC-40-24 R4			

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	, X	Ra	Deficiencies Imp	g System (RMS) acting RMS		
Radiation Monitor:	Monitor Type:	Monitor Classif		aonng runo		
0-RE-90-016		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Particulate	No	No	No	No	
Monitor Description:	Decontamination Room Monitor					
TVA Deficiency:	Description of Deficiency:					
SCRWBNEEB8724 R3	Condition A2 of WBNEEB8724, General sample	le line routing problems (appli	cable to 0-RE-90-16 only)			
SCRWBNEEB8724 R3	Condition A8 of WBNEEB8724, Documentation	n inconsistencies				. (
				*		
WBP890192 WBP880318	Undocumented changes to ratemeters Noise causes spurious actuations					
WBP890396	Calibration documentation missing	•				
WBP890422 WBNEEB8553	Ratemeter cable damage on rough cable entry Lack of load data					
					·	
WBPER940423	General sample line deficiencies					
WBPER940670	Degraded wiring from 10CFM moving filter to	electronics box				
		Description of I	Design Changes/Fi	ield Modifications:		·
Design Change Notice: 03001	Related Deficiency:	Description of I Installs multiplexer so pa	Design Changes/Fi rticular CAM unit in alarm car	ield Modifications: n be determined from recorder		·
03001	N/A WBP890192	Installs multiplexer so par Install new ratemeters an	rticular CAM unit in alarm car	n be determined from recorder		
03001 06378 06973	N/A WBP890192 WBNEEB8724 R3	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEED	rticular CAM unit in alarm car d power supply B8724, as constructed sampl	n be determined from recorder		
03001 06378 06973 07064 09786	N/A WBP890192 WBNEEB8724 R3 WBP890422 WBP880318	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEEL Add grommet to prevent of Add noise suppression ar	rticular CAM unit in alarm car Id power supply 88724, as constructed sampl wire damage cross three relay coils and bu	n be determined from recorder e lines uzzer: correct ground for single point grou	nd	
03001 06378 06973 07064	N/A WBP890192 WBNEEB8724 R3 WBP890422	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEE Add grommet to prevent v Add noise suppression a Condition A8, rebuild det	rticular CAM unit in alarm car Id power supply 88724, as constructed sampl wire damage cross three relay coils and bu	n be determined from recorder ie lines uzzer; correct ground for single point grou to as documented condition; make all w	nd iring consistent and as documented; delete iso	plation transformer (doc only,
03001 06378 06973 07064 09786 09786	N/A WBP890192 WBNEEB8724 R3 WBP800422 WBP880318 WBNEEB8724 R3	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEE! Add grommet to prevent Add noise suppression ar Condition A8, rebuild detr except 1-RE-90-62) add o	rticular CAM unit in alarm car Id power supply B8724, as constructed sample wire damage cross three relay coils and bu ectors; correct preamp board fiode across flow alarm relay	n be determined from recorder le lines uzzer, correct ground for single point grou to as documented condition; make all w in 1-RE-90-62	nd iring consistent and as documented; delete iso	plation transformer (doc only,
03001 06378 06973 07064 09786	N/A WBP890192 WBNEEB8724 R3 WBP890422 WBP880318	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEE! Add grommet to prevent Add noise suppression ar Condition A8, rebuild detr except 1-RE-90-62) add o	rticular CAM unit in alarm car Id power supply B8724, as constructed sampl wire damage cross three relay coils and bu ectors; correct preamp board	n be determined from recorder le lines uzzer, correct ground for single point grou to as documented condition; make all w in 1-RE-90-62	ind iring consistent and as documented; delete iso	plation transformer (doc only,
06378 06973 07064 09786 09786	N/A WBP890192 WBNEEB8724 R3 WBP800422 WBP880318 WBNEEB8724 R3	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEE( Add grommet to prevent v Add noise suppression an Condition A8, rebuild det except 1-RE-90-62) add o Condition A8 of WBNEE(	rticular CAM unit in alarm car Id power supply B8724, as constructed sample wire damage cross three relay coils and bu ectors; correct preamp board fiode across flow alarm relay	n be determined from recorder le lines uzzer; correct ground for single point grou to as documented condition; make all w in 1-RE-90-62 ctions	ind iring consistent and as documented; delete iso	plation transformer (doc only,
03001 06378 06973 07064 09786 09786 09786 10604 WR-C297138	N/A WBP890192 WBNEEB8724 R3 WBP890318 WBNEEB8724 R3 WBNEEB8724 R3	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEEI Add grommet to prevent i Add noise suppression an Condition A8, rebuild det except 1-RE-90-62) add o Condition A8 of WBNEEI Replace recorder ground	rticular CAM unit in alarm car B8724, as constructed sampl wire damage cross three relay coils and bu ectors; correct preamp board fiode across flow alarm relay 38724, Documentation correct strap for 0-RE-90-16, 0-RE-9	n be determined from recorder le lines uzzer; correct ground for single point grou to as documented condition; make all w in 1-RE-90-62 ctions 10-17, and 1-RE-90-62	ind iring consistent and as documented; delete iso	olation transformer (doc only,
03001 06378 06973 07064 09786 09786 10604 WR-C297138 33714	N/A WBP890192 WBNEEB8724 R3 WBP890422 WBP80318 WBNEEB8724 R3 WBNEEB8724 R3 N/A WBPER940670	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEEI Add grommet to prevent of Add noise suppression an Condition A8, rebuild dete except 1-RE-90-62) add of Condition A8 of WBNEEI Replace recorder ground Corrects degraded wiring	rticular CAM unit in alarm car ad power supply B8724, as constructed sample wire damage cross three relay coils and bu ectors; correct preamp board fiode across flow alarm relay B8724, Documentation correct strap for 0-RE-90-16, 0-RE-9 , 10CFM moving filter to elect	n be determined from recorder le lines uzzer; correct ground for single point grou to as documented condition; make all w in 1-RE-90-62 ctions	ind iring consistent and as documented; delete iso	plation transformer (doc only,
03001 06378 06973 07064 09786 09786 10604 WR-C297138 33714 36188	N/A WBP890192 WBNEEB8724 R3 WBP890422 WBP800318 WBNEEB8724 R3 WBNEEB8724 R3 N/A WBPER940670 N/A WBPER940423	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEEI Add grommet to prevent v Add noise suppression an Condition A8, rebuild det except 1-RE-90-62) add o Condition A8 of WBNEEI Replace recorder ground Corrects degraded wiring Provide local room alarm Resolve or incorporate ex	rticular CAM unit in alarm car bid power supply B8724, as constructed sampli wire damage cross three relay coils and bu ectors; correct preamp board fiode across flow alarm relay B8724, Documentation correct strap for 0-RE-90-16, 0-RE-9 , 10CFM moving filter to elect for loop 16 ceptions to design criteria Wi	n be determined from recorder le lines uzzer; correct ground for single point grou to as documented condition; make all w in 1-RE-90-62 ctions 10-17, and 1-RE-90-62 tronics box (except loops 2-14) B-DC-40-24 R4	nd iring consistent and as documented; delete iso	plation transformer (doc only,
03001 06378 06973 07064 09786 09786 10604 WR-C297138 33714	N/A WBP890192 WBNEEB8724 R3 WBP800422 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 N/A WBPER940670 N/A	Installs multiplexer so par Install new ratemeters an Condition A2 of WBNEEI Add grommet to prevent v Add noise suppression an Condition A8, rebuild det except 1-RE-90-62) add o Condition A8 of WBNEEI Replace recorder ground Corrects degraded wiring Provide local room alarm Resolve or incorporate ex	rticular CAM unit in alarm car be power supply B8724, as constructed sample wire damage cross three relay coils and bu ectors; correct preamp board fiode across flow alarm relay B8724, Documentation correct strap for 0-RE-90-16, 0-RE-9 , 10CFM moving filter to elect for loop 16	n be determined from recorder le lines uzzer; correct ground for single point grou to as documented condition; make all w in 1-RE-90-62 ctions 10-17, and 1-RE-90-62 tronics box (except loops 2-14) B-DC-40-24 R4	nd iring consistent and as documented; delete iso	olation transformer (doc only,

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Radiation Monitor: 0-RE-90-017	Monitor Type:	Monitor Classifi		-			
J-RE-90-017	Particulate	<b>Tech Spec:</b> No	ODCM: No	Reg. Guide 1.97: No	Safety Related: No		
Monitor Description:	Safety Injection Pump Area Mor	nitor					
TVA Deficiency:	Description of Deficiency:						
CRWBNEEB8724 R3	Condition A8 of WBNEEB8724, Documentati	on inconsistencies					
WBP890192 WBP880318 WBP890396 WBP890422 WBNEEB8553	Undocumented changes to ratemeters Noise causes spurious actuations Calibration documentation missing Ratemeter cable damage on rough cable entry Lack of load data						
VBPER940423 VBPER940670	General sample line deficiencies Degraded wiring from 10CFM moving filter to	electronics box					-
Design Change Notice: 03001	Related Deficiency:			ield Modifications: h be determined from recorder		43.	
06378 06973 07064 09786 09786	WBP890192 WBNEEB8724 R3 WBP890422 WBP880318 WBNEEB8724 R3	Add grommet to prevent w Add noise suppression ac Condition A8, rebuild dete	8724, as constructed sampl vire damage ross three relay coils and bu	izzer; correct ground for single point grou: to as documented condition: make all wi	nd ring consistent and as documen	ited; delete isolation transformer (doc only,	
0604	WBNEEB8724 R3	Condition A8 of WBNEEB	8724, Documentation correc	ctions			
VR-C297138	, <b>N/A</b>	Replace recorder ground s	trap for 0-RE-90-16, 0-RE-9	0-17, and 1-RE-90-62			
3714	WBPER940670	Corrects degraded wiring,	10CFM moving filter to elect	tronics box (except loops 2-14)			
35152	N/A	Add sample line lengths fo	45 47 405				

		R		lear Plant g System (RMS) acting RMS				
Radiation Monitor:	Monitor Type:	Monitor Classi	fication:					
0-RE-90-101 0-LPF-90-300	Particulate, Iodine & Gas (PIG)	Tech Spec: No	ODCM: Yes	<b>Reg. Guide 1.97:</b> Yes	Safety Related: No			<u>.</u>
Monitor Description:	Aux Building Ventilation Monitor							
TVA Deficiency: WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBPEF940601	Description of Deficiency: Condition A1 of WBNEEB8724, Non-isokinet Condition A2 of WBNEEB8724, General sam Condition A8 of WBNEEB8724, Documentati Condition D of WBNEEB8724, Non-seismical DOE errors	ple line routing problems on inconsistencies	raives					
WBP870728 WBP880197 WBP880318 WBP890199 WBP890192 WBP890396 W-272-P W-466-P WBNEEB8553 WBNNEB8709 CRDR HED 89/HEC 5240 WBPER940423 WBPER940423 WBPER940670 WBSCA940032 WBPER950650 CRDR HED 109	Missing pipe tubing caps Lack of mounting details for flow elements Noise causes spurious actuations Air monitor isokinetic sampling system proble Undocumented changes to ratemeters Calibration documentation missing Iodine Io flow switches don't work in applicati Tube insulation not per NE output Lack of load data Particulate plateout concerns Recorder Scales General sample line deficiencies vs. design cri Degraded wiring from 10CFM moving filter to Coax to single conductor transitions Grab sample valves inappropriate for applicati Radiation analyzer indicator light labels	on teria e electronics box	own and sample cannot be taken			·		
Design Change Notice:	Related Deficiency:			ield Modifications:			·· . 4	•
02243 03445 06378 068378 06808 06973 07445 07345 09378 09378 09378 09378 09378 25193, 36511 10604 10425 10425 36049 34195	WBP870728 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBP880409 WBP880409 WBP88018 WBNEEB8724 R3 WBP990192 WBP880409 WBNEEN8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Condition A8 of WBNEE Condition A1 of WBNEE Upgrade Air Monitor sam Add noise suppression m Condition A8 of WBNEE Return defective preamp Add auxiliary bldg flow ra Condition A8 of WBNEE Condition A2 of WBNEEE Condition D of WBNEEE Correct valve depiction Replace quick disconnee	nd power supply nd power supply 188724, General sample line u 188724, sample line documen 188724, upgrade Air Monitor s piling system 184724, Rebuild detectors, sta 184724, Rebuild detectors, sta 184724, Pocumentation correc 18724, Correct valve classific 18724, Correct valve classific 18724, Correct valve classific 18724, Correct valve classific	ampling system o grounds Indardize internal wiring juration nitored on ERFDS stions only ation	eption -			
23237 23237 23237 21861 33714 23167 27485 36528 5-37549 5-37910 W-37566 S-38326	W-272-P WBP880318 CRDR HED 89/HEC 5240 WBP680318 WBPER940670 WBSCA940032 WBPER940423 N/A N/A WBPER940601 WBPER940601 WBPER940601 N/A N/A	Provide materials and ins Resolves or incorporates sa SSDs Air Monitor SSDs	ables with EMI tape from 10CFM moving filter to structions for coax to single co mple line exceptions rmit 1(L)B qualification of radiat	- electronics box anductor transition tion detection and flow monitoring skid; also	revise HVAC D.C. for function			

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adiation Monitor:	Monitor Type:						
)-RE-90-102	Shine	<b>Tech Spec:</b> Yes	ODCM: No	Reg. Guide 1.97: No	Safety Related: Yes	· .	
Monitor Description:	Fuel Pool Area Accident Monito	r					
TVA Deficiency: SCRWBNEEB8724 SCRWBNEEB8724 WBP890192 WBP890192 WBP890473P WBP910053 WBPER940279 CDR HED 109 WBSCA940032 CRDR HED 89/HEC 5252 WBPER940072 WBPER940072 WBPER940072 WBPER930482	Description of Deficiency: Condition A6 of SCRWBNEEB8724, geomet Condition A8 of SCRWBNEEB8724, docum Unauthorized, undocumented changes to rate: Calibration documentation missing Unauthorized "keep alive" source in RD-1 Vendor change to RD-1 electronics card is b Load data missing MCR recorders not isolated Radiation analyzer indicator light labels Transitions from coax to TSP, triax or single Recorder scales RT-10, RT-11 transfer data; SE calibration tr E-MAX rack power supplies not qualified Supply breakers to aux bldg exhaust fans not i	ntation inconsistencies neters ad fit conductor; connector termination nethods	to WWK at penetration.				
Design Change Notice:	Related Deficiency: WBP890192 CRDR HED 109 WBNEEB8724	Install new ratemeters and Install new ratemeters and	power supply power supply EEB8724, documentation o	ield Modifications:			

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Radiation Mo	ng System (RMS)
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Deficiencies Impacting RMS

Radiation Monitor:	Monitor Type:	Monitor Classif	ication:			
0-RE-90-103	Shine	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Sinne	Yes	No	No	Yes	
Monitor Description:	Fuel Pool Area Accident Monitor					

Monitor Description: TVA Deficiency: SCRWBNEEB8724 SCRWBNEEB8724 WBP800192 WBP890192 WBP890396 WBP890473P WBP910053 WBNEEB8553 WBPER940279 CDR HED 109 WBSCA940032 CRDR HED 109 WBSCA940032 CRDR HED 89/HEC 5252 WBPER940072 WBP8900586 WBPER930482

Description of Deficiency:

	Condition A6 of SCRWBNEEB8724, location mounting, geometry documentation missing
	Condition A8 of SCRWBNEEB8724, documentation inconsistencies
	Unauthorized, undocumented changes to ratemeters
	Calibration documentation missing
	Unauthorized "keep alive" source in RD-1
	Vendor change to RD-1 electronics card is bad fit
	Load data missing
	MCR recorders not isolated
	Radiation analyzer indicator light labels
	Transitions from coax to TSP, triax or single conductor; connector termination to WWK at penetration.
252	Recorder scales
	RT-10, RT-11 transfer data; SE calibration methods
	E-MAX rack power supplies not qualified
	Supply breakers to aux bldg exhaust fan not single failure proof.

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:
06378	WBP890192	Install new ratemeters and power supply
06378	CRDR HED 109	Install new ratemeters and power supply
10604	WBNEEB8724	Condition A8 to SCRWBNEEB8724, documentation only corrections
11304	WBP890586	Replace power supplies in R-163, 164
23167	WBNEEB8724 R3	Condition A4 of WBBEEB8724, Documentation: Location, mounting
23167	CRDR HED 89/HEC 5252	Correct recorder scales
23167	WBSCA940032	Provide materials/instructions for transition from coax to single conductor or TSP in MCB
31640	WBPER940279	Use of separated, dedicated recorders for each loop for devices tied to 1E outputs
S-32449		Test requirements
23409	N/A	Issue SSDs
31335	WBNEEB8724	Corrects location of 102, 103 (23167 is predecessor)
RD1014511	WBPER940072	New RT-10 calibrator
W-35389	N/A	Computer signals can be adjusted in field to correct equipment inaccuracies.
S-37518	WBPER940279	Add notes to I-tabs, special requirements, based on seismic test contract 141254 for recorders
M-29141	WBPER930482	Upgrade aux bldg and fuel handling circuits.
34421	N/A	prop test criteria

Radiation Monitor:	Monitor Type:	Monitor Classif	Deficiencies impa		
)-RE-90-118	Gas	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
		No	Yes	No	No
Monitor Description:	Waste Disposal System Gas	Effluent Monitor			
TVA Deficiency: WBNEEB8724 R3 WBNEEB8724 R3 WBP870728 WBP890192	Description of Deficience Condition A8 of WBNEEB8724, docume Condition G of WBNEEB8724, temperatu Missing pipe tubing caps Undocumented changes to ratemeters	ntation inconsistencies			

Design Change Notice: **Related Deficiency:** WBP870728 WBP890192 CRDR HED 109 03445 06378 06378 WBP880318 WBNEEB8724 R3 09309 09309 WBNEEB8724 R3 WBNEEB8724 R3 09309 10604 10604 23236 WBNNEB8705 CRDR HED 89/HEC 5252 WBSCA940032 Correct recorder scales 23167 27485 N/A SSDs WBPER940601 S37549 W37566 N/A

Description of Design Changes/Field Modifications:

Add pipe tubing caps Install new ratemeters & power supply Install new ratemeters & power supply Correct detector loop grounds Condition A8 of WBNEEB8724, rebuild detectors Return defective preamp b\_ards to documented configuration Condition A8 of WBNEEB8724, documentation corrections only Desure the supervision of Documentation corrections only Provide materials/instructions for coax to single conductor transition Correct Q-List classification of RE to 1(C)A Resolve ground loops(shield ties)

Radiation Monitor:	Monitor Type:		diation Monophy Deficiencies Impa	lear Plant g System (RMS) acting RMS		
0-RE-90-122	menner type:	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Liquid	No	Yes	No	No	•
Monitor Description:	Waste Disposal System Liquid N	lonitor				
TVA Deficiency: WBNEEB8724 R3 WBNEEB8724 R3 WBPEB940601 WBP870728 WBP890192 WBP890396 WBNEEB 8553 CRDR HED 40 CRDR HED 109 CRDR HED 109 CRDR HED 89/HEC 5252 WBPER940423 WBS2A940032 WBP880318 WBPER930420	Description of Deficiency: Condition A2 of WBNEEB8724, General samp Condition G of WBNEEB8724, Documentatio Condition G of WBNEEB8724, Temperatures a Doc errors Missing pipe tubing caps Non-seismically qualified flow switch Undocumented changes to ratemeters Calibration documentation missing Lack of load data Nuisance alarms Radiation analyzer indicator light labels Recorder Scales General sample line deficiencies Coax to single conductor transition Noise problems Installation of sample line not in accordance with	n inconsistencies and pressures above detector lin	<b>nils</b>		- -	
Design Change Notice: WO 06378 06378 06797 06973 09308 10604 15423 23235 23235 23235 23167 34183 35985 W 37566 S-36049	Related Deficiency: WBPER930420 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724, WBP880318 WBNEEB8724, WBP880318 WBNEEB8724, WBP880318 WBPE8940423 CRDR HED 89/HEC 5252 WBSCA940032 WBPER940423 CRDR HED 40 N/A WBPER940601	Correct sample line install Install new ratemeters and Condition A2 of WBNEEB Condition A8 of WBNEEB Condition A8, Correct loog Condition A8, Documenta Resolves non-seismic flow Correct vendor manual to Correct vendor manual to Provide materials, instruct	lation as necessary d power supply d power supply 38724, Replace inlet & outlet 38724, sample line as-constru- grounding for single point g tion corrections w switch (documentation) reflect optical grease tions for coax to single condu ceptions in R4 of design crite r not in use	ucted round, assure preamp board per drawing rotor transition	ess severe bends where possible; replace i g configuration, rebuild detectors	nlet purge valve, install outlet purge valve

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		Ra		elear Plant Ig System (RMS) acting RMS	· ·	
adiation Monitor:	Monitor Type:	Monitor Classif				
D-RE-90-123	Liquid	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Elquid	No	No	No	No	
Monitor Description:	Component Cooling System Mon	itor				
TVA Deficiency:	Description of Deficiency:					
WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601	Condition A2 of WBNEEB8724, General sampl Condition A8 of WBNEEB8724, documentation Doc Errors	e line routing problems inconsistencies				
WBP880272 WBP880273 WBP890192	Non-seismically qualified flow switch (0, 1-123) Non-seismically qualified flow switch (2-123)	)				
WBP890396 WBNEEB8553	Undocumented changes to ratemeters Calibration documentation missing Lack of load data					
CRDR HED 40 CRDR HED 109	Nuisance alarm Radiation analyzer indicator light labels					
CRDR HED 89/HEC 5252 WBPER940423	Recorder Scales					
WBSCA940032 WBP880318	General sample line deficiencies Coax to single conductor transition Noise problems					
esign Change Notice:	<b>Related Deficiency:</b>			ield Modifications:		 ٠.
06378 06378	WBP890192 CRDR HED 109	Install new ratemeters an Install new ratemeters an	d power supply			
06801	WBNEE63724 R3	Condition A2 to WBNEE	B8724, replace inlet and out	et isolation valves w/ss globe; add recirc	purge/test valves; take exception for carbon steel root valves	с.
06973 19308	WBNEEB8724 R3 WBNEEB8724 , WBP880318	Condition A8 of WBNEER	B8724, Sample line as const B8724, Correct loop grounding	ructed	board per drawing configuration, rebuild detectors	
10604	WBNEEB8724 R3 WBP880272	Condition A8 of WBNEEE	B8724, Documentation corre	ctions resolves non-seismic flow switch (	documentation)	
15423 15423	WBP880273	Documentation correction	w switch (documentation) ns resolves non-seismic flow	switch (documentation)		
23235 23235	N/A CRDR HED 89/HEC 5252	Correct vendor manual to Correct recorder scales				
23167 33686	WBSCA940032 CRDR HED 40	Provide materials, instruc Block alarm when monito	tions for coax to single cond or not in use	uctor transition		
W-37566	WBPER940423 N/A	Resolve or incorporate ex	ceptions in R4 of design crit	eria, WB-DC-40-24		
S-36049	WBPER940601	Ground loops - shield ties Show valves correctly, EN	s (1-123 only)			

		Ra		lear Plant g System (RMS) acting RMS		
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:			
0-RE-90-125	Gas	<b>Tech Spec:</b> Yes	ODCM: No	<b>Reg. Guide 1.97:</b> No	Safety Related: Yes	
Monitor Description:	Main Control Room Normal A	Air Intake Monitor				
TVA Deficiency: SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 WBP890192 WBP890192 WBP890396 WBNEEB8553 WBP890386 CRDR HED 109 CRDR HED 109 CRDR HED 89/HEC 5252 WB5CA940032 WBP990586 WBP900107 WBPER940601 WBPER940279 WBPER940423	Description of Deficience Condition A8 of SCRWBNEEB8724, do Condition A2 of SCRWBNEEB8724, get Missing pipe tubing caps Undocumented changes to ratemeters Calibration documentation missing Lack of load data Noise produces spurious actuations Radiation analyzer indicator light labels Recorder scales Coax to single conductor transitions E-MAX power supplies not qualified Non-radioactive check source Documentation errors Recorders tied directly to ratemeters with General sample line deficiencies with resp	no isolator	· · ·	· · · · · · · · · · · · · · · · · · ·		
Design Change Notice: 03445 06378 06378 09309 09309 10604 36049 06795 06973 11304 34421 23236 W37677 31640 23167 27485 W37518 S32449 W38500 09309	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBPE940601 WBNEEB8724 R3 WBPE8940601 WBNEEB8724 R3 WBPE890586 N/A WBP890586 N/A WBPE8940423 N/A WBPER940423 N/A WBPER940279 WBPC890192	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression n Condition A8 of SCRWBI Replace scintillator if regi Condition A8 of SCRWBI Depict valves correctly Condition A2 of SCRWBI Condition A8, of SCRWBI Replace power supply in Preoperational test criteri Wrap detector cbis inside Resolve shield tie ground Verify wiring correct in M Provide materials and ins R4 of design criteria, WB SSDS Add notes to Instrument 1 Test requirements Install noise Suppression	power supply power supply etworks, correct detector loc NEEB8724, rebuild detector uired NEEB8724, gen smpl line up INEEB8724, sample line as- R<163, 164 ia e mon. w/EMI tape; reroute s I loops and isolator ground p -12 and test recorders for int structions for coax to single o -DC-40-24 R4, resolved field	s, standardize internal wiring corrections only grades: delete outlet rt vive, add outlet is constructed ignal cbls from ratemeter to detector in co roblem efface with Class 1E ratemeters onductor transition deficiencies or incorporated exceptions orders based on seismic test, contract 14	ond. for 0-RE-90-125, 126	

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adiation Monitor:	Monitor Type:	Monitor Classif	ication:		
D-RE-90-126		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related
	Gas	Yes	No	No	Yes
Monitor Description:	Main Control Room Normal	Air Intake Monitor			
TVA Deficiency:	<b>Description of Deficiend</b>	c <b>y:</b>			
SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 WBP800728 WBP890192 WBP890192 WBNEEB8553 WBP880318 CRDR HED 109 CRDR HED/89/HEC 5252 WBSCA940032 WBP980586 WBP90107 WBPER940601 WBPER9400179 WBPER940423	Condition A3 of SCRWBNEEB8724, de Condition A2 of SCRWBNEEB8724, ge Missing pipe tubing caps Undocumented changes to ratemeters Calibration documentation missing Lack of load data Noise produces spurious actuations Radiation analyzer indicator light labels Recorder scales Coax to single conductor transitions E-MAX power supplies not qualified Non-radioactive check source Documentation errors Recorders tied directly to ratemeters with General sample line deficiencies with records	eneral sample line routing problems			
Design Change Notice	: Related Deficiency:	Description of I	Design Changes/F	ield Modifications:	
03445	WBP870728	Add pipe tubing caps		ield Modifications:	
03445 06378	WBP870728 WBP890192	Add pipe tubing caps Install new ratemeters &	power supply	ield Modifications:	
03445 06378 06378	WBP870728	Add pipe tubing caps Install new ratemeters & Install new ratemeters &	power supply		
03445 06378 06378 09309	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression n Condition A8 of SCRWBI	power supply power supply etworks, correct detector loop NEEB8724, rebuild detectors	o grounds	
03445 06378 06378 09309 09309 09309	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression n Condition A& of SCRWBI Replace scintillator if req	power supply power supply etworks, correct detector looj VEEB8724, rebuild detectors uired	o grounds , standardize internal wiring	
03445 06378 06378 09309 09309 09309 10604	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression m Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI	power supply power supply etworks, correct detector loop NEEB8724, rebuild detectors	o grounds , standardize internal wiring	
03445 06378 06378 09309 09309 09309 10604 36049	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBPEB8724 R3	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression n Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI Correct valve depiction	power supply power supply etworks, correct detector looj NEEB8724, rebuild detectors lifed NEEB8724, documentation c	o grounds , standardize internal wiring orrections only	
03445 06378 06378 09309 09309 09309 09309 10604 36049 06795	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBPER940601 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & Add noise suppression n Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI Correct valve depiction Condition A2 of SCRWBI	power supply power supply etworks, correct detector loop NEEB8724, rebuild detectors uired NEEB8724, documentation c NEEB8724, gen smpl line up	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet is	ol vive; slope exception
03445 06378 09378 09309 09309 09309 10604 36049 06795 06973	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601 WBNEEB8724 R3 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & Add noise suppression m Condition A8 of SCRWBI Replace scintillator if reg Condition A8 of SCRWBI Correct valve depiction Condition A2 of SCRWBI Condition A2 of SCRWBI	power supply power supply etworks, correct detector loop VEEB8724, rebuild detectors ired VEEB8724, documentation c VEEB8724, gen smpl line up NEEB8724, sample line as-c	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet is	ol vive; slope exception
03445 06378 06378 09309 09309 09309 10604 36049 06795 06973 11304	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & Add noise suppression n Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI Correct valve depiction Condition A2 of SCRWBI Condition A8, of SCRWBI Replace power supply in	power supply power supply stworks, correct detector loop NEEB8724, rebuild detectors vEEB8724, documentation c VEEB8724, gen smpl line up NEEB8724, sample line as- R-163, 164	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet is	ol vive; slope exception
03445 06378 06378 09309 09309 09309 10604 38049 06795 06973 11304 34421	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP8EB8724 R3 WBPER940601 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression n Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI Correct valve depiction Condition A2 of SCRWBI Condition A8, of SCRWBI Replace power supply in Preoperational test criteri	power supply power supply etworks, correct detector looj NEEB8724, rebuild detectors irred NEEB8724, documentation o NEEB8724, gen smpl line up NEEB8724, sample line as-o R-163, 164 a	e grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet is constructed	
03445 06378 06378 09309 09309 09309 10604 36049 06795 06973 11304 34421 23236	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 N/A WBP880318	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression m Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI Correct valve depiction Condition A8, of SCRWBI Condition A8, of SCRWB Replace power supply in Preoperational test criteri Wrap detector cbis inside	power supply power supply etworks, correct detector loop VEEB8724, rebuild detectors vired VEEB8724, documentation c VEEB8724, gen smpl line up NEEB8724, sample line as- R-163, 164 a : mon. w/EMI tape; reroute si	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet is constructed ignal cbis from ratemeter to detector in c	
03445 06378 06378 09309 09309 09309 10604 36049 06795 06973 11304 34421 23236	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBPER940601 WBNEEB8724 R3 WBPE8924 R3 WBP890586 N/A WBP880318 N/A	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression nn Condition A8 of SCRWBI Condition A8 of SCRWBI Correct valve depiction Condition A2 of SCRWBI Condition A2 of SCRWBI Replace power supply in Preoperational test criteri Wrap detector cbls inside Resolve shield tie ground	power supply power supply stworks, correct detector loop VEEB8724, rebuild detectors uired VEEB8724, documentation c VEEB8724, gen smpl line up NEEB8724, sample line as-o R-163, 164 a mon. w/EMI tape; reroute si loops and isolator ground p	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet is constructed ignal cbls from ratemeter to detector in c oblem	
03445 06378	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBPE890396 WBNEEB8724 R3 WBPER940601 WBNEEB8724 R3 WBPE890586 N/A WBP880318 N/A WBP880318 N/A WBPE8940279 WBSCA940032	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression m Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI Correct valve depiction Condition A8 of SCRWBI Condition A8, of SCRWBI Replace power supply in Preoperational test criteri Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M- Provide matenals and ins	power supply power supply sworks, correct detector loop VEEB8724, rebuild detectors jired VEEB8724, documentation c VEEB8724, gen smpl line up NEEB8724, sample line as- R-163, 164 a : mon. w/EMI tape; reroute si loops and isolator ground pi 12 and test recorders for inte tructions for coax to single ci	o grounds , standardize internal wiring orrections only grades: delete outlet it vive, add outlet is constructed gnal cbls from ratemeter to detector in c oblem enface with Class 1E ratemeters onductor transition	
03445 06378 06378 09309 09309 09309 09309 10604 36049 06795 06973 11304 34421 23236 W37677 31640	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBPE89724 R3 WBPE89724 R3 WBPE8940601 WBNEEB8724 R3 WBP890586 N/A WBP890586 N/A WBP890586 N/A WBP890318 N/A WBPER940279 WBSCA940032 WBPER940423 N/A	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression n Condition A8 of SCRWBI Condition A8 of SCRWBI Condition A8 of SCRWBI Condition A9, of SCRWBI Condition A9, of SCRWBI Condition A8, of SCRWBI Replace power supply in Preoperational test criteri Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M Provide maternals and ins R4 of design criteria, WB SSDs	power supply power supply etworks, correct detector loop NEEB8724, rebuild detectors lifed NEEB8724, documentation c NEEB8724, gen smpl line up NEEB8724, sample line as-c R-163, 164 a mon. w/EMI tape; reroute si loops and isolator ground pi 12 and test recorders for inte tructions for coax to single co -DC-40-24 R4, resolved field	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet is constructed gnal cbls from ratemeter to detector in c oblem erface with Class 1E ratemeters onductor transition deficiencies or incorporated exceptions	ond. for 0-RE-90-125, 126
03445 06378 06378 09309 09309 09309 10604 36049 06795 06973 11304 34421 23236 W37677 31640 23167 27485 W37518	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBPER940601 WBNEEB8724 R3 WBPER940601 WBNEEB8724 R3 WBP890586 N/A WBP890586 N/A WBP880318 N/A WBP8940279 WBSCA940032 WBPER940423	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression m Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI Correct valve depiction Condition A8 of SCRWBI Replace power supply in Preoperational test criteri Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M- Provide matenals and ins R4 of design criteria, WB SSDs Add notes to Instrument	power supply power supply etworks, correct detector loop NEEB8724, rebuild detectors lifed NEEB8724, documentation c NEEB8724, gen smpl line up NEEB8724, sample line as-c R-163, 164 a mon. w/EMI tape; reroute si loops and isolator ground pi 12 and test recorders for inte tructions for coax to single co -DC-40-24 R4, resolved field	o grounds , standardize internal wiring orrections only grades: delete outlet it vive, add outlet is constructed gnal cbls from ratemeter to detector in c oblem enface with Class 1E ratemeters onductor transition	ond. for 0-RE-90-125, 126
03445 06378 06378 09309 09309 09309 0604 36049 06795 06973 11304 34421 23236 W37677 31640 23167 27485	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBPE89724 R3 WBPE89724 R3 WBPE8940601 WBNEEB8724 R3 WBP890586 N/A WBP890586 N/A WBP890586 N/A WBP890279 WBSCA940032 WBPER940423 N/A	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Add noise suppression m Condition A8 of SCRWBI Replace scintillator if req Condition A8 of SCRWBI Correct valve depiction Condition A2 of SCRWBI Condition A2 of SCRWBI Condition A8, of SCRWBI Replace power supply in Preoperational test criteri Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M Provide matenals and ins R4 of design criteria, WB SSDs Add notes to Instrument T Test requirements	power supply power supply etworks, correct detector loop NEEB8724, rebuild detectors lifed NEEB8724, documentation c NEEB8724, gen smpl line up NEEB8724, sample line as-c R-163, 164 a mon. w/EMI tape; reroute si loops and isolator ground pi 12 and test recorders for inte tructions for coax to single co -DC-40-24 R4, resolved field	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet is constructed gnal cbls from ratemeter to detector in c oblem erface with Class 1E ratemeters onductor transition deficiencies or incorporated exceptions	ond. for 0-RE-90-125, 126

#### clear Plant Watts B ng System (RMS) Radiation Mo Deficiencies

				acting RMS			
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:				
0-RE-90-132		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:		
	Particulate, Iodine & Gas (PIG)	No	Yes	No	No		
Monitor Description:	Service Building Ventilation Mo	nitor					
TVA Deficiency:	Description of Deficiency:			· .			
WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP870069 WBP870074 WBP880197 WBP880197 WBP880197 WBP880192 WBP800159 NCR W-272-P WBNEEB8553 CRDR HED 109	Condition A1 of WBNEEB8724, non-isokine: Condition A2 of WBNEEB8724, general sam Condition A8 of WBNEEB8724, Documental Particulate filter failure due to non-metallic p ALARA concern, sample chamber contamina Missing pipe tubing caps Lack of mounting details for flow elements Noise causes spurious actuations Air Monitor isokinetic sampling system probl Undocumented changes to ratemeters Calibration documentation missing Non-monitored potentially radioactive release Iodine Io flow switches don't work in applicat Lack of load data Radiation analyzer indicator light labels	tic sample uple line routing problems tion inconsistencies arts tition lems				•	
CRDR HED 89/HEC 5240 WBSCA940032 WBPER940423 WBPER940670 WBPER950650	Recorder scales Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa	he electronics box					
CRDR HED 89/HEC 5240 WBSCA940032 WBPER940423 WBPER940670 WBPER950650	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa	he electronics box ample valves	)esian Changes/Fi	eld Modifications:			
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940423 WBPER940670 WBPER950650 Design Change Notice:	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa	he electronics box ample valves Description of [	u u	eld Modifications:			
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940673 WBPER940670 WBPER950650 Design Change Notice: 02243 03445	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to the Difficulty in obtaining sample through grab sa Related Deficiency: WBP880197 WBP870728	he electronics box ample valves Description of [ Document flow element r Install pipe tubing caps	nounting				
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940423 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa Related Deficiency: WBP880197 WBP870728 WBNEEB8724 R3	he electronics box ample valves Description of E Document flow element r Install pipe tubing caps Condition A2 of WBNEEE	nounting 38724, piping classification do				
CRDR HED 89/HEC 5240 WBSCA940032 WBPER940423 WBPER950670 WBPER950650 Design Change Notice: 02243 03445 04192 06378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa Related Deficiency: WBP800197 WBP870728 WBNEEB8724 R3 WBP890192	he electronics box ample valves Description of E Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an	nounting 38724, piping classification do d power supply				
CRDR HED 89/HEC 5240 WBSCA940032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to the Difficulty in obtaining sample through grab sa Related Deficiency: WBP880197 WBP880197 WBP870728 WBNEEB8724 R3 WBP890192 CRDR HED 109	be electronics box ample valves Description of [ Document flow element r Install pipe tubing caps Condition A2 of WBN/EEE Install new ratemeters an Install new ratemeters an	nounting 38724, piping classification do d power supply d power supply	ocumentation correction			
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940423 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa Related Deficiency: WBP880197 WBP880197 WBP880192 WBNEEB8724 R3 WBP880192 CRDR HED 109 WBNEEB8724 R3	be electronics box ample valves Description of E Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE	nounting 38724, piping classification do d power supply d power supply 38724, sample line document	ocumentation correction			
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940423 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378 06973 07445	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa Related Deficiency: WBP80197 WBP870728 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	be electronics box ample valves <b>Description of E</b> Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters Condition A8 of WBNEEE Condition A4 of WBNEEE	nounting 38724, piping classification do d power supply d power supply 38724, sample line document: 38724, upgrade air monitor sa	ocumentation correction			
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940673 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378 06373 07445 07445	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa Related Deficiency: WBP880197 WBP870728 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	be electronics box ample valves Description of L Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Condition A3 of WBNEEE Condition A1 of WBNEEE Upgrade air monitor sam	nounting 38724, piping classification do d power supply d power supply 38724, sample line document: 38724, upgrade air monitor sa Jing system	ocumentation correction			
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06373 07445 07445 07445	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa Related Deficiency: WBP880197 WBP880197 WBP800192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBN820409 WBP880409 WBP880409	be electronics box ample valves Description of I Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE Condition A4 of WBNEEE Upgrade air monitor sam Add noise suppression ne	nounting 38724, piping classification do d power supply d power supply 38724, sample line documenta 38724, upgrade air monitor sa biling system etworks, correct detector loop	ation correction ation correction Impling system grounds			
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940423 WBPER940670 WBPER950650 Design Change Notice: 02243 03445 04192 06378 06378 06378 06378 06377 07445 07445 09378 09378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP80197 WBP870728 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP880019 WBNEEB8724 R3 WBP880018 WBP880318 WBNEEB8724 R3	he electronics box ample valves Description of E Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE Upgrade air monitor samy Add noise suppression ne Condition A8 of WBNEEE	nounting 38724, piping classification do d power supply d power supply 38724, sample line document; 38724, upgrade air monitor sa oling system etworks, correct detector loop 8724, Rebuild detectors, star	ocumentation correction ation correction Impling system grounds ndardize internal wiring, delete requirem	nent for local alarm from desi	ign criteria	
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378 06373 07445 07445 07445 07445 07445 09378 09378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the IOCFM filters to it Difficulty in obtaining sample through grab sa WBP880197 WBP880197 WBP870728 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP880318 WBP880318 WBP880318 WBP8803192	he electronics box ample valves Description of L Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Condition A4 of WBNEEE Condition A4 of WBNEEE Upgrade air monitor sam Add noise suppression ne Condition A8 of WBNEEE Return defective preamp	nounting 38724, piping classification do d power supply d power supply 38724, sample line document 38724, upgrade air monitor sa bling system etworks, correct detector loop 38724, Rebuild detectors, star boards to documented configu	ocumentation correction ation correction impling system grounds ndardize internal wiring, delete requirem uration	nent for local alarm from desi	ign criteria	
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378 06373 07445 07445 09378 09378 09378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP880197 WBP880197 WBP880197 WBP880192 CROR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP880409 WBP880409 WBP880182 WBP890192 WBP890192 WBP801069	he electronics box ample valves Description of I Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE Condition A4 of WBNEEE Upgrade air monitor sam Add noise suppression ne Condition A8 of WBNEEE Return defective preamp Assure that metallic parts	nounting 38724, piping classification do d power supply d power supply 38724, sample line document 38724, upgrade air monitor sa oling system etworks, correct detector loop 38724, Rebuild detectors, star boards to documented configu will be supplied as necessan	ocumentation correction ation correction ampling system grounds ndardize internal wiring, delete requirem uration y for part filter drive	nent for local alarm from desi	ign criteria	
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940423 WBPER940670 WBPER950650 Design Change Notice: 02243 03445 04192 06378 06378 06378 06378 06378 06378 09378 09378 09378 09378 09378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP80197 WBP870728 WBNEEB8724 R3 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBP880409 WBNEEB8724 R3 WBP880409 WBP880318 WBNEEB8724 R3 WBP8800192 WBP8800192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP87069 WBNEEB8724 R3	he electronics box ample valves Description of E Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE Upgrade air monitor sam Add noise suppression ne Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE	nounting 38724, piping classification do d power supply d power supply 38724, sample line document; 38724, upgrade air monitor sa oling system etworks, correct detector loop 38724, Rebuild detectors, star boards to documented configu will be supplied as necessary 38724, documentation only co	ocumentation correction ation correction ampling system grounds ndardize internal wiring, delete requirem uration y for part filter drive	nent fór local alarm from desi	ign criteria	
CRDR HED 89/HEC 5240 WBSCA940032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 078 06378 078 078 078 078 078 078 078 078 078 0	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP800197 WBP800197 WBP870728 WBNEEB8724 R3 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBP880409 WBNEEB8724 R3 WBP880018 WBNEEB8724 R3 WBP880018 WBNEEB8724 R3 WBP890192 WBP870069 WBNEEB8724 R3 NCR W-272-P	he electronics box ample valves Description of E Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Condition A4 of WBNEEE Condition A4 of WBNEEE Upgrade air monitor sam Add noise suppression ne Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Replace iodine low flow s	nounting 38724, piping classification do d power supply d power supply 38724, sample line document 38724, upgrade air monitor sa bling system etworks, correct detector loop a8724, Rebuild detectors, star boards to documented configu will be supplied as necessan 38724, documentation only co witch	ocumentation correction ation correction ampling system grounds ndardize internal wiring, delete requirem uration y for part filter drive	nent for local alarm from desi	ign criteria	
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940673 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378 06378 06378 06378 06378 06378 09378 09378 09378 09378 09378 09378 09378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP880197 WBP880197 WBP880197 WBP880192 CROR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP88009 WBP88009 WBP88009 WBP880192 WBP890192 WBP890192 WBP890192 WBP890192 WBP890192 WBP890193 WBNEEB8724 R3 NCR W-272-P WBP880318	he electronics box ample valves Description of I Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Condition A3 of WBNEEE Condition A4 of WBNEEE Condition A4 of WBNEEE Condition A4 of WBNEEE Return defective preamp Adsure that metallic parts Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Replace iodine low flow s	nounting 38724, piping classification do d power supply d power supply 38724, sample line document 38724, upgrade air monitor sa bling system etworks, correct detector loop a8724, Rebuild detectors, star boards to documented configu will be supplied as necessan 38724, documentation only co witch	ocumentation correction ation correction ampling system grounds ndardize internal wiring, delete requirem uration y for part filter drive	nent for local alarm from desi	ign criteria	
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940670 WBPER950650 Design Change Notice: 02243 03445 04192 06378 06378 06373 07445 07445 07445 09378 09378 09378 09378 09378 09378 09378 09378 09378	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP880197 WBP870728 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBN880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880408 WBNEEB8724 R3 WBP890192 WBP880018 WBNEEB8724 R3 NCR W-272-P WBP880318 CRDR HED 89/HEC 5240	he electronics box ample valves Description of I Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE Upgrade air monitor sam Add noise suppression ne Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Replace iodine low flows s Wrap internal detector ca Correct recorder scales	nounting 38724, piping classification do d power supply d power supply 38724, sample line document; 38724, upgrade air monitor sa oling system etworks, correct detector loop 38724, Rebuild detectors, star boards to documented configu will be supplied as necessary 38724, documentation only co witch bles with EMI tape	ocumentation correction ation correction ampling system grounds ndardize internal wiring, delete requirem uration y for part filter drive	nent fór local alarm from desi	ign criteria	
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 078 078 078 078 078 078 078 078 078 0	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the IOCFM filters to the Difficulty in obtaining sample through grab sa WBP880197 WBP880197 WBP870728 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8	he electronics box ample valves Description of L Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Condition A3 of WBNEEE Condition A4 of WBNEEE Upgrade air monitor samp Add noise suppression ne Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Replace iodine low flow s Wrap internal detector ca Correct recorder scales Replace yellowed Nal cry	nounting 38724, piping classification do d power supply d power supply 38724, sample line document: 38724, upgrade air monitor sa bling system etworks, correct detector loop stroks, correct detector, star boards to documented configu will be supplied as necessan 38724, documentation only co witch bles with EMI tape stal	ocumentation correction ation correction impling system grounds ndardize internal wiring, delete requirem uration y for part filter drive orrections	nent for local alarm from desi	ign criteria	·
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378 06373 07445 09378 09378 09378 09378 10604 23237 23237 23237 23237	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP880197 WBP880197 WBP870728 WBNEEB8724 R3 WBP880409 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP880409 WBN8EB8724 R3 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880409 WBP880408 WBP890192 WBP890192 WBP890192 WBP890192 WBP890192 WBP890192 WBP890192 WBP890192 WBP890192 WBP890192 WBP890192 WBP800318 CRDR HED 89/HEC 5240 N/A WBPER940670	he electronics box ample valves Description of I Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE Condition A4 of WBNEEE Condition A4 of WBNEEE Return defective preamp Add noise suppression nd Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Replace iodine low flow s Wrap internal detector ca Correct recorder scales Replace yellowed Nal cry Corrects degraded wiring	nounting 38724, piping classification do d power supply d power supply 38724, sample line document 38724, upgrade air monitor sa bing system etworks, correct detector loop 38724, Rebuild detectors, star boards to documented config will be supplied as necessan 38724, documentation only co witch bles with EMI tape stal 10 CFR filter to electronics bo	ocumentation correction ation correction umpling system grounds ndardize internal wiring, delete requirerr uration y for part filter drive prections	nent for local alarm from desi	ign criteria	
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 078 078 078 078 078 078 078 078 078 0	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP8370728 WBP870728 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP880019 WBNEEB8724 R3 WBP880018 WBP880018 WBP880018 WBP880018 WBP8800192 WBP8800192 WBP8800192 WBP880018 WBNEEB8724 R3 WBP8800192 WBP880018 WBNEEB8724 R3 NCR W-272-P WBP8800318 CRDR HED 89/HEC 5240 N/A WBPER940670 WBSCA940032	he electronics box ample valves Description of I Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE Condition A8 of WBNEEE Condition A8 of WBNEEE Condition A8 of WBNEEE Return defective preamp Add noise suppression ne Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Replace iodine low flow s Wrap internal detector ca Correct recorder scales Replace yellowed Nal cry Corrects degraded wiring Provide materials and insi	nounting 38724, piping classification do d power supply d power supply 38724, sample line document; 38724, reprade air monitor sa bling system etworks, correct detector loop stords, correct detector loop stords to documented configu will be supplied as necessan 38724, documentation only co witch bles with EMI tape stal 10 CFR filter to electronics bo tructions for coax to single cor	ocumentation correction ation correction impling system grounds ndardize internal wiring, delete requirem uration y for part filter drive prrections	nent fór local alarm from desi	ign criteria	· · ·
CRDR HED 89/HEC 5240 WBSCA940032 WBPER940670 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378 06378 06378 06378 06378 06373 07445 07445 07445 07445 09378 03378 035	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP800197 WBP870728 WBNEEB8724 R3 WBP8800192 CRDR HED 109 WBNEEB8724 R3 WBP880409 WBP880409 WBP880318 WBNEEB8724 R3 WBP8800192 WBP8800192 WBP8800192 WBP8800192 WBP880018 WBNEEB8724 R3 NCR W-272-P WBP880318 CRDR HED 89/HEC 5240 N/A WBPER940670 WBSCA940032 WBPER940423	he electronics box ample valves Description of I Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Install new ratemeters an Install new ratemeters an Condition A8 of WBNEEE Upgrade air monitor samp Add noise suppression ne Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Replace iodine low flow s Wrap internal detector scales Replace yellowed Nal cry Corrects degraded wiring Provide materials and insi Resolves or incorporates Air monitor SSDs	nounting 38724, piping classification do d power supply d power supply 38724, sample line document 38724, upgrade air monitor sa bing system etworks, correct detector loop 38724, Rebuild detectors, star boards to documented config will be supplied as necessan 38724, documentation only co witch bles with EMI tape stal 10 CFR filter to electronics bo	ocumentation correction ation correction impling system grounds ndardize internal wiring, delete requirem uration y for part filter drive prrections	nent for local alarm from desi	ign criteria	· · · · · · · · · · · · · · · · · · ·
CRDR HED 89/HEC 5240 WBSCA340032 WBPER940673 WBPER950650 <b>Design Change Notice:</b> 02243 03445 04192 06378 06378 06378 06378 06378 06378 09378 09378 09378 09378 09378 10604 23237 23237 23237 23237 23237 23237 23237	Coax to single conductor transition General sample line deficiencies based on the Degraded wiring from the 10CFM filters to th Difficulty in obtaining sample through grab sa WBP8370728 WBP870728 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP880019 WBNEEB8724 R3 WBP880018 WBP880018 WBP880018 WBP880018 WBP8800192 WBP8800192 WBP8800192 WBP880018 WBNEEB8724 R3 WBP8800192 WBP880018 WBNEEB8724 R3 NCR W-272-P WBP8800318 CRDR HED 89/HEC 5240 N/A WBPER940670 WBSCA940032	he electronics box ample valves Description of E Document flow element r Install pipe tubing caps Condition A2 of WBNEEE Install new ratemeters an Condition A3 of WBNEEE Condition A4 of WBNEEE Condition A4 of WBNEEE Condition A8 of WBNEEE Return defective preamp Assure that metallic parts Condition A8 of WBNEEE Replace iodine low flow s Wrap internal detector ca Correct recorder scales Replace yellowed Nal cry Corrects degraded wiring Provide materials and insy	nounting 38724, piping classification do d power supply d power supply 38724, upgrade air monitor sa bling system etworks, correct detector loop stworks, correct detector, star boards to documented configu will be supplied as necessan 38724, documentation only co witch bles with EMI tape stal 10 CFR filter to electronics bo tructions for coax to single con exceptions in design criteria V	ocumentation correction ation correction impling system grounds ndardize internal wiring, delete requirem uration y for part filter drive prrections	nent for local alarm from desi	ign criteria	

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Radiation Monitor:	Deficiencies Impacting RMS Monitor Type: Monitor Classification:								
0-RE-90-132, 0-LPF-90-320	Particulate, Iodine & Gas (PIG)	Tech Spec: No	ODCM: Yes	· <b>Reg. Guide 1.97:</b> No	Safety Related: No				
Monitor Description:	Service Building Ventilation Mon	itor							
TVA Deficiency: WBNEEB8724 R3 WBNEEB8724 R3 WBPEEB8724 R3 WBPFR940601 PIRWBNNEB8667 WBP870728 WBP880197 WBP880197 WBP880197 WBP880197 WBP880197 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP880192 WBP890159 W-272-P WBNEEB8553 CRDR HED 109 CRDR HED 109 CRDR HED 109 CRDR HED 89/HEC 5240 WBPER940032 WBPER940670 WBPER950650	Description of Deficiency: Condition A1 of WBNEEB8724, Non-isokineti Condition A2 of WBNEEB8724, General samp Condition A8 of WBNEEB8724, Documentatio Doc errors, missing design output Service Bldg piping class Missing pipe tubing caps Lack of mounting details for flow elements Noise causes spurious actuations Air Monitor isokinetic sampling system problet Undocumented changes to ratemeters Calibration documentation missing Non-monitored potentially radioactive release p Iodime to flow switches don't work in applicatic Lack of load data Radiation analyzer indicator light labels Recorder Scales Coax to single conductor transition General sample line deficiencies based on the d Degraded wiring from the 10CFM filters to the Difficulty in obtaining sample through grab sam	ole line routing problems on inconsistencies ms bath on lesign criteria electronics box				· , · · · · · · · · · · · · · · · · · ·			

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:		1.1	
02243	WBP880197	Document flow element mounting	-		
03445	WBP870728	Install pipe tubing caps			
04192	PIRWBNNEB8667	Piping classification documentation correction			
06378	WBP890192	Install new ratemeters and power supply			
06378	CRDR HED 109	Install new ratemeters and power supply			
06973	WBNEEB8724 R3	Condition A8 of WBNEEB8724, Sample line documentation correction			
07445	WBNEEB8724 R3	Condition A1 of WBNEEB8724, Upgrade Air Monitor sampling system			
07445	WBP880409	Upgrade Air Monitor sampling system			
09378	WBP880318	Add noise suppression networks, correct detector loop grounds			
09378	WBNEEB8724 R3	Condition A8 of WBNEEB8724, rebuild detectors, standardize internal wiring, delete romt for local alarm from design criteria			
09378	WBP890192	Return defective preamp boards to documented configuration			
36049	WBPER940601	Correct valve depiction	7 ·		
10604	WBNEEB8724 R3	Condition A8 of WBNEEB8724, documentation corrections only	· ·		
23237	W-272-P	Replace iodine low flow switch			
23237	WBP880318	Wrap internal detector cables with EMI tape			
23237	CRDR HED 89/HEC 5240		~		
9378	N/A	Replace yellowed Nal crystal			
33714	WBPER940670	Corrects degraded wiring 10 CEM filter to electronics box			
23167	WBSCA940032	Provide materials and instructions for coax to single conductor transition			
36528	WBPER940423 N/A	Resolves or incorporates exceptions in design criteria WB-DC-40-24, R4			
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	WBPER940601	Air monitor SSDs			
N-37566	N/A	Resolve ground loops - shield ties			
5-38326	N/A	Correct control drawings			
37132	N/A	Correct control drawings Revise particulate motors			
34195	N/A	Replace quick disconnect			

Watts Burnelear Plant Radiation Monophy System (RMS) Deficiencies Impacting RMS

			Deficiencies Impac	cting RMS		
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:			
0-RE-90-133		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Liquid	No	Yes	Yes	Yes	
Monitor Descriptio	n: Essential Raw Cooling Wa	ter Effluent Monitor				
TVA Deficiency:	Description of Deficie	ncy:	-			·
WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601 WBP870728 WBP880271 WBP880271	Condition A2 of WBNEEB8724, gene Condition A8 of WBNEEB8724, doct Condition D of WBNEEB8724, test a Condition D of WBNEEB8724, Temp Doc errors Missing pipe tubing caps Non-qualified flow switch	imentation inconsistencies nd isolation valves not class C				
WBP880318 WBP880531 WBP890192 WBP890206, WBP890561SCA WBP890396 WBP890586	Noise problems Carbon steel pipe not replaced by con Undocumented changes to ratemeters Temperatures above detector limits Calibration documentation missing E-MAX isolator power supplies not q					,
WBPER910387 WBNEEB8553 WBNEEB8572 CRDR HED 109	Detector sensitivity will not meet ran Lack of load data Thermal effects on piping not conside Radiation analyzer indicator light labe	ge requirements red				
CRDR HED 89/HEC 5252 WBPER940279 WBPER940423 WBSCA940032 WBFIR940028	Recorder scales Non-qualified recorders tied directly t General sample line deficiencies Coax to single conductor transition Inconsistencies in FSAR, Q-List, des					
Design Change Noti 03445 04337 06378 06800 06873 07104 09308 10425 30312 10604 11304 17010 23235 23235 23235 09308 30248	CCE: Related Deficiency: WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBN8EEB8724 R3 WBP890386 WBP880271 N/A CRDR HED 89/HEC 5252 WBP880271 WBP890396 WBP880271	Install missing pipe tubing Replace root valves w/ss Install new ratemeters an Install new ratemeters an Condition A2 of WBNEEE Condition A8 of WBNEEE Condition A8 of WBNEEE Condition A8 of WBNEEE Condition D of WBNEEE PAM upgrades Condition A8 of WBNEEE Install qualified power sug Take credit for existing ele Correct vendor manual to Correct recorder scales Order and install correct of	globes d power supply d power supply d8724, Exception not required ( 38724, Sample line as construct 38724, slope/globe valve excep 38724, correct loop grounding f 3724, replace purge/test valves 38724, documentation correction opplies in R-163, 164 (E-MAX) certrical isolation for flow switch	(WB-DC-40-24 R4) cted ption to ER Spec for single point ground, assure preamp s with qualified valves ons h	board per drawing configuration	۱, rebuild detectors
23167 PR-W-8375 36031 W-37518 W-37677 S-36049	WBSCA340032 WBPER940279 WBPER940423 N/A WBPER940279 N/A WBPER940601	Provide materials, instruct Test recorders for interfac Resolve or incorporate ev SSDs Downgrade pumps Add notes to Isolation tab Ground loops - shielded ti Correct depiction of valves	tions for coax to single conduct re with Class 1E ratemeters acceptions to design criteria WB s, special requirements for reco	tor transition	141254	
W-37677		Ground loops - shielded ti	es and isolator grounds			

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### Watts Bound Clear Plant Radiation Monthly System (RMS) Deficiencies impacting RMS

				cung RMS	•	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:	<u>.</u>		
0-RE-90-134		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Liquid	No	Yes	Yes	Yes	
Manifan Daaarintian.	Essential Raw Cooling Water	Effluent Monitor		· · ·		
Monitor Description:	-		·	•		
TVA Deficiency:	Description of Deficiency					
WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP88070728 WBP88071 WBP88071 WBP88071 WBP88071 WBP88071 WBP88071 WBP88071 WBP89072 WBP89072 WBP89072 WBP89072 WBP89072 WBP89072 WBP89072 WBP89072 WBP89072 WBP89072 WBP89072 WBP89072 WBP8772 CRDR HED 109 CRDR	Condition A2 of WBNEEB8724, general s Condition A8 of WBNEEB8724, documen Condition D of WBNEEB8724, test and is Condition G of WBNEEB8724, test and is Condition G of WBNEEB8724, Temperate DOC ERRORS Missing pipe tubing caps Non-qualified flow switch Noise problems Carbon steel pipe not replaced by construct Undocumented changes to ratemeters Temperatures above detector limits Calibration documentation missing E-MAX isolator power supplies not qualif Detector sensitivity will not meet range ret Lack of load data Thermal effects on piping not considered Radiation analyzer indicator light labels Recorder scales Non-qualified recorders tied directly to Cli	itation inconsistencies solation valves not class C ures above detector limits tion ied quirements		, 4		
WBPER940423	General sample line deficiencies					
WBPER940423 WBSCA940032 WBF1R940028						
WBPER940423 WBSCA940032	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design cr	iteria	Design Changes/Fie	eld Modifications:		; `
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design cr Related Deficiency: WBP870728	iteria Description of I Install missing pipe tubin	Design Changes/Fie	eld Modifications:		: `
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design cr Related Deficiency: WBP870728 WBP880531	iteria Description of I Install missing pipe tubin Replace root valves w/ss	g caps globes	eld Modifications:		: `
WBFER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er <b>Related Deficiency:</b> WBP870728 WBP880531 WBP8890192	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar	g caps globes nd power supply	eld Modifications:		: `
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design cr Related Deficiency: WBP870728 WBP880531 WBP890192 CRDR HED 109	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar	g caps globes nd power supply nd power supply			
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06800	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design or <b>Related Deficiency:</b> WBP870728 WBP880531 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE	g caps globes id power supply ad power supply B8724, Exception not required	(WB-DC-40-24 R4)		:••
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06378 06378	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er <b>Related Deficiency:</b> WBP8870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3	iteria <b>Description of I</b> Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A8 of WBNEE	g caps globes Id power supply ad power supply B8724, Exception not required B8724, Sample line as constru	(WB-DC-40-24 R4) cted		: •
WBFER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design or WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A3 of WBNEE Condition A3 of WBNEE	g caps globes Id power supply d power supply B8724, Exception not required B8724, Sample line as constru B8724, slope/globe valve excep B8724, correct loop grounding j	(WB-DC-40-24 R4) cted stion to ER Spec for single point ground, assure preamp	board per drawing configuration, rebuild detectors	;*
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06800 06800 06973 07104 09308	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design cr WBP870728 WBP880531 WBP880531 WBP880531 WBP880531 WBP880531 WBP880792 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A3 of WBNEE Condition A3 of WBNEE	g caps globes d power supply d power supply B8724, Exception not required B8724, Sample line as constru B8724, slope/globe valve excep	(WB-DC-40-24 R4) cted stion to ER Spec for single point ground, assure preamp	board per drawing configuration, rebuild detectors	. · ·
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06378 06378 06973 07104 09308	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP8070728 WBP880531 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Condition D of WBNEEB	g caps globes d power supply d power supply 88724, Exception not required 88724, Sample line as constru 88724, slope/globe valve excep 88724, correct loop grounding 8724, replace purge/test valves	(WB-DC-40-24 R4) cted tion to ER Spec for single point ground, assure preamp s with qualified valves	board per drawing configuration, rebuild detectors	;•
WBPER940423 WBFIR940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06800 06973 07104 09308 10425 10604	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design or WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A3 of WBNEE Condition D of WBNEEB Condition A8 of WBNEEB	g caps globes d power supply d power supply B8724, Exception not required B8724, Sample line as constru B8724, slope/globe valve excep B8724, correct loop grounding 8724, replace purge/test valves B8724, documentation correction	(WB-DC-40-24 R4) cted tion to ER Spec for single point ground, assure preamp s with qualified valves	board per drawing configuration, rebuild detectors	<i>;</i> ·
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06378 06370 06800 06973 07104 09308 10425 10604 11304	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 Q3 WBNEEB8724 Q3 WBNEEB8724 Q3 WBNEEB8724 Q3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Install qualified power su	g caps globes d power supply d power supply B8724, Exception not required B8724, Sample line as constru B8724, slope/globe valve excep B8724, correct loop grounding j 8724, replace purge/test valves S8724, documentation correctin pplies in R-163, 164 (E-MAX)	(WB-DC-40-24 R4) cted otion to ER Spec for single point ground, assure preamp s with qualified valves	board per drawing configuration, rebuild detectors	<i>:</i> · ·
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06873 07104 09308 10425 10604 11304 11304	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er <b>Related Deficiency:</b> WBP8870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Install qualified power su Take credit for existing el	g caps globes d power supply dd power supply B8724, Exception not required B8724, Sample line as construe B8724, slope/globe valve excep B8724, slope/globe valve excep B8724, correct loop grounding B8724, replace purge/test valves B8724, documentation correcti pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch	(WB-DC-40-24 R4) cted otion to ER Spec for single point ground, assure preamp s with qualified valves	board per drawing configuration, rebuild detectors	
WBFER940423 WBFER940022 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06800 06973 07104 09308 10425 10604 11304 11304 17010 23235	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design or WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 WBP880271, WBFIR940028 N/A	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A3 of WBNEE Condition A3 of WBNEEB Condition A3 of WBNEEB Condition A3 of WBNEEB Install qualified power su Take credit for existing el Correct vendor manual to	g caps globes d power supply dd power supply B8724, Exception not required B8724, Sample line as construe B8724, slope/globe valve excep B8724, slope/globe valve excep B8724, correct loop grounding B8724, replace purge/test valves B8724, documentation correcti pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch	(WB-DC-40-24 R4) cted otion to ER Spec for single point ground, assure preamp s with qualified valves	board per drawing configuration, rebuild detectors	
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06378 06370 06800 06973 07104 09308 10425 10604 11304 17010 23235 23235	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A2 of WBNEE Condition A3 of WBNEE Condition A8 of WBNEE Install qualified power su Take credit for existing el Correct vendor manual to Correct recorder scales	g caps globes d power supply d power supply B8724, Exception not required B8724, Sample line as constru B8724, slope/globe valve excep B8724, correct loop grounding j 8724, replace purge/test valves B8724, documentation correctin pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch or effect optical grease	(WB-DC-40-24 R4) cted otion to ER Spec for single point ground, assure preamp s with qualified valves	board per drawing configuration, rebuild detectors	; *
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06870 06973 07104 09308 10425 10604 11304 17010 23235 23235 23235 09308	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP8805728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Condition D of WBNEEB Condition A8 of WBNEEB Install qualified power su Take credit for existing el Correct vendor manual to Correct recorder scales Order and install correct i	g caps globes d power supply dd power supply B8724, Exception not required B8724, Sample line as construe B8724, slope/globe valve excep B8724, slope/globe valve excep B8724, correct loop grounding i 8724, replace purge/test valves B8724, documentation correctin pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch o reflect optical grease crystal size of 0-RE-90-140	(WB-DC-40-24 R4) cted bion to ER Spec for single point ground, assure preamp s with qualified valves ons	board per drawing configuration, rebuild detectors	<i></i>
WBFER940423 WBFIR940022 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06800 06973 07104 09308 10425 10604 11304 11304 11304 23235 23235 23235 23235 09308 30248	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 W	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A3 of WBNEE Condition A3 of WBNEEB Condition A3 of WBNEEB Condition A3 of WBNEEB Condition A3 of WBNEEB Install qualified power su Take credit for existing el Correct vendor manual to Correct recorder scales Order and install correct of Correct classification in O	g caps globes d power supply d power supply B8724, Exception not required B8724, Sample line as constru B8724, slope/globe valve excep B8724, correct loop grounding 1 8724, replace purge/test valves B8724, documentation correcting pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch oreflect optical grease crystal size of 0-RE-90-140 2-List for FS-90-133, 134, 140,	(WB-DC-40-24 R4) cted for single point ground, assure preamp s with qualified valves ons n 141. to 1(L)A	board per drawing configuration, rebuild detectors	
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06870 06973 07104 09308 10425 10604 11304 17010 23235 23235 23235 09308	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design or WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 W	iteria Description of I Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Condition D of WBNEEB Condition A8 of WBNEEB Correct recorder scales Order and install correct Correct classification in C Provide materials, instruct Test recorders for interfat	g caps globes d power supply d power supply B8724, Exception not required B8724, Sample line as constru- B8724, slope/globe valve excep B8724, slope/globe valve excep B8724, correct loop grounding ( 8724, replace purge/test valves B8724, documentation correction pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch or reflect optical grease crystal size of 0-RE-90-140 Q-List for FS-90-133, 134, 140, tions for coax to single conduc- e with Class 1E ratemeters	(WB-DC-40-24 R4) cted bion to ER Spec for single point ground, assure preamp s with qualified valves ons 1 141, to 1(L)A tor transition	board per drawing configuration, rebuild detectors	. ·
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06378 06370 06800 06973 07104 09308 10425 10604 11304 17010 23235 23335 09308 30248 23167 PR-W-8375	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 W	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Install qualified power su Take credit for existing el Correct recorder scales Order and install correct t Correct classification in C Provide materials, instruc Test recorders for interfar Resolve or incorporate e	g caps globes d power supply d power supply B8724, Exception not required B8724, Exception not required B8724, slope/globe valve excep B8724, correct loop grounding j 8724, replace purge/test valves B8724, documentation correctin pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch or effect optical grease crystal size of 0-RE-90-140 2-List for FS-90-133, 134, 140, tions for coax to single conduc	(WB-DC-40-24 R4) cted bion to ER Spec for single point ground, assure preamp s with qualified valves ons 1 141, to 1(L)A tor transition	board per drawing configuration, rebuild detectors	; ·
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06870 06973 07104 09308 10425 10604 11304 17010 23235 23235 23235 23235 09308 30248 23167 PR-W-8375 27485	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design or WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 W	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Condition D of WBNEEB Condition D of WBNEEB Install qualified power su Take credit for existing el Correct recorder scales Order and install correct to Correct cassification in C Provide materials, instruc Test recorders for interfact Resolve or incorporate e SSDs	g caps globes dl power supply dl power supply B8724, Exception not required B8724, Sample line as constru B8724, slope/globe valve excep B8724, slope/globe valve excep B8724, correct loop grounding ( 8724, replace purge/test valves B8724, documentation correction pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch or reflect optical grease crystal size of 0-RE-90-140 Q-List for FS-90-133, 134, 140, tions for coax to single conduc- e with Class 1E ratemeters	(WB-DC-40-24 R4) cted bion to ER Spec for single point ground, assure preamp s with qualified valves ons 1 141, to 1(L)A tor transition	board per drawing configuration, rebuild detectors	. •
WBFER940423 WBFIR940022 WBFIR940028 Oesign Change Notice: 03445 04337 06378 06378 06800 06973 07104 09308 10425 10604 11304 11304 11304 11304 11304 23235 23235 23235 23235 23235 23235 23248 23167 PR-W-8375 27485 36031	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBN8800271, WBFIR940028 N/A CRDR HED 89/HEC 5252 WBP8800271 WBSCA940032 WBPER940279 WBPER940279 WBPER940279 WBPER940279	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A2 of WBNEE Condition A3 of WBNEE Condition D of WBNEEB Condition D of WBNEEB Condition D of WBNEEB Condition A3 of WBNEEB Condition Composite at SSDs	g caps globes d power supply d power supply B8724, Exception not required B8724, Sample line as constru B8724, slope/globe valve excep B8724, lope/globe valve excep B8724, correct loop grounding 1 8724, replace purge/test valves B8724, documentation correctin pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch oreflect optical grease crystal size of 0-RE-90-140 2-List for FS-90-133, 134, 140, tions for coax to single conduct a with Class 1E ratemeters xceptions to design criteria WE	(WB-DC-40-24 R4) cted for single point ground, assure preamp s with qualified valves ons 1 141, to 1(L)A tor transition 8-DC-40-24 R4	· · · · · · ·	
WBPER940423 WBFIR940028 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06800 06973 07104 09308 10425 10604 11304 11304 11304 11304 23235 2335 2355 2355 2355 23555 23555 2355555555	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBN8800271, WBFIR940028 N/A CRDR HED 89/HEC 5252 WBP880032 WBP880032 WBP8800271 WBSCA940032 WBPER940279 WBPER940279	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEEE Condition A8 of WBNEEE Condition C of WBNEEE Condition A8 of WBNEEE Condition C of the context of the context for a context of the	g caps globes dlopower supply dlopower supply B8724, Exception not required B8724, Sample line as construe B8724, slope/globe valve excep B8724, slope/globe valve excep B8724, correct loop grounding i 8724, replace purge/test valves B8724, documentation correctin pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch oreflect optical grease crystal size of 0-RE-90-140 2-List for FS-90-133, 134, 140, tions for coax to single conduc- te with Class 1E ratemeters exceptions to design criteria WE	(WB-DC-40-24 R4) cted bion to ER Spec for single point ground, assure preamp s with qualified valves ons 1 141, to 1(L)A tor transition	· · · · · · ·	;·`
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06370 06800 06973 07104 09308 10425 10604 11304 17010 23235 23235 23235 09308 30248 23167 PR-W-8375 27485 36031 W-37518 W-37518 W-3767 S-36049	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBP880021 NA CRDR HED 89/HEC 5252 WBP8800271 WBPER940022 WBPER940022 WBPER940279 WBPER940601	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEEB Condition A8 of WBNEEB Correct recorder scales Order and install correct to Correct classification in C Provide materials, instruct Test recorders for interfar Resolve or incorporate e SSDs Downgrade pumps Add notes to Isolation tat Ground loops - shielded I	g caps globes dlopower supply dlopower supply B8724, Exception not required B8724, Sample line as construe B8724, slope/globe valve excep B8724, slope/globe valve excep B8724, correct loop grounding i 8724, replace purge/test valves B8724, documentation correctin pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch oreflect optical grease crystal size of 0-RE-90-140 2-List for FS-90-133, 134, 140, tions for coax to single conduc- te with Class 1E ratemeters exceptions to design criteria WE	(WB-DC-40-24 R4) cted for single point ground, assure preamp s with qualified valves ons 1 141, to 1(L)A tor transition 8-DC-40-24 R4	· · · · · · ·	
WBPER940423 WBFIR940028 WBFIR940028 Design Change Notice: 03445 04337 06378 06378 06378 06800 06973 07104 09308 10425 10604 11304 11304 11304 11304 23235 2335 2355 2355 2355 23555 23555 2355555555	General sample line deficiencies Coax to single conductor transition Inconsistencies in Q-list, FSAR, design er WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBN8800271, WBFIR940028 N/A CRDR HED 89/HEC 5252 WBP880032 WBP880032 WBP8800271 WBSCA940032 WBPER940279 WBPER940279	iteria Description of I Install missing pipe tubin Replace root valves w/sss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A2 of WBNEEE Condition A8 of WBNEEE Condition C of WBNEEE Condition A8 of WBNEEE Condition C of the context of the context for a context of the	g caps globes dlopower supply dlopower supply B8724, Exception not required B8724, Sample line as construe B8724, slope/globe valve excep B8724, slope/globe valve excep B8724, correct loop grounding i 8724, replace purge/test valves B8724, documentation correctin pplies in R-163, 164 (E-MAX) ectrical isolation for flow switch oreflect optical grease crystal size of 0-RE-90-140 2-List for FS-90-133, 134, 140, tions for coax to single conduc- te with Class 1E ratemeters exceptions to design criteria WE	(WB-DC-40-24 R4) cted for single point ground, assure preamp s with qualified valves ons 1 141, to 1(L)A tor transition 8-DC-40-24 R4	· · · · · · ·	

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#### Watts B plear Plant Radiation Mo g System (RMS)

		N N	Deficiencies imp	acting RMS	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
0-RE-90-135	Area	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Alea	No	No	Yes	No
Monitor Description:	Main Control Room Monitor			· .	
TVA Deficiency:	Description of Deficience				
SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890473P WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WB5CA940032 WBPER940072 WBP890492SCA	Condition A8 of SCRWBNEEB8724, do Inductive kickback from RL-1, failure re Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card et Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels ( Recorder scales (not applicable to 1-RE- Recorder scales (applicable only to 2-RE Recorder scales (applicable only to 1-RE Recorder scales (applicable only to 1-RE- Ndocumented method of transitioning fr RT-10, RT-11 calibrator documentation, Replace coax cable for cable damage issu	set (not applicable to O-RE-90-135) nange fit (not applicable to O-RE-90-135) 90-280, 2-RE-90-1,6,7,8,10) -90-280) om coax to TSP, triax, or single conv SE calibration methods		o connector termination	
Design Change Notice	: Related Deficiency:	Description of I	Design Changes/Fi	ield Modifications:	
02440 30312 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08588 08858 08859 09153 35114 37566 16544 06378 30312	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP80492SCA WBP890492SCA WBP890492SCA WBP890492SCA N/A F-24447 F-36399 N/A	Add diode, alarm relay cc PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new ratemeters & Install new detector and o Delete loops 235 & 236 Condition A8 of SCRWBI Correct recorder scales Add diode, alarm relay cc SSD for 0-RE-90-135 Replace recorders 1-RR- Purchase new RT-10, RT Provide materials/instruct Replace coax cable for cc Replace coax cable for cc	oil, RL-1, General Atomic En 135) power supply components, loop 002 NEEB8724, documentation c bil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 1-11 calibrators tions for transition from coax f able damage issue able damage issue able damage issue able damage issue able damage issue able damage issue able damage issue	gineering Change Order 12674 prrections only B, General Atomic Engineering Change to single conductors e 1-RE-90-7.61, and 0-RE-90-11 for opti	. · · ·

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		Ra		lear Plant g System (RMS) acting RMS			
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:				
0-RE-90-138	Particulate	<b>Tech Spec</b> : No	ODCM: No	<b>Reg. Guide 1.97:</b> No	Safety Related: No		
Monitor Description:	Waste Packaging Room Monite	or					
TVA Deficiency:	Description of Deficiency:						
SCRWBNEEB8724 R3	Condition A8 of WBNEEB8724, Documenta	tion inconsistencies	*				
WBP890192 WBP880318 WBP890396 WBP890422 WBNEEB8553	Undocumented changes to ratemeters Noise causes spurious actuations Calibration documentation missing Ratemeter cable damage on rough cable entry Lack of load data	y					
WBPER940423 WBPER940670 WBPER950553	General sample line deficiencies Degraded wiring from 10CFM moving filter Unanalyzed elbow in particulate line	10 electronics box					
	<b>、</b>						
Design Change Notice: 03001	Related Deficiency:			ield Modifications: be determined from recorder			۰.
06378 06973 07064 09786 09786	WBP890192 WBNEEB8724 R3 WBP890422 WBP880318 WBNEEB8724 R3	Add grommet to prevent v Add noise suppression ad Condition A8, rebuild dete	38724, as constructed sampl wire damage cross three relay coils and bu	zzer; correct ground for single point grou to as documented condition; make all w		ted; delete isolation transformer (	doc only,
10604	WBNEEB8724 R3	Condition A8 of WBNEE	38724, Documentation correc	ctions			
33714	WBPER940670	Corrects degraded wiring	, 10CFM moving filter to elec	tronics box (except loops 2-14)			
35152	N/A	Add sample line lengths f Resolve or incorporate ex	for 15, 17, 105, and 138 ceptions to design criteria W	B-DC-40-24 R4			

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Radiation Monitor: 0-RE-90-140       Monitor Type: Liquid       Monitor Classification: Tech Spec:       ODCM:       Reg. Guide 1.97:       Safety Related:         Monitor Description:       Essential Raw Cooling Water Effluent Monitor         TVA Deficiency:       Description of Deficiency:       Condition Ad or WBNEEB8774, screenal sample line routing problems         WINNEEB8724 R3       Condition Ad or WBNEEB8774, screenal sample line routing problems         WINNEEB8774 R3       Condition Ad or WBNEEB8774, screenal sample line routing problems         WINNEEB8774 R3       Condition Ad or WBNEEB8774, screenal sample line routing problems         WINNEEB8774 R3       Condition Ad or WBNEEB8774, screenal sample line routing problems         WINNEEB8774 R3       Condition Do fine problems         WINNEEB8774 R3       Condition Do fine problems         WINNEEB8774 R3       Condition Do winneEB8774, screenal sample line routing problems         WINNEEB8778 R3       Condition Do winneEB8774, screenal sample line routing problems         WINNEEB8778 R3       Condition Do winneEB8774, screenal sample line routing problems         WINNEEB8778 R3       Condition Do winneEB8774, screenal sample line routing problems         WINNEB8778 R3       Condition Ad or WBNEEB8774, screenal sample line routing problems         WINNEB87878 R3       Condition Do winneEB874, screenal sample line routing problems         WINNEB87878 R3			Ra		clear Plant ng System (RMS) pacting RMS	-	
Liquid     No     Yes     Yes       Monitor Description:     Essential Raw Cooling Water Effluent Monitor       TVA Deficiency:     Description of Deficiency:       WBNEEB8724 R3     Condition Af of WBNEEB873, spreal sample line routing problems       Condition Af of WBNEEB873, spreal sample line routing problems       Condition Af of WBNEEB874, spreal sample line routing problems       Condition Af of WBNEEB874, spreal sample line routing problems       Condition Af of WBNEEB874, spreal sample line routing problems       Condition Af of WBNEEB874, spreal sample line routing problems       WBNEEB8774 R3       Condition Af of WBNEEB874, temperatures above detactor limits       WBPSK0001       Doc errors       WBPSR012       WBPSR013       Calination dow switch       WBPSR013       Calination dow switch       WBPSR013       Calination dow switch       WBPSR013       Calination dow switch       WBPSR013       Calination dow detector limits       WBPSR013       Calination dow detector limits       WBPSR014       Calination dow detector limits       WBPSR015       Calination dow detector limits       WBPSR015       Calination dow detector limits       WBPSR015       Calination adary rendication gluit labels <td< th=""><th>Radiation Monitor:</th><th>Monitor Type:</th><th>Monitor Classif</th><th>ication:</th><th></th><th></th><th></th></td<>	Radiation Monitor:	Monitor Type:	Monitor Classif	ication:			
Liquid     No     Yes     Yes     Yes       Monitor Description:     Essential Raw Cooling Water Effluent Monitor       VA Deficiency:     Description of Deficiency:       WENEEB8774 R3     Condition A3 of WBNEEB8774, general sample line routing problems       WENEEB8774 R3     Condition A1 of WBNEEB8774, general sample line routing problems       WENEEB8774 R3     Condition A1 of WBNEEB8774, general sample line routing problems       WENEEB8774 R3     Condition A1 of WBNEEB8774, general sample line routing problems       WENEEB8774 R3     Condition D of WBNEEB8774, Temperatures above detector limits       WENEEB8774 R3     Condition D of WBNEEB8774, Temperatures above detector limits       WENEEB8774 R3     Condition D of WBNEEB8774, Temperatures above detector limits       WENEEB8774 R3     Condition D of WBNEEB8774, Temperatures above detector limits       WENEEB8774 R3     Condition D of WBNEEB8774, Temperatures above detector limits       WENEEB8774 R3     Condition D of WBNEEB8774, Temperatures above detector limits       WENEB8775     MERGE0005       WENEB8775     Carbon stele pipe not replaced by construction       WENEB8775     Carbon tamee range requirements       WENEB8775     Carbon tamee range requirements </th <th>0-RE-90-140</th> <th></th> <th>Tech Spec:</th> <th>ODCM:</th> <th>Reg. Guide 1.97:</th> <th>Safety Related:</th> <th></th>	0-RE-90-140		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
Monitor Description:       Essential Raw Cooling Water Effluent Monitor         WENEEB877: 83       Condition A2 of WENEEB874, general sample line routing problems         WENEEB877: 83       Condition A2 of WENEEB874, general sample line routing problems         WENEEB877: 83       Condition A2 of WENEEB874, general sample line routing problems         WENEEB877: 83       Condition A0 of WENEEB874, general sample line routing problems         WENEEB877: 83       Condition A0 of WENEEB874, general sample line routing problems         WENEEB877: 83       Condition A0 of WENEEB874, general sample line routing problems         WENEEB877: 83       Condition A0 of WENEEB874, general sample line routing problems         WENEEB877: 83       Condition A0 of WENEEB874, general sample line routing problems         WENEEB873       Condition A0 of WENEEB874, general sample line routing problems         WENERB070       Missing pipe tubing cage         WENERB071       Noise problems         WENERB073       Carbon stel pipe not replaced by construction         WENERB073       Carbon stel pipe not replaced by construction         WENERB073       Carbon stel pipe not replaced by construction         WENEB8533       Calination documentation missing         WENEB8533       Calination documentation missing         WENEB8533       Calination sabygen pindita of tight labels         CR		Liquid	No	Yes	•	-	
TVA Deficiency:     Description of Deficiency:       WBNEEB8724 R3     Condition A2 of WBNEEB8724, general sample line routing problems       WBNEEB8724 R3     Condition A2 of WBNEEB8724, general sample line routing problems       WBNEEB8724 R3     Condition A2 of WBNEEB8724, general sample line routing problems       WBNEEB8724 R3     Condition G of WBNEEB8724, term problems       WBREEB8724 R3     Condition G of WBNEEB8724, Temperatures above detector limits       WBPREA0001     Doc errors       WBP800201     Non-qualified low switch       WBP800303     Cardon stele pipe not replaced by construction       WBP800304     Calibration documentation missing       WBP800305     EMAX isolator power supplies not qualified       WBP80305     EMAX isolator power supplies not qualified       WBP80307     Thermal effects on piping not considered       RORN HED 109     Radiation analyzer indicator light labels       RORN HED 109     Radiation analyzer indicator light labels       WBPREN023     General stample line dricer is any line rine range       WBPREN023     Cardon stel di directly to Class IE ratemeters       WBPREN023     Cax to single conductor transition       WBPREN023     Cax to single	•• •• •• ••	Essential Raw Cooling Water Ef					
WBNEEB8724 R3       Condition A2 of WBNEEB8724, general sample line routing problems         WBNEEB8724 R3       Condition A2 of WBNEEB8724, documentation inconsistencies         WBNEEB8724 R3       Condition O of WBNEEB8724, test and lisolation valves not class C         WBNEEB8724 R3       Condition O of WBNEEB8724, Temperatures above detector limits         WBPER8724 R3       Condition O of WBNEEB8724, Temperatures above detector limits         WBPER840001       Doc errors         WBP880012       Noise problems         WBP880013       Cardon steel pipe not replaced by construction         WBP8800192       Undocumented changes to ratemeters         WBP8800192       Undocumented changes to ratemeters         WBP8800192       Undocumentation missing         WBP8800193       Calibration documentation missing         WBP8800193       Lack of load data         WBP880194       Detectors calibrity will be meet range requirements         WBP880195       Lack of load data         WBP801087       Detectors ealies         WBNEEB8531       Lack of load data         WBNEEB8532       Lack of load data         WBNEEB8534       Recorder steel difficiencies         WBPER940279       Non-qualified recorders tied directly to Class 1E ratemeters         WBPER940230       General sample line deficiencies	•						
WNEEB8724 R3       Condition A8 of WBNEEB8724, test and isolation valves not class C         WBNEEB8724 R3       Condition O for WBNEEB8724, test and isolation valves not class C         WBNEEB8724 R3       Condition G of WBNEEB8724, test and isolation valves not class C         WBNEEB8724 R3       Condition G of WBNEEB8724, test and isolation valves not class C         WBPER540601       Doc errors         WBP807078       Missing pipe tubing caps         WBP800511       Carbon steel pipe not replaced by construction         WBP800501       Carbon steel pipe not replaced by construction         WBP800505       Temperatures above detector limits         WBP800506       Temperatures upplies not qualified         WBP800507       Doc et rons         WBP800508       E-MAX isolator power supplies not qualified         WBP800505       E-MAX isolator power supplies not qualified         WBP800505       E-MAX isolator power supplies not qualified         WBP800507       Detector sensitivity will not meet range requirements         WBP800508       E-MAX isolator power supplies not qualified         WBP80051       Lack of load data         WBNEEB8533       Lack of load data         WBNEEB8534       Coad data         WBP800790       Non-qualified recorders tied directly to Clasa IE ratemeters         WBP800	•		•				
Design Change Notice: Related Deficiency: Description of Design Changes/Field Modifications	WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601 WBP870728 WBP880318 WBP880318 WBP880318 WBP880390 WBP890396 WBP890396 WBP890386 WBP890386 WBP890387 WBNEEB8553 WBNEEB8553 WBNEEB8553 WBNEEB8552 CRDR HED 109 CRDR HED 199 CRDR HED 199 KBPER940279 WBPER940279 WBPER94023	Condition A8 of WBNEEB8724, documentatio Condition D of WBNEEB8724, documentatio Condition G of WBNEEB8724, Temperatures Doc errors Missing pipe tubing caps Non-qualified flow switch Noise problems Carbon steel pipe not replaced by construction Undocumented changes to ratemeters Temperatures above detector limits Calibration documentation missing E-MAX isolator power supplies not qualified Detector sensitivity will not meet range require Lack of load data Thermal effects on piping not considered Radiation analyzer indicator light labels Recorder scales Non-qualified recorders tied directly to Class 11 General sample line deficiencies Coax to single conductor transition	n inconsistencies on valves not class C above detector limits ments E ratemeters		· ·		
O3445WBP870728Install missing pipe tubing caps04337WBP880531Replace root valves w/ss globes04337WBP880512Install new ratemeters and power supply06378CRDR HED 109Install new ratemeters and power supply06800WBNEEB8724 R3Condition A2 of WBNEEB8724, Exception not required (WB-DC-40-24 R4)06973WBNEEB8724 R3Condition A8 of WBNEEB8724, Sample line as constructed03312NAPan upgrade09308WBNEEB8724 R3Condition A8 of WBNEEB8724, replace purgeftest valves with qualified valves0425WBNEEB8724 R3Condition A8 of WBNEEB8724, replace purgeftest valves with qualified valves10425WBNEEB8724 R3Condition A8 of WBNEEB8724, replace purgeftest valves with qualified valves10504WBNEEB8724 R3Condition A8 of WBNEEB8724, replace purgeftest valves with qualified valves11304WBP890586Install mailified power supplies in R-163, 164 (E-MAX)11304WBP880271, WBFIR940028Take credit for existing electrical isolation for flow switch22235CRDR HED 89/HEC 5252Correct vender manual to reflect optical grease22236CRDR HED 89/HEC 5252Correct order solats is zer of 0-RE-90-14003248WBP890396Order and install correct crystal size of 0-RE-90-14003248WBP8640232Provide materials, instructions for coax to single conductor transition27485NASDS27485NASDS3031WBPER940279Test recorders for interface with Class IE ratemeters30314WBPER940279 <th>04337 06378 06378 06800 06973 30312 09308 10425 W-37566 10604 11304 17010 23235 23235 23235 23235 23235 23235 23235 23235 23248 23167 PR-W-8375 27485 38031 W-37518 W-37677</th> <th>WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724, WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 WBP880271, WBFIR940028 N/A CRDR HED 89/HEC 5252 WBP880271 WB7840032 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP8904279 WBPER940423 N/A</th> <th>Install missing pipe tubing Replace root valves w/ss Install new ratemeters and Condition A2 of WBNEEE Pam upgrade Condition A8 of WBNEEE Pam upgrade Condition A8 of WBNEEE Condition A8 of WBNEEE Install qualified power sup Take credit for existing ele Correct vendor manual to Correct recorder scales Order and install correct of Correct classification in Q Provide materials, instruct Test recorder so interfact Resolve or incorporate ex SSDs Downgrade pumps Add notes to Isolation tabb Ground loops - shielded tii</th> <th>a caps globes d power supply d power supply 18724, Exception not require 18724, Exception not require 18724, correct loop groundin 18724, correct loop groundin 18724, correct loop groundin 18724, documentation correct piles in R-163, 164 (E-MAX tectrical isolation for flow swil reflect optical grease nystal size of 0-RE-90-140 -List for FS-90-133, 134, 144 ions for coax to single condi e with Class 1E ratemeters ceptions to design criteria V s, special requirements for m</th> <th>ed (WB-DC-40-24 R4) tructed ng for single point ground, assure preamp t ves with qualified valves ctions .) tch 0, 141, to 1(L)A uctor transition VB-DC-40-24 R4</th> <th></th> <th></th>	04337 06378 06378 06800 06973 30312 09308 10425 W-37566 10604 11304 17010 23235 23235 23235 23235 23235 23235 23235 23235 23248 23167 PR-W-8375 27485 38031 W-37518 W-37677	WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724, WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 WBP880271, WBFIR940028 N/A CRDR HED 89/HEC 5252 WBP880271 WB7840032 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP890396 WBP8904279 WBPER940423 N/A	Install missing pipe tubing Replace root valves w/ss Install new ratemeters and Condition A2 of WBNEEE Pam upgrade Condition A8 of WBNEEE Pam upgrade Condition A8 of WBNEEE Condition A8 of WBNEEE Install qualified power sup Take credit for existing ele Correct vendor manual to Correct recorder scales Order and install correct of Correct classification in Q Provide materials, instruct Test recorder so interfact Resolve or incorporate ex SSDs Downgrade pumps Add notes to Isolation tabb Ground loops - shielded tii	a caps globes d power supply d power supply 18724, Exception not require 18724, Exception not require 18724, correct loop groundin 18724, correct loop groundin 18724, correct loop groundin 18724, documentation correct piles in R-163, 164 (E-MAX tectrical isolation for flow swil reflect optical grease nystal size of 0-RE-90-140 -List for FS-90-133, 134, 144 ions for coax to single condi e with Class 1E ratemeters ceptions to design criteria V s, special requirements for m	ed (WB-DC-40-24 R4) tructed ng for single point ground, assure preamp t ves with qualified valves ctions .) tch 0, 141, to 1(L)A uctor transition VB-DC-40-24 R4		

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Radiation Monitor:	Monitor Type:	Monitor Classif	fication:			
0-RE-90-141	1 invited	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Liquid	No	Yes	Yes	Yes	
Monitor Description:	Essential Raw Cooling Water	Effluent Monitor				
TVA Deficiency:	Description of Deficienc	<b>v:</b>				
WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601 WBP88071 WBP88071 WBP88071 WBP88071 WBP88071 WBP88071 WBP88071 WBP89070 CRDR HED 89070 CRDR	Condition A2 of WBNEEB8724, general Condition A8 of WBNEEB8724, docume Condition D of WBNEEB8724, test and i Condition G of WBNEEB8724, test and i Condition G of WBNEEB8724, Temperal Doc errors Missing pipe tubing caps Non-qualified flow switch Noise problems Carbon steel pipe not replaced by construe Undocumented changes to ratemeters Temperatures above detector limits Calibration documentation missing E-MAX isolator power supplies not quali Detector sensitivity will not meet range re Lack of load data Thermal effects on piping not considered Radiation analyzer indicator light labels Recorder scales Non-qualified recorders tied directly to Cl	ntation inconsistencies solation valves not class C tures above detector limits ction fied :quirements				>
WBPER940423 WBSCA940032 WBFIR940028 Design Change Notice:	General sample line deficiencies Coax to single conductor transition Inconsistencies between FSAR, Q-list, de Related Deficiency:		Design Changes/F	ield Modifications:		Ŀ
03445 04337 06378 06378 06800 06973 30312 09308 10425	WBP870728 WBP880531 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 N/A WBNEEB8724, WBP880318 WBNEEB8724 R3	Install missing pipe tubin Replace root valves w/ss Install new ratemeters ar Install new ratemeters ar Condition A2 of WBNEE Condition A8 of WBNEE Pam upgrade Condition A8 of WBNEE	ng caps globes d power supply dd power supply B8724, Exception not required B8724, Sample line as constr	t (WB-DC-40-24 R4) ucted g for single point ground, assure preamp	board per drawing configuration, reb	uild detectors
10604 11304 17010 23235 23235 23235 09308 30248 23167 PR-W-8375 27485 36031 W-37518 W-37577	WBNEEB8724 R3 WBP890586 WBP880271, WBFIR940028 N/A CRDR HED 89/HEC 5252 WBP890396 WBP880271 WBSCA940032 WBPER940279 WBPER940423 N/A WBPER940279 N/A WBPER940601	Install qualified power su Take credit for existing el Correct vendor manual to Correct recorder scales Order and install correct Correct classification in C Provide materials, instruc Test recorders for interfar Resolve or incorporate e SSDs Downgrade pumps Add notes to Isolation tab	crystal size of 0-RE-90-140 2-List for FS-90-133, 134, 140 tions for coax to single condu ce with Class 1E ratemeters xceptions to design criteria W	ch ), 141, to 1(L)A ictor transition	141254	

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## Watts Burnclear Plant Radiation Mound System (RMS) Deficiencies Impacting RMS

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Radiation Monitor: D-RE-90-205	Monitor Type:	Monitor Classifi Tech Spec:	cation: ODCM:	Pog C	Guide 1.97:	Safety Related:	
J-NE-90-200	Gas	No	No	No	Juide 1.97.	Yes	
			INO	NO		Tes	
Monitor Description:	Main Control Room Emerger	ncy Air Intake Monitor			, .		
TVA Deficiency:	Description of Deficience	ey:		· · · ·			
SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 WBP870728 WBP890192 WBP890396 WBNEEB8553 WBNEEB8553 WBNEEB8553 WBNEEB84038 CRDR HED 109 CRDR HED 109 CRDR HED/89/HEC 5252 WBSCA940032 WBP900190 WBP900190 WBP900190 WBPER940279 WBPER940423 WBPER940601	Condition A8 of SCRWBNEEB8724, dc Condition A2 of SCRWBNEEB8724, dc Missing pipe tubing caps Undocumented changes to ratemeters Calibration documentation missing Lack of load data Noise produces spurious actuations Radiation analyzer indicator light labels Recorder scales Coax to single conductor transitions E-MAX power supplies not qualified Non-radioactive check source Incorrect sample withdrawal point (loops Recorders tied directly to ratemeters with General sample line deficiencies with res Doumentation errors	ocumentation discrepancies eneral sample line routing problems 205, 206) h no isolator		· · · · · · · · · · · · · · · · · · ·			
Design Change Notice	: Related Deficiency:	Description of [	)esign Changes/F	ield Modifica	tions		
	WBP870728	Description of [ Add pipe tubing caps	)esign Changes/F	ield Modifica	tions:		
)3445 )6378	WBP870728 WBP890192	Add pipe tubing caps Install new ratemeters & p	ower supply	ield Modifica	tions:		
)3445 )6378 )6378	WBP870728 WBP890192 CRDR HED 109	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p	oower supply	,	tions:		
03445 06378 06378 09309	WBP870728 WBP890192 CRDR HED 109 WBP880318	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne	ower supply ower supply tworks, correct detector loo	p grounds			
)3445 6378 6378 9309 9309	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN	power supply power supply tworks, correct detector loo IEEB8724, rebuild detectors	p grounds			
03445 06378 06378 09309 09309 09309	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ	ower supply ower supply tworks, correct detector loop IEEB8724, rebuild detectors ired	p grounds s, standardize internal			
03445 06378 06378 05309 09309 09309 10604	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN	oower supply ower supply tworks, correct detector loop IEEB8724, rebuild detectors ired IEEB8724, documentation c	p grounds s, standardize internal			
03445 6378 56378 59309 59309 10604 10643 10443	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396	Add pipe tubing caps Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample	oower supply ower supply tworks, correct detector looj IEEB8724, rebuild detectors ired IEEB8724, documentation c line	p grounds 5, standardize internal corrections only	wiring	ol vive: slape excention	
03445 06378 06378 09309 09309 09309 09309 10604 10443 06795	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN	oower supply ower supply tworks, correct detector loop IEEB8724, rebuild detectors ired IEEB8724, documentation c	p grounds s, standardize internal corrections only grades: delete outlet	wiring	ol vive; slope exception	
03445 6378 56378 99309 99309 19309 10604 10443 56973 11304	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEE88724 R3	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A8, of SCRWBN Replace power supply in I	oower supply tworks, correct detector loop IEEB8724, rebuild detectors irred IEEB8724, documentation of line IEEB8724, gen smpl line up NEEB8724, sample line as-o R-163, 164	p grounds 6, standardize internal corrections only ngrades: delete outlet constructed	wiring	ol vive; slape exception	
03445 06378 06378 09309 09309 09309 10604 10604 10443 06795 06973 11304 11304	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2, of SCRWBN Condition A8, of SCRWBI Replace power supply in Condition A2 of SCRWBI	power supply power supply tworks, correct detector loop IEEB8724, rebuild detectors ired IEEB8724, documentation c line IEEB8724, gen smpl line up NEEB8724, sample line as- c-163, 164	p grounds 5, standardize internal corrections only ogrades: delete outlet constructed slope exception	l wiring It vive, add outlet iso		
03445 06378 06378 09309 09309 09309 09309 10604 10643 06795 06973 11304 11831 23236	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP880318	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A3, of SCRWBN Replace power supply in Condition A2 of SCRWBN Wrap detector cbis inside	power supply works, correct detector loop IEEB8724, rebuild detectors ired IEEB8724, documentation c line IEEB8724, gen smpl line up VEEB8724, sample line as- R-163, 164 IEEB8724, documentation: : mon. w/EMI tape; reroute si	p grounds s, standardize internal corrections only grades: delete outlet constructed slope exception ignal cbls from ratemi	l wiring It vive, add outlet iso		
03445 06378 06378 06379 09309 09309 09309 10604 10443 06795 06973 11304 11831 23236 W37677	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890586 N/A	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Replace power supply in I Condition A2 of SCRWBN Wrap detector cbls inside Resolve shield tie ground	bower supply tworks, correct detector loop IEEB8724, rebuild detectors irred IEEB8724, documentation of line IEEB8724, gen smpl line up NEEB8724, sample line as- R-163, 164 IEEB8724, documentation: of mon. w/EMI tape; reroute si loops and isolator ground pr	p grounds s, standardize internal corrections only grades: delete outlet constructed slope exception ignal cbls from ratem roblem	l wiring rt vive, add outlet iso eter to detector in co		
03445 06378 06378 09309 09309 09309 10604 10443 06795 06973 11304 11831 22236 W37677 31640	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890318 N/A WBPER940279	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A3, of SCRWBN Replace power supply in I Condition A2 of SCRWBN Wrap detector cbis inside Resolve shield tie ground Verify wiring correct in M-	bower supply tworks, correct detector loop IEEB8724, rebuild detectors irred IEEB8724, documentation of line IEEB8724, gen smpl line up VEEB8724, sample line as- cr.163, 164 IEEB8724, documentation: s mon. w/EMI tape; reroute si loops and isolator ground pri 2 and test recorders for inte	p grounds s, standardize internal corrections only grades: delete outlet constructed slope exception gnal cbls from ratem roblem efface with Class 1E r	l wiring rt vive, add outlet iso eter to detector in co		
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03445 06378 06378 09309 09309 09309 10604 10443 06795 06973 11304 11831 23236 W37677 31640 23167 27485 W37518	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP880318 N/A WBP880318 N/A WBP880318 N/A WBP840423	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBh Replace scintillator if requ Condition A8 of SCRWBh Reroute 205, 206 sample Condition A2, of SCRWBh Condition A2, of SCRWBh Wrap detector cbls inside Resolve shield tie ground Verify wining correct in M- Provide materials and insi R4 of design criteria, WB- SSDs Add notes to Instrument T	power supply power supply tworks, correct detector loop IEEB8724, rebuild detectors ired IEEB8724, documentation c line IEEB8724, gen smpl line up NEEB8724, sample line as- 3, 163, 164 IEEB8724, documentation: : mon. w/EMI tape; reroute si loops and isolator ground pr 12 and test recorders for inter ructions for coax to single ci	p grounds standardize internal corrections only grades: delete outlet constructed slope exception ignal cbls from ratem roblem enface with Class 1E r onductor transition deficiencies or incorr	I wiring It vive, add outlet iso eter to detector in co ratemeters porated exceptions	ond. for 0-RE-90-125, 126	
03445 06378 06378 06378 06309 09309 09309 09309 10604 10644 10443 06795 06973 11304 11831 23236 W37677 31640 23167 27485 W37518 S32449	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890318 N/A	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWB Replace scintillator if requ Condition A8 of SCRWB Reroute 205, 206 sample Condition A2 of SCRWB Condition A2 of SCRWB Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M- Provide materials and insi R4 of design criteria, WB- SSDs Add notes to Instrument T Test requirements	bower supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors irred IEEB8724, documentation c line IEEB8724, gen smpl line up NEEB8724, gen smpl line up NEEB8724, sample line as- Reference of the supplementation: s mon. w/EMI tape; reroute s loops and isolator ground pr 12 and test recorders for inte ructions for coax to single c DC-40-24 R4, resolved field abs - special regmts for record	p grounds standardize internal corrections only grades: delete outlet constructed slope exception ignal cbls from ratem roblem enface with Class 1E r onductor transition deficiencies or incorr	I wiring It vive, add outlet iso eter to detector in co ratemeters porated exceptions	ond. for 0-RE-90-125, 126	
03445 06378 06378 06309 09309 09309 10604 10443 06795 06973 11304 11831 23236 W37677 31640 23167 27485 W37518 S32449 W38500	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890318 N/A	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A2 of SCRWBN Wrap detector cbis inside Resolve shield tie ground Verify wiring correct in M- Provide materials and insis R4 of design criteria, WB- SSDS Add notes to Instrument T Test requirements Install noise suppression	power supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors ired IEEB8724, gen smpl line up VEEB8724, gen smpl line up VEEB8724, gan smpl line up VEEB8724, asmple line as- ca-163, 164 IEEB8724, documentation: s mon. w/EMI tape; reroute si loops and isolator ground pr 12 and test recorders for inte ructions for coax to single c DC-40-24 R4, resolved field abs - special reqmts for recor- on LED check sources card	p grounds s, standardize internal corrections only grades: delete outlet constructed slope exception ignal cbls from ratem roblem enface with Class 1E r onductor transition deficiencies or incorp orders based on seisr	I wiring It vive, add outlet iso eter to detector in co ratemeters porated exceptions	ond. for 0-RE-90-125, 126	
10443 06795 06973 11304 11831 23236 W37677 31640 23167 27485 W37518 S32449	WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP980396 WBNEEB8724 R3 WBP980190 WBNEEB8724 R3 WBP880586 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP880318 N/A WBP880318 N/A WBP880318 N/A WBPER940279 WBSCA940032 WBPER940423 N/A WBPER940279	Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A2 of SCRWBN Wrap detector cbis inside Resolve shield tie ground Verify wiring correct in M- Provide materials and insis R4 of design criteria, WB- SSDS Add notes to Instrument T Test requirements Install noise suppression	bower supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors irred IEEB8724, documentation c line IEEB8724, gen smpl line up NEEB8724, gen smpl line up NEEB8724, sample line as- Reference of the supplementation: s mon. w/EMI tape; reroute s loops and isolator ground pr 12 and test recorders for inte ructions for coax to single c DC-40-24 R4, resolved field abs - special regmts for record	p grounds s, standardize internal corrections only grades: delete outlet constructed slope exception ignal cbls from ratem roblem enface with Class 1E r onductor transition deficiencies or incorp orders based on seisr	I wiring It vive, add outlet iso eter to detector in co ratemeters porated exceptions	ond. for 0-RE-90-125, 126	

				lear Plant g System (RMS) acting RMS	·	
Radiation Monitor:	Monitor Type:	Monitor Classifi	•	-		
0-RE-90-206	-	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Gas	No	No	No	Yes	
Monitor Description:	Main Control Room Emergen	•				
TVA Deficiency:	Description of Deficienc	•				
SCRWBNEEB8724 R3 SCRWBNEEB8724 R3	Condition A8 of SCRWBNEEB8724, doo Condition A2 of SCRWBNEEB8724, get		۰.			
WBP870728	Missing pipe tubing caps	ieral sample the routing problems		`		
WBP890192 WBP890396	Undocumented changes to ratemeters Calibration documentation missing					
WBNEEB8553	Lack of load data					
WBP880318 CRDR HED 109	Noise produces spurious actuations Radiation analyzer indicator light labels					
CRDR HED/89/HEC 5252	Recorder scales					
WBSCA940032 WBP890586	Coax to single conductor transitions E-MAX power supplies not qualified		•			
WBP900107	Non-radioactive check source					
WBP900190 WBPER940279	Incorrect sample withdrawal point (loops Recorders tied directly to ratemeters with					
WBPER940423 WBPER940601	General sample line deficiencies with resp Documentation errors	pect to design criteria requirements				
	Documentation errors					
WBPER950182	Use of QA level III parts in QA level I eq	uipment (RC networks)				
	Use of QA level III parts in QA level I eq	uipment (RC networks)				
	: Related Deficiency:	· · · ·	Design Changes/F	ield Modifications:		
WBPER950182 Design Change Notice 03445	: Related Deficiency:	Description of D		ield Modifications:		
WBPER950182 Design Change Notice	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109	Description of E Add pipe tubing caps Install new raterneters & p Install new raterneters & p	power supply			· · · ·
WBPER950182 <b>Design Change Notice</b> 03445 06378 06378 06309	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318	Description of D Add pipe tubing caps Install new ratemeters & p Add noise suppression ne	ower supply ower supply tworks, correct detector loop	o grounds		· · · · · · · · · · · · · · · · · · ·
WBPER950182 <b>Design Change Notice</b> 03445 06378 06378 063309 09309 09309	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396	Description of E Add pipe tubing caps Install new raterneters & p Install new raterneters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ	ower supply ower supply tworks, correct detector loop IEEB8724, rebuild detectors iired	o grounds , standardize internal wiring		· · · · · · · · · · · · · · · · · · ·
WBPER950182 Design Change Notice 03445 06378 06378 06378 09309 09309 10604	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3	Description of D Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN	oower supply bower supply itworks, correct detector loop IEEB8724, rebuild detectors, lired IEEB8724, documentation c	o grounds , standardize internal wiring		· · · · · · · · · · · · · · · · · · ·
WBPER950182 <b>Design Change Notice</b> 03445 06378 06378 06309 09309 10604 10443 06795	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBN2EB8724 R3 WBN2EB8724 R3 WBN2EB8724 R3	Description of E Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN	ower supply ower supply tworks, correct detector loop IEEB8724, rebuild detectors irred IEEB8724, documentation c line IEEB8724, gen smpl line up	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet isc	ol vive; slope exception	· · · · · · · · · · · · · · · · · · ·
WBPER950182 <b>Design Change Notice</b> 03445 06378 06378 09309 09309 10604 10443 06975 06973	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP800396 WBNEEB8724 R3 WBP900190	Description of D Add pipe tubing caps Instail new ratemeters & p Instail new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A8, of SCRWBN	oower supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors, iired IEEB8724, documentation c line IEEB8724, gen smpl line up; NEEB8724, sample line as-c	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet isc	ol vive; slope exception	· · · · · · · · · · · · · · · · · · ·
WBPER950182 <b>Design Change Notice</b> 03445 06378 06378 09309 09309 10604 10443 06795 06973 11304 11831	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP300190 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Description of E Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A8, of SCRWBN Replace power supply in f Condition A2 of SCRWBN	ower supply power supply tworks, correct detector loop IEEB8724, rebuild detectors irred IEEB8724, documentation cr line IEEB8724, gen smpl line up NEEB8724, sample line as-c R-163, 164 IEEB8724, documentation: s	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet iso constructed slope exception		· · · · · · · · · · · · · · · · · · ·
WBPER950182 Design Change Notice 03445 06378 06378 063309 09309 10604 10443 1064 10443 06795 06973 11304 11831 23236	: Related Deficiency: WBP870728 WBP880192 CRDR HED 109 WBP880386 WBNEE88724 R3 WBP900190 WBNEE88724 R3 WBP900190 WBNEE88724 R3 WBNEE88724 R3 WBNEE88724 R3 WBNEE88724 R3	Description of D Add pipe tubing caps Instail new ratemeters & p Instail new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A3, of SCRWBN Replace power supply in f Condition A2 of SCRWBN Wrap detector cbis inside	oower supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors, lired IEEB8724, documentation c IIEB8724, gen smpl line up NEEB8724, sample line as-c R-163, 164 IEEB8724, documentation: s mon. w/EMI tape; reroute si	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet iso constructed slope exception gnal cbis from ratemeter to detector in co		· · · · · · · · · · · · · · · · · · ·
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WBPER950182 Design Change Notice 03445 06378 06378 09309 09309 09309 10604 10443 06795 06973 11304 11831 23236 W37677 31640 23167	: Related Deficiency: WBP870728 WBP880192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBP200190 WBNEEB8724 R3 WBPEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890318 WBP80318	Description of D Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A2 of SCRWBN Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M- Provide materials and inst R4 of design criteria, WB-	bower supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors, line IEEB8724, gen smpl line up NEEB8724, gen smpl line up NEEB8724, sample line as-c R-163, 164 IEEB8724, documentation: s mon. w/EMI tape; reroute si loops and isolator ground pr 12 and test recorders for inter ructions for coax to single cc	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet iso constructed slope exception gnal cbls from ratemeter to detector in co oblem		· · · · · · · · · · · · · · · · · · ·
WBPER950182 Design Change Notice 03445 06378 06378 09309 09309 09309 10604 10443 06795 06973 11304 11831 23236 W37677 31640 23167 27485	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP80586 WBNEEB8724 R3 WBP880586 WBNEEB8724 R3 WBP880318 WBPER940279 WBSCA940032	Description of C Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A2 of SCRWBN Condition A2 of SCRWBN Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M- Provide materials and inst R4 of design criteria, WB- SSDs	bower supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors lifed IEEB8724, documentation co- line IEEB8724, gen smpl line up IEEB8724, gen smpl line up IEEB8724, sample line as-c R-163, 164 IEEB8724, documentation: s mon. w/EMI tape; reroute si loops and isolator ground pr 12 and test recorders for inte tructions for coax to single co DC-40-24 R4, resolved field	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet iso constructed slope exception gnal cbls from ratemeter to detector in co oblem mfrace with Class 1E ratemeters onductor transition deficiencies or incorporated exceptions	ond. for 0-RE-90-125, 126	· · · · · · · · · · · · · · · · · · ·
WBPER950182 Design Change Notice 03445 06378 06378 09309 09309 10604 10443 06795 06973 11304 11831 23236 W37677 31640 23167 27485 W37518 S32449	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP800366 WBNEEB8724 R3 WBP880318 WBPER940279 WBSCA940032 WBPER940423 NA	Description of C Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A2 of SCRWBN Condition A2 of SCRWBN Replace power supply in f Condition A2 of SCRWBN Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M- Provide materials and inst R4 of design criteria, WB- SSDs Add notes to Instrument T Test requirements	oower supply betworks, correct detector loop IEEB8724, rebuild detectors lired IEEB8724, documentation co- line IEEB8724, gen smpl line up IEEB8724, gen smpl line up IEEB8724, sample line as-oc R-163, 164 IEEB8724, documentation: s mon. w/EMI tape; reroute si loops and isolator ground pr 12 and test recorders for inte tructions for coax to single cc DC-40-24 R4, resolved field fabs - special regmts for reco	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet isc constructed slope exception gnal cbls from ratemeter to detector in cc oblem erface with Class 1E ratemeters onductor transition	ond. for 0-RE-90-125, 126	
WBPER950182 Design Change Notice 03445 06378 06378 09309 09309 09309 10604 10443 06795 06973 11304 11831 2236 W37677 31640 23167 27485 W37518 S32449 W38500 09309	: Related Deficiency: WBP870728 WBP880192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP890396 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP890586 WBNEEB8724 R3 WBP880586 WBNEEB8724 R3 WBP880318 WBP880318 WBPER940279 WBSCA940032 WBPER940279 WBPCR940279 WBP2890192	Description of D Add pipe tubing caps Install new ratemeters & p Install new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A8 of SCRWBN Condition A8 of SCRWBN Replace power supply in f Condition A8 of SCRWBN Wrap detector cbls inside Resolve shield tie ground Verify wiring correct in M- Provide materials and inst R4 of design criteria, WB- SSDs Add notes to Instrument T Test requirements Install noise suppression of Return defective preamp	bower supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors lifed IEEB8724, documentation co- line IEEB8724, gen smpl line up IEEB8724, gen smpl line up IEEB8724, sample line as-c R-163, 164 IEEB8724, documentation: s mon. w/EMI tape; reroute si loops and isolator ground pr 12 and test recorders for inte tructions for coax to single co DC-40-24 R4, resolved field	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet isc constructed slope exception gnal cbls from ratemeter to detector in cc oblem inface with Class 1E ratemeters onductor transition deficiencies or incorporated exceptions orders based on seismic test, contract 14	ond. for 0-RE-90-125, 126	
WBPER950182 Design Change Notice 03445 06378 06378 06309 09309 10604 10443 10644 10443 06795 06973 11304 11831 23236 W37677 31640 23167 27485 W37518 S32449 W38500	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBP880318 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP900190 WBNEEB8724 R3 WBP800586 WBNEEB8724 R3 WBP880318 WBPER940279 WBSCA940032 WBPER940423 NA WBPER940279	Description of D Add pipe tubing caps Instail new ratemeters & p Instail new ratemeters & p Add noise suppression ne Condition A8 of SCRWBN Replace scintillator if requ Condition A8 of SCRWBN Reroute 205, 206 sample Condition A8 of SCRWBN Condition A8 of SCRWBN Replace power supply in f Condition A2 of SCRWBN Wrap detector cbis inside Resolve shield tie ground Verify wiring correct in M- Provide materials and inst R4 of design criteria, WB- SSDS Add notes to Instrument T Test requirements Install noise suppression C	bower supply bower supply tworks, correct detector loop IEEB8724, rebuild detectors, ired IEEB8724, gen smpl line up NEEB8724, gen smpl line up NEEB8724, gan smpl line up NEEB8724, documentation: s mon. w/EMI tape; reroute si loops and isolator ground pr 12 and test recorders for inter ructions for coax to single cc DC-40-24 R4, resolved field abs - special reqmts for reco on LED check sources card goards to documented config	o grounds , standardize internal wiring orrections only grades: delete outlet rt vive, add outlet isc constructed slope exception gnal cbls from ratemeter to detector in cc oblem inface with Class 1E ratemeters onductor transition deficiencies or incorporated exceptions orders based on seismic test, contract 14	ond. for 0-RE-90-125, 126	

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	Watts Burgelear Plant Radiation Moreng System (RMS) Deficiencies Impacting RMS								
Radiation Monitor:	Monitor Type:	Monitor Classifi			Cofety Deleted				
0-RE-90-212	Liquid	Tech Spec: No	ODCM: Yes	Reg. Guide 1.97: No	Safety Related: No				
Monitor Description:	Turbine Building Sump Disc	harge Monitor							
TVA Deficiency: WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601 WBP570728 WBP880192 WBP890192 WBP890396 WBNEEB8553 WBSCA940032 WBPER940423	Description of Deficience Condition A2 WBNEEB8724, General s Condition A8 WBNEEB8724, document Condition F WBNEEB8724, Unmonitor Doc errors Missing pipe tubing caps Noise problems Undocumented changes to ratemeters Calibration documentation missing Lack of load data Coax to single conductor transition General sample line deficiencies	ample line routing problems ation inconsistencies	· · ·						

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:	
03445	WBP870728	Install missing pipe tubing caps	
06378	WBP890192	Install new ratemeters and power supply	
05141	WBNEEB8724 R3	Condition A2 of WBNEEB8724, Replace inlet and outlet root valves w/ss; replace carbon steel pipe w/ss	15
05141	WBNEEB8724 R3	Condition F of WBNEEB8724, Add screen and sump pump in station drainage sump and add appropriate pump logic	10
06973	WBNEEB8724 R3	Condition A8 of WBNEEB8724, Sample line as constructed	
09308	WBNEEB8724 , WBP880318	Condition A8 of WBNEEB8724, Correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors	ι,
10604	WBNEEB8724 R3	Condition A8 of WBNEEB8724, Documentation corrections	
23235	N/A	Correct vendor manual to reflect optical grease	
30769	N/A	Change purge valves from 3/8" to 1"	
23167	WBSCA940032	Provide materials and instructions for coax to single conductor transition	
	WBPER940423	Resolve or incorporate exceptions to design criteria, WB-DC-40-24	
35985		SSDs	
36049	WBPER940601	Correct depiction of valves	
W-37566		Ground loop - shield ties	
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	· · ·		Watts Burnelear iation Monopole Sy Deficiencies Impactin	stem (RMS)		
Radiation Monitor:	Monitor Type:	Monitor Classific			· · · · · · · · ·	
0-RE-90-225	Liquid	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
		No	Yes	No	No	
Monitor Description:	Condensate Demineralizer Efflue	nt Monitor				
TVA Deficiency: WBNEE88724 R3 WBPER940601 WBP870728 WBP880318 WBP890396 WBNEE88533 CRDR HED 40 CRDR HED 40 CRDR HED 49/HEC 5252 WBSCA940032 WBPER940423	Description of Deficiency: Condition A2, WBNEEB8724, general sample 1 Condition A8, WBNEEB8724, documentation i Doc errors ALARA concern, sample chamber of Missing pipe tubing caps Noise problems Undocumented changes to ratemeters Calibration documentation missing Lack of load data Nuisance alarms Radiation analyzer indicator light labels Recorder scales Coax to single conductor transition General sample line deficiencies	nconsistencies				
Design Change Notice: 03445 06378 06378 06973 09308 10604 14289 23235 30769 23167 33686 35985 M-15887 S-36049 23235 W-37566	Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724, WBP880318 WBNEEB8724, WBP880318 WBNEEB8724, WBP880318 WBNEEB8724, R3 WBNEEB8724, R3 WBNEEB8724, R3 WBPE8940423 CRDR HED 40 WBPER940601 CRDR HED 89/HEC 5252	Install missing pipe tubing of Install new ratemeters and p Condition A8 of WBNEEB8 Condition A8 of WBNEEB8 Condition A8 of WBNEEB8 Condition A2 of WBNEEB8 Correct vendor manual to re Change purge valves from 3 Provide materials, instructio	power supply power supply 724, sample line as constructed 724, correct loop grounding for si 724, Documentation corrections 724, Replace root valves with 1" s iflect optical grease 3/8" to 1" ons for coax to single conductor tra- nos for coax to single conductor tra- not in use	ngle point ground, assure preamp ss ball; relocate monitor closer to p ansition	board per drawing configuration, rebuild detectors process	
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	N			lear Plant g System (RMS) acting RMS	· .	
Radiation Monitor:	Monitor Type:	Monitor Classifi				
0-RE-90-230	Area	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
		No	No	No	No	
<b>Monitor Description:</b>	Condensate Demineralizer A	Area Monitor				
TVA Deficiency: SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890473P WBP910053 WBNEEB8553 23005-WBN-02	Description of Deficien Condition A8 of SCRWBNEEB8724, d Inductive kickback from RL-1, failure r Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card e Lack of load data	ocumentation inconsistencies eset (not applicable to O-RE-90-135) change fit		· · ·		· ·
CDR HED 89/HEC 5253 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940032 WBPE940072 WBP890492SCA	Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels Recorder scales (not applicable to 1-RE Recorder scales (applicable only to 2-RF Recorder scales (applicable only to 1-RF Undocumented method of transitioning f RT-10, RT-11 calibrator documentation Replace coax cable for cable damage iss	(not applicable to 0-RE-90-135) 90-280, 2-RE-90-1,6,7,8,10) 2-90-1,6,7,8,10) 5-90-280) rom coax to TSP, triax, or single condu SE calibration methods	ictor; inadequate WWK cable t	to connector termination		

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Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:
02440	WBP870870	Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674
30312		PAM Upgrade (0-RE-90-135)
06378	WBP890192	Install new ratemeters & power supply
06378	CRDR HED 109	Install new ratemeters & power supply
06378	WBP890396	Install new detector and components, loop 002
09840	N/A	Delete loops 235 & 236
10604	SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation corrections only
23167	CRDR HED 89 & 93	Correct recorder scales
23169 23409	WBP870870 N/A	Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674
33616	N/A	SSD for 0-RE-90-135
RD1014511	WBPER940072	Replace recorders 1-RR-90-1 and RR-90-12
23167	WBFER940072 WBSCA940032	Purchase new RT-10, RT-11 calibrators
08858	WB90492SCA	Provide materials/instructions for transition from coax to single conductors
08859	WBP890492SCA WBP890492SCA	Replace coax cable for cable damage issue
09153	WBP890492SCA	Replace coax cable for cable damage issue
35114	NA	Replace coax cable for cable damage issue
37566		In WBRD 390,391/94-56 not a listed violation) Relocate 1-RE-90-7,61, and 0-RE-90-11 for optimum area radiation detection Resolve ground loops (shield ties) (loops 2,59,60 only)
16544	F-24447	Delete 0-R-90-63
06378	F-36399	Add keep alive source for 1-RE-90-2

		Ra		lear Plant g System (RMS) acting RMS		
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:			
0-RE-90-231	Area	<b>Tech Spec:</b> No	ODCM: No	<b>Reg. Guide 1.97:</b> No	Safety Related: No	
Monitor Description:	Condensate Demineralizer A	rea Monitor				
TVA Deficiency:	Description of Deficience	:V:			2	
SCRWBNEEB8724 WBP870870 WBP890192 WBP890192 WBP890073P WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA540032 WBPER940072 WBP890492SCA	Condition A8 of SCRWBNEEB8724, do Inductive kickback from RL-1, failure re- Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card ch Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels ( Recorder scales (not applicable to 1-RE-5 Recorder scales (applicable only to 2-RE Recorder scales (applicable only to 1-RE Undocumented method of transitioning fr RT-10, RT-11 calibrator documentation, Replace coax cable for cable damage issue	set (not applicable to O-RE-90-135) ange fit not applicable to 0-RE-90-135) 30-280, 2-RE-90-1,6,7,8,10) -90-280) om coax to TSP, triax, or single conv SE calibration methods	ductor; inadequate WWK cable t	to connector termination		
Design Change Notice	: Related Deficiency:	Description of I	Design Changes/F	ield Modifications:		
02440 30312	WBP870870	Add diode, alarm relay co PAM Upgrade (0-RE-90-		gineering Change Order 12674		
06378	WBP890192 CRDR HED 109	Install new ratemeters &	power supply			
06378 06378	WBP890396	Install new ratemeters & Install new detector and e				
09840 10604	N/A SCRWBNEEB8724	Delete loops 235 & 236 Condition A8 of SCRWB	NEEB8724, documentation c	corrections only		
23167	CRDR HED 89 & 93	Correct recorder scales			0 1 10071	
23169 23409	WBP870870 N/A	Add diode, alarm relay co SSD for 0-RE-90-135	DII, RL-1 for 2-RI-90-78,88,10	0B, General Atomic Engineering Change	Order 126/4	
33616 RD1014511	N/A WBPER940072	Replace recorders 1-RR- Purchase new RT-10, RT				
	WBSCA940032	Provide materials/instruc	tions for transition from coax	to single conductors		
23167	14/2000000					
08858	WBP890492SCA WBP890492SCA	Replace coax cable for ca Replace coax cable for ca				
		Replace coax cable for ca Replace coax cable for ca	able damage issue able damage issue	te 1-RE-90-7,61, and 0-RE-90-11 for opti	mum area radiation datastica	

Watts Burgelear Plant Radiation Moong System (RMS) Deficiencies Impacting RMS

				Deficiencies Tmp	acting RMS	,
	Radiation Monitor:	Monitor Type:	Monitor Classi	fication:		
	1-RE-90-001		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
		Area	No	No	No	No
	Monitor Description:	Spent Fuel Pool Area Monito	r			
	TVA Deficiency:	Description of Deficience	sv:			•
i	SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890473P WBP910053 23005-WBN-02 CDR HED 89/HEC 5253 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940032 WBPER940072 WBP890492SCA	Condition A8 of SCRWBNEEB8724, do Inductive kickback from RL-1, failure re- Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card ch Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels (Recorder scales (not applicable only to 2-RE Recorder scales (applicable only to 2-RE Recorder scales (applicable only to 2-RE Undocumented method of transitioning fr RT-10, RT-11 calibrator documentation, Replace coax cable for cable damage issu	set (not applicable to O-RE-90-135) uange fit (not applicable to 0-RE-90-135) 90-280, 2-RE-90-1,6,7,8,10) -90-1,6,7,8,10) -90-280 om coax to TSP, triax, or single co SE calibration methods		to connector termination	
	Design Change Notice 02440 30312 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 09153 35114 37566 16544 06378	Related Deficiency: WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A N/A WBPER940072 WBPER940072 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WA F-24447 F-36399	Add diode, alarm relay PAM Upgrade (0-RE-90 Install new ratemeters & Install new ratemeters & Install new ratemeters & Install new detector and Delete loops 235 & 236 Condition A8 of SCRVV Correct recorder scales Add diode, alarm relay SSD for 0-RE-90-135 Replace recorders 1-RF Purchase new RT-10, R Provide materials/instru Replace coax cable for Replace coax cable for Replace coax cable for In WBRD 390,391/94-5	coil, RL-1, General Atomic Er +135) k power supply components, loop 002 BNEEB8724, documentation of coil, RL-1 for 2-RI-90-78,88,10 R-90-1 and RR-90-12 (T-11 calibrators citons for transition from coax cable damage issue cable damage issue cable damage issue cable damage issue cable damage issue cable damage issue for tal listed violation) Reloca shield ties) (loops 2,59,60 only	DB, General Atomic Engineering Change to single conductors te 1-RE-90-7.61, and 0-RE-90-11 for opti	

## Watts Barthyclear Plant Radiation Mc and g System (RMS) Deficiencies unpacting RMS

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<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classif	ication:		
1-RE-90-002	•	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Area	No	No	No	No
Monitor Description:	Personnel Lock Monitor				

TVA Deficiency:	Description of Deficiency:
SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation inconsistencies
WBP870870	Inductive kickback from RL-1, failure reset (not applicable to O-RE-90-135)
WBP890192	Undocumented ratemeter changes
WBP890396	Lack of calibration documentation
WBP890473P	Unauthorized keep alive source in RD-1
WBP910053	Vendor change, RD-1 electronics card change fit
WBNEEB8553	Lack of load data
23005-WBN-02	Lack of radiation monitoring in CDWE
CDR HED 109	Radiation analyzer indicator light labels (not applicable to 0-RE-90-135)
CRDR HED 93	Recorder scales (not applicable to 1-RE-90-280, 2-RE-90-1,6,7,8,10)
CRDR HED 89/HEC 5253	Recorder scales (applicable only to 2-RE-90-1.6,7,8,10)
CRDR HED 89/HEC 5238	Recorder scales (applicable only to 1-RE-90-280)
WB\$CA940032	Undocumented method of transitioning from coax to TSP, triax, or single conductor; inadequate WWK cable to connector termination
WBPER940072	RT-10, RT-11 calibrator documentation, SE calibration methods
WBP890492SCA	Replace coax cable for cable damage issue

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:
02440	WBP870870	Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674
30312	·	PAM Upgrade (0-RE-90-135)
06378	WBP890192	Install new ratemeters & power supply
06378	CRDR HED 109	Install new ratemeters & power supply
06378	WBP890396	Install new detector and components, loop 002
09840	N/A	Delete loops 235 & 236
10604	SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation corrections only
23167	-CRDR HED 89 & 93	Correct recorder scales
23169	WBP870870	Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674
23409	N/A	SSD for 0-RE-90-135
33616	N/A	Replace recorders 1-RR-90-1 and RR-90-12
RD1014511	WBPER940072	Purchase new RT-10, RT-11 calibrators
23167	WBSCA940032	Provide materials/instructions for transition from coax to single conductors
08858	WBP890492SCA	Replace coax cable for cable damage issue
08859	WBP890492SCA	Replace coax cable for cable damage issue
09153	WBP890492SCA	Replace coax cable for cable damage issue
35114	N/A	In WBRD 390,391/94-56 not a listed violation) Relocate 1-RE-90-7,61, and 0-RE-90-11 for optimum area radiation detection
37566		Resolve ground loops (shield ties) (loops 2,59,60 only)
16544	F-24447	Delete 0-R-90-63
06378	F-36399	Add keep alive source for 1-RE-90-2

			Deficiencies mp	ng System (RMS) pacting RMS		
Radiation Monitor:	Monitor Type:	Monitor Classif			Catata Datata da	
1-RE-90-006	Area	<b>Tech Spec:</b> No	ODCM: No	Reg. Guide 1.97: No	Safety Related: No	
Monitor Description:	Component Cooling Heat Ex	changer Area Monitor				
TVA Deficiency: SCRWBNEEB8724 WBP870870 WBP890030 WBP8900396 WBP8900473P WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WB5CA340032 WBPE8940072 WBP890492SCA	Description of Deficient Condition A8 of SCRWBNEEB8724, dc Inductive kickback from RL-1, failure re Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card c Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels Recorder scales (not applicable to 1-RE- Recorder scales (applicable only to 2-RE Recorder scales (applicable only to 1-RE- Undocumented method of transitioning fr RT-10, RT-11 calibrator documentation, Replace coax cable for cable damage iss	commentation inconsistencies eset (not applicable to O-RE-90-135) hange fit (not applicable to 0-RE-90-135) 90-280, 2-RE-90-1,6,7,8,10) 5-90-1,6,7,8,10) 5-90-280) rom coax to TSP, triax, or single cond SE calibration methods	lúctor; inadequate WWK cable	to connector termination		
Design Change Notice:	Related Deficiency:	Description of [	Design Changes/F	ield Modifications:		
02440 30312 06378 06378 09840 10604 23167	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93	Add diode, alarm relay co PAM Upgrade (0-RE-90-1 Install new ratemeters & Install new ratemeters & Install new detector and o Delete loops 235 & 236	oil, RL-1, General Atomic Er 135) power supply power supply	ngineering Change Order 12674		ی میر بر

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02440		had alode, alarit telay ook, te-1, oonelar Alorite Engliseening onange onder 12014
30312		PAM Upgrade (0-RE-90-135)
06378	WBP890192	Install new ratemeters & power supply
06378	CRDR HED 109	Install new ratemeters & power supply
06378	WBP890396	Install new detector and components, loop 002
09840	N/A	Delete loops 235 & 236
10604	SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation corrections only
23167	CRDR HED 89 & 93	Correct recorder scales
23169	WBP870870	Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674
23409	N/A	SSD for 0-RE-90-135
33616	N/A	Replace recorders 1-RR-90-1 and RR-90-12
RD1014511	WBPER940072	Purchase new RT-10, RT-11 calibrators
23167	WBSCA940032	Provide materials/instructions for transition from coax to single conductors
08858	W8P890492SCA	Replace coax cable for cable damage issue
08859	WBP890492SCA	Replace coax cable for cable damage issue
09153	WBP890492SCA	Replace coax cable for cable damage issue
35114	N/A	In WBRD 390,391/94-56 not a listed violation) Reiocate 1-RE-90-6, 61, and 0-RE-90-11 for optimum area radiation detection
37566		Resolve ground loops (shield ties) (loops 2,59,60 only)
16544	F-24447	Delete 0-R-90-63
06378	F-36399	Add keep alive source for 1-RE-90-2

Watts B	clear Plant
Radiation Mo	g System (RMS)
Deficiencies m	npacting RMS

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			Deficiencies impa		
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
1-RE-90-007	A	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Area	No	No	No	No
Monitor Description:	Sample Room Area Monitor				
TVA Deficiency:	•				
SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, do	•			
WBP870870 WBP890192	Inductive kickback from RL-1, failure re Undocumented ratemeter changes				<b>v</b>
WBP890396 WBP890473P	Lack of calibration documentation Unauthorized keep alive source in RD-1		· · ·		
WBP910053	Vendor change, RD-1 electronics card cl				
WBNEEB8553 23005-WBN-02	Lack of load data Lack of radiation monitoring in CDWE	- ,			
CDR HED 109	Radiation analyzer indicator light labels		,		
CRDR HED 93 CRDR HED 89/HEC 5253	Recorder scales (not applicable to 1-RE- Recorder scales (applicable only to 2-RE				
CRDR HED 89/HEC 5238 WBSCA940032	Recorder scales (applicable only to 1-RE				
WBPER940072	Undocumented method of transitioning fa RT-10, RT-11 calibrator documentation,	SE calibration methods	nuctor; madequate www.cable i	o connector termination	
WBP890492SCA	Replace coax cable for cable damage iss	ue			
Design Change Notice	: Related Deficiency:	Description of I	Design Changes/F	ield Modifications:	
02440	: Related Deficiency:	Add diode, alarm relay co	bil, RL-1, General Atomic En	ield Modifications: gineering Change Order 12674	
02440 30312 06378	WBP870870 WBP890192	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters &	oil, RL-1, General Atomic En 135) power supply		·
02440 30312 06378 06378	WBP870870	Add diode, alarm relay co PAM Upgrade (0-RE-90-	bil, RL-1, General Atomic En 135) power supply power supply		
02440 30312 06378 06378 09378 09840	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new detector and Delete loops 235 & 236	bil, RL-1, General Atomic En; (35) power supply power supply components, loop 002	gineering Change Order 12674	·
02440 30312 06378 06378 06378 06378 09840 10604 23167	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new detector and o Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales	sil, RL-1, General Atomic En 135) power supply power supply components, loop 002 NEEB8724, documentation c	gineering Change Order 12674 orrections only	
02440 30312 06378 06378 06378 08840 10604 23167 23169	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new detector and o Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales	sil, RL-1, General Atomic En 135) power supply power supply components, loop 002 NEEB8724, documentation c	gineering Change Order 12674	Order 12674
02440 30312 06378 06378 06378 06378 0840 10604 23167 23169 23409 23409 33616	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new detector and Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR-	sil, RL-1, General Atomic En 135) power supply power supply components, loop 002 NEEB8724, documentation c sil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12	gineering Change Order 12674 orrections only	Order 12674
02440 30312 06378 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A N/A WBPER940072 WBSCA940032	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new detector and Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR- Purchase new RT-10, RT Provide materials/instruc	vil, RL-1, General Atomic En- (135) power supply pomponents, loop 002 NEEB8724, documentation c vil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators ions for transition from coas (	gineering Change Order 12674 orrections only B, General Atomic Engineering Change	Order 12674
02440 30312 06378 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new detector and o Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR Purchase new RT-10, RT	sil, RL-1, General Atomic En 135) power supply power supply components, loop 002 NEEB8724, documentation c sil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators ions for transition from coax to able damage issue	gineering Change Order 12674 orrections only B, General Atomic Engineering Change	Order 12674
02440 30312 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 0859 09153	WBP870870 WBP890192 CRDR HED 109 WBP890396 NA SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 NA NA WBPE8940072 WBPCR940072 WBPCR940032 WBP890492SCA WBP890492SCA WBP890492SCA	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new detector and in Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR- Purchase new RT-10, RT Provide materials/instruc Replace coax cable for co Replace coax cable for co Replace coax cable for co	sil, RL-1, General Atomic En- (135) power supply pomponents, loop 002 NEEB8724, documentation c sil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators ions for transition from coax is able damage issue able damage issue able damage issue	gineering Change Order 12674 orrections only B, General Atomic Engineering Change to single conductors	,
02440 30312 06378 06378 06378 06378 06378 09840 10604 23167 23169 23407 23467 08858 09859 09153 23114 237566	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new ratemeters & Install new detector and o Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR. Purchase new RT-10, RT Provide materials/instruc Replace coax cable for co Replace coax cable for co	sil, RL-1, General Atomic En- (135) power supply pomponents, loop 002 NEEB8724, documentation c sil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators ions for transition from coax is able damage issue able damage issue able damage issue	gineering Change Order 12674 orrections only IB, General Atomic Engineering Change to single conductors le 1-RE-90-7,61, and 0-RE-90-11 for opti	,
30312 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 09153 35114	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA N/A	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new ratemeters & Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR- Purchase new RT-10, RT Provide materials/instruc Replace coax cable for co Replace coax cable for co	sil, RL-1, General Atomic En- (135) power supply power supply components, loop 002 NEEB8724, documentation c sil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators ions for transition from coax f able damage issue able d	gineering Change Order 12674 orrections only IB, General Atomic Engineering Change to single conductors le 1-RE-90-7,61, and 0-RE-90-11 for opti	,
02440 30312 06378 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 09153 35114 37566 16544	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA N/A F-24447	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new ratemeters & Install new detector and i Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR- Purchase new RT-10, RT Provide materials/instruc Replace coax cable for c Replace coax cable for c Replace coax cable for c In WBRD 390, 391/94-56 Resolve ground loops (st Delete 0-R-90-63	sil, RL-1, General Atomic En- (135) power supply power supply components, loop 002 NEEB8724, documentation c sil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators ions for transition from coax f able damage issue able d	gineering Change Order 12674 orrections only IB, General Atomic Engineering Change to single conductors le 1-RE-90-7,61, and 0-RE-90-11 for opti	,
02440 30312 06378 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 09153 35114 37566 16544	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA N/A F-24447	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new ratemeters & Install new detector and i Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR- Purchase new RT-10, RT Provide materials/instruc Replace coax cable for c Replace coax cable for c Replace coax cable for c In WBRD 390, 391/94-56 Resolve ground loops (st Delete 0-R-90-63	sil, RL-1, General Atomic En- (135) power supply power supply components, loop 002 NEEB8724, documentation c sil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators ions for transition from coax f able damage issue able d	gineering Change Order 12674 orrections only IB, General Atomic Engineering Change to single conductors le 1-RE-90-7,61, and 0-RE-90-11 for opti	,

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Watts Barenclear Pla	nt
Radiation Mo	m (RMS)
Deficiencies impacting R	MS

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Radiation Monitor:	Monitor Type:	·•	Monitor Classif	ication:			
1-RE-90-008	·.		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Area		No	No	No	No	
Monitor Description:	Aux Feedwater Pur	np Area Mor	nitor				

TVA Deficiency:	Description of Deficiency:
SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation inconsistencies
WBP870870	Inductive kickback from RL-1, failure reset (not applicable to O-RE-90-135)
WBP890192	Undocumented ratemeter changes
WBP890396	Lack of calibration documentation
WBP890473P	Unauthorized keep alive source in RD-1
WBP910053	Vendor change, RD-1 electronics card change fit
WBNEEB8553	Lack of load data
23005-WBN-02	Lack of radiation monitoring in CDWE
CDR HED 109	Radiation analyzer indicator light labels (not applicable to 0-RE-90-135)
CRDR HED 93	Recorder scales (not applicable to 1-RE-90-280, 2-RE-90-1,6,7,8,10)
CRDR HED 89/HEC 5253	Recorder scales (applicable only to 2-RE-90-1,6,7,8,10)
CRDR HED 89/HEC 5238	Recorder scales (applicable only to 1-RE-90-280)
WBSCA940032	Undocumented method of transitioning from coax to TSP, triax, or single conductor; inadequate WWK cable to connector termination
WBPER940072	RT-10, RT-11 calibrator documentation, SE calibration methods
WBP890492SCA	Replace coax cable for cable damage issue

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:
02440	WBP870870	Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674
30312		PAM Upgrade (0-RE-90-135)
06378	WBP890192	Install new ratemeters & power supply
06378	CRDR HED 109	Install new ratemeters & power supply
06378	WBP890396	Install new detector and components, loop 002
09840	N/A	Delete loops 235 & 236
10604	SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation corrections only
23167	CRDR HED 89 & 93	Correct recorder scales
23169	WBP870870	Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674
23409	N/A	. SSD for 0-RE-90-135
33616	N/A	Replace recorders 1-RR-90-1 and RR-90-12
RD1014511	WBPER940072	Purchase new RT-10, RT-11 calibrators
23167	WBSCA940032	Provide materials/instructions for transition from coax to single conductors
08858	WBP890492SCA	Replace coax cable for cable damage issue
08859	WBP890492SCA	Replace coax cable for cable damage issue
09153	WBP890492SCA	Replace coax cable for cable damage issue
35114	N/A	In WBRD 390,391/94-56 not a listed violation) Relocate 1-RE-90-7,61, and 0-RE-90-11 for optimum area radiation detection
37566		Resolve ground loops (shield ties) (loops 2,59,60 only)
16544	F-24447	Delete 0-R-90-63
06378	F-36399	Add keep alive source for 1-RE-90-2

### Watts Expectear Plant Radiation Monthly System (RMS) Deficiencies Impacting RMS

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			Denciencies imp	acting RMS	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
1-RE-90-010	<b>A</b>	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Area	No	No	No	No
Monitor Description:	CVCS Board Area Monitor				
TVA Deficiency:	Description of Deficiency:				
SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890473P WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5253 WBSCA 940032 WBPER940072 WBPE894092SCA	Condition A8 of SCRWBNEEB8724, document Inductive kickback from RL-1, failure reset (not Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card change fi Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels (not app Recorder scales (not applicable to 1-RE-90-280, Recorder scales (applicable only to 2-RE-90-1,6 Recorder scales (applicable only to 1-RE-90-280, Undocumented method of transitioning from coa RT-10, RT-11 calibrator documentation, SE cali Replace coax cable for cable damage issue	applicable to O-RE-90-135) t slicable to O-RE-90-135) 2-RE-90-1,6,7,8,10) 7,7,8,10) )) x to TSP, triax, or single com	luctor; inadequate WWK cable 1	to connector termination	

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Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:
02440	WBP870870	Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674
30312		PAM Upgrade (0-RE-90-135)
06378	WBP890192	Install new ratemeters & power supply
06378	CRDR HED 109	Install new ratemeters & power supply
06378	WBP890396	Install new detector and components, loop 002
09840	N/A	Delete loops 235 & 236
10604	SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation corrections only
23167	CRDR HED 89 & 93	Correct recorder scales
23169	WBP870870	Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674
23409	N/A	SSD for 0-RE-90-135
33616	N/A	Replace recorders 1-RR-90-1 and RR-90-12
RD1014511	WBPER940072	Purchase new RT-10, RT-11 calibrators
23167	WESCA940032	Provide materials/instructions for transition from coax to single conductors
08858	WBP890492SCA	Replace coax cable for cable damage issue
08859	WBP890492SCA	Replace coax cable for cable damage issue
09153	WBP890492SCA	Replace coax cable for cable damage issue
35114	N/A	In WBRD 390,391/94-56 not a listed violation) Relocate 1-RE-90-7,61, and 0-RE-90-11 for optimum area radiation detection
37566		Resolve ground loops (shield ties) (loops 2,59,60 only)
16544	F-24447	Delete 0-R-90-63
06378	F-36399	Add keep alive source for 1-RE-90-2

		Ra		clear Plant ng System (RMS) pacting RMS		•	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:				. •
1-RE-90-014		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:		
	Particulate	No	No	No	No		
Monitor Description:	Sample Room Monitor			, 	-		
TVA Deficiency:	Description of Deficiency:						×
SCRWBNEEB8724 R3 WBO890192 WBP880318 WBP890396 WBP890422 WBNEEB8553 WBPER940670	Condition A8 of WBNEEB8724, Documentation Undocumented changes to ratemeters Noise causes spurious actuations Calibration documentation missing Ratemeter Cable damage on rough cable entry Lack of load data Degraded wiring from 10 CFM moving filter to	. ,					
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		2					
						-	
Design Change Notice:	Polated Deficiency:	Departmention of I	Design Changes				

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:	.*.
03001	N/A	Installs multiplexer so particular CAM unit in alarm can be determined from recorder	,
06378	WBP890192	Install new ratemeters and power supply	
07064	WBP890422	Add grommet to prevent wire damage	
09786	WBP880318	Add noise suppression across three relay coils and buzzer; correct ground for single point ground	ī~
09786	WBNEEB8724 R3	Condition A8, rebuild detectors; correct preamp board to as documented condition; make all wiring consistent and as documented; delete isolation transc	ofrmer (doc only,
33714	WBPER940670	except 1-RE-90-62) add diode across flow alarm relay in 1-RE-90-62 Corrects degraded wiring, 10 CFM moving filter to electronics box (except loops 2-14)	v.

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		Ra		lear Plant g System (RMS) acting RMS	• .		
Radiation Monitor: 1-RE-90-059	Monitor Type:	Monitor Classifi Tech Spec:	ication: ODCM:	Reg. Guide 1.97:	Safety Related:		
	Area	No	No	No	No		
Monitor Description:	Reactor Building Upper Comp	artment Monitor					
TVA Deficiency: SCRWBNEEB8724 WBP870870 WBP890192 WBP890192 WBP890173P WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940032 WBPER940072 WBP890492SCA	Description of Deficiency Condition A8 of SCRWBNEEB8724, docur Inductive kickback from RL-1, failure reset Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card chan Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels (no Recorder scales (not applicable to 1-RE-90- Recorder scales (applicable only to 1-RE-90 Undocumented method of transitioning from RT-10, RT-11 calibrator documentation, SE Replace coax cable for cable damage issue	nentation inconsistencies (not applicable to O-RE-90-135) ge fit t applicable to 0-RE-90-135) 280, 2-RE-90-1,6,7,8,10) +1,6,7,8,10) +280) to coax to TSP, triax, or single cond	luctor; inadequate WWK cable	to connector termination			· · · · · · · · · · · · · · · · · · ·
Design Change Notice: 02440 30312 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 09153 35114 37566 16544 06378	Related Deficiency:           WBP870870           WBP890192           CRDR HED 109           WBP890396           N/A           SCRWBNEEB8724           CRDR HED 89 93           WBP870870           N/A           SCRWBNEEB8724           CRDR HED 89 8 93           WBP870870           N/A           WBPER940072           WBSCA940032           WBP890492SCA           WBP890492SCA           WBP890492SCA           WBP890492SCA           WBP890492SCA           WB7447           F-36399	Add diode, alarm relay cc PAM Upgrade (0-RE-90-1 Install new ratemeters & 1 Install new ratemeters & 1 Install new ratemeters & 1 Install new ratemeters & 1 Install new ratemeters & 2 Delete loops 235 & 236 Condition A8 of SCRWBH Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR-{ Purchase new RT-10, RT Provide materials/instruct Replace coax cable for ca Replace coax cable for ca	bil, RL-1, General Atomic Er (135) power supply power supply components, loop 002 NEEB8724, documentation of bil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators ions for transition from coax able damage issue able dam	DB, General Atomic Engineering Change ( to single conductors te 1-RE-90-7,61, and 0-RE-90-11 for optic		r	1

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Watts I clear Plant Radiation Monutring System (RMS)

			Deficiencies Imp	acting RMS	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
1-RE-90-060		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Area	No	No	No	No
Monitor Description:	Reactor Building Upper Comp				
TVA Deficiency:	<ul> <li>Description of Deficiency</li> </ul>		,		
SCRWBNEEB8724Condition A8 of SCRWBNEEB8724, documentation inconsistenciesWBP870870Inductive kickback from RL-1, failure reset (not applicable to O-RE-90-135)WBP890192Undocumented ratemeter changesWBP890396Lack of calibration documentationWBP890473PUnauthorized keep alive source in RD-1WBP890533Vendor change, RD-1 electronics card change fitWBP890533Lack of load data23005-WBN-02Lack of radiation monitoring in CDWECDR HED 109Radiation analyzer indicator light labels (not applicable to 0-RE-90-135)CRDR HED 89/HEC 5253Recorder scales (applicable on light labels (not applicable to 0-RE-90-135)CRDR HED 89/HEC 5238Recorder scales (applicable only to 1-RE-90-280, 2-RE-90-1,6,7,8,10)CRDR HED 89/HEC 5238Recorder scales (applicable only to 1-RE-90-280)WBSCA940032Undocumented method of transitioning from coax to TSP, triax, or single conductor; inadequate WWK cable to connectorWBP8890492SCAReplace coax cable for cable damage issue				to connector termination	
Design Change Notice: 02440 00312 06378 06378 06378 06378 0840 10604 23167 23169 23409 33616 RD1014511 23167 0858 0859 08153 35114 37566 16544 06378	Related Deficiency:           WBP870870           WBP890192           CRDR HED 109           WBP890396           N/A           SCRWBNEEB8724           CRDR HED 89 893           WBP870870           N/A           N/A           WBP870870           N/A           WBP870870           N/A           SCRWBACK           WBP870870           N/A           N/A           WBP8704072           WBSCA940032           WBP890492SCA           WBP890492SCA           WBP890492SCA           WA           F-24447           F-36399	Add diode, alarm relay c PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new ratemeters & Install new detector and Delete loops 235 & 236 Condition A8 of SCRWB Correct recorder scales Add diode, alarm relay c SSD for 0-RE-90-135 Replace recorders 1-RR Purchase new RT-10, R Provide materials/instruc Replace coax cable for c Replace coax cable for c Replace coax cable for c Replace coax cable for c Replace coax cable for c	oil, RL-1, General Atomic En 135) power supply components, loop 002 NEEB8724, documentation c oil, RL-1 for 2-RI-90-7B,8B,10 -90-1 and RR-90-12 f-11 calibrators tions for transition from coax able damage issue able damage issue able damage issue able damage issue not a listed violation) Reloca nield ties) (loops 2,59,60 only	DB, General Atomic Engineering Change to single conductors te 1-RE-90-7,61, and 0-RE-90-11 for opti	t.

# Watts Clear Plant Radiation Monarying System (RMS) Deficiencies Impacting RMS sification:

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Radiation Monitor:	Monitor Type:	Monitor Classifi	ication:		
1-RE-90-061	•	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
,	Area	No	No	No	No
Monitor Description:	Reactor Building Lower Com	partment Inst RM Mon	litor		
TVA Deficiency:	Description of Deficient	cv:			
SCRWBNEEB8724 WBP870870 WBP890192 WBP890192 WBP890073P WBP910053 WBNCEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 93 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940032	Condition A8 of SCRWBNEEB8724, dd Inductive kickback from RL-1, failure re Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card c Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels Recorder scales (not applicable to 1-RE Recorder scales (applicable only to 2-RI Recorder scales (applicable only to 1-RI Undocumented method of transitioning	eset (not applicable to O-RE-90-135) hange fit (not applicable to 0-RE-90-135) 90-280, 2-RE-90-1,6,7,8,10) 5-90-1,6,7,8,10) 5-90-280)	uctor; inadequate WWK cable to	o connector termination	

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:
02440	WBP870870	Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674
30312		PAM Upgrade (0-RE-90-135)
06378	WBP890192	Install new ratemeters & power supply
06378	CRDR HED 109	Install new ratemeters & power supply
06378	WBP890396	Install new detector and components, loop 002
09840	N/A	Delete loops 235 & 236
10604	SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation corrections only
23167	CRDR HED 89 & 93	Correct recorder scales
23169	WBP870870	Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674
23409	N/A	SSD for 0-RE-90-135
33616	N/A	Replace recorders 1-RR-90-1 and RR-90-12
RD1014511	WBPER940072	Purchase new RT-10, RT-11 calibrators
23167	WBSCA940032	Provide materials/instructions for transition from coax to single conductors
08858	WBP890492SCA	Replace coax cable for cable damage issue
08859	WBP890492SCA	Replace coax cable for cable damage issue
09153	WBP890492SCA	Replace coax cable for cable damage issue
	N/A	In WBRD 390,391/94-56 not a listed violation) Relocate 1-RE-90-6,61, and 0-RE-90-11 for optimum area radiation detection
35114 37566	0/8	Resolve ground loops (shield ties) (loops 259,60 only)
16544	F-24447	Delete 0-R-90-63
06378	F-36399	Add keep alive source for 1-RE-90-2

				lear Plant g System (RMS) acting RMS				:
adiation Monitor:	Monitor Type:	Monitor Classifi		Deg. Cuide 4 07.	Safety Related:		·	
-RE-90-062	Particulate	Tech Spec: No	ODCM: No	Reg. Guide 1.97: No	No			
Monitor Description:	RB Lower Compartment Inst					· .		
TVA Deficiency:	Description of Deficienc	ey:						
SCRWBNEEB8724 R3 SCRWBNEEB8724 R3	Condition A8 of WBNEEB8724, Docume Condition G of WBNEEB8724, Sample to		plicable to 1-RE-90-62 only)		· .	×		
WBP890192 WBP880318 WBP890396 WBP890422 WBNEEB8553	Undocumented changes to ratemeters Noise causes spurious actuations Calibration documentation missing Ratemeter cable damage on rough cable e Lack of load data	entry			с.			
DSR-045 WBPER940423 WBPER940670	Maintenance of 1-RE-90-62 an ALARA of General sample fine deficiencies Degraded wiring from 10CFM moving fil		ument room					
WBPER940423	General sample fine deficiencies	ilter to electronics box Description of D	esign Changes/F	ield Modifications:				
WBPER940423 WBPER940670 Design Change Notice: J3001	General sample line deficiencies Degraded wiring from 10CFM moving fil Related Deficiency: N/A	ilter to electronics box Description of D Installs multiplexer so part	esign Changes/F				τ	
wBPER940423 WBPER940670 Design Change Notice:	General sample line deficiencies Degraded wiring from 10CFM moving fil Related Deficiency:	ilter to electronics box <b>Description of D</b> Installs multiplexer so part Install new ratemeters and Add grommet to prevent w Add noise suppression aci Condition A8, rebuild dete	esign Changes/F icutar CAM unit in alarm car power supply ire damage ross three relay coils and bu	t be determined from recorder zzer, correct ground for single point grou to as documented condition; make all w		nted; delete isolation :	transformer (doc only,	
VBPER940423 VBPER940670 Design Change Notice: 13001 06378 17064 199786 199786	General sample line deficiencies Degraded wiring from 10CFM moving fil Related Deficiency: N/A WBP890192 WBP890422 WBP880318	ilter to electronics box Description of D Installs multiplexer so part Install new ratemeters and Add grommet to prevent w Add noise suppression ac Condition A8, rebuild dete except 1-RE-90-62) add di Condition A8 of WBNEEB	esign Changes/F icular CAM unit in alarm car power supply ire damage ross three relay coils and bu ctors; correct preamp board ode across flow alarm relay 8724, Documentation corre	a be determined from recorder zzer, correct ground for single point grou to as documented condition, make all w in 1-RE-90-62		nted; delete isolation :	transformer (doc only,	
VBPER940423 VBPER940670 Design Change Notice: 13001 X6378 197664	General sample line deficiencies Degraded wiring from 10CFM moving fil Related Deficiency: N/A WBP890192 WBP890192 WBP800318 WBNEEB8724 R3	ilter to electronics box Description of D Installs multiplexer so part Install new ratemeters and Add grommet to prevent w Add noise suppression ac Condition A8, rebuild dete except 1-RE-90-62) add di Condition A8 of WBNEEB Condition A8 of WBNEEB	esign Changes/F icular CAM unit in alarm car power supply ire damage ross three relay coils and bu ctors; correct preamp board ode across flow alarm relay 8724, Documentation corre	a be determined from recorder ezzer, correct ground for single point grou to as documented condition; make all w in 1-RE-90-62 stions pre-isolation transformer configuration		nted; delete isolation i	T former (doc only,	
BPER940423 BPER940670 esign Change Notice: 3001 5378 7064 9786 9786	General sample line deficiencies Degraded wiring from 10CFM moving fil Related Deficiency: N/A WBP890192 WBP890192 WBP800182 WBP880318 WBNEEB8724 R3 WBNEEB8724 R3	iller to electronics box Description of D Installs multiplexer so part Install new ratemeters and Add grommet to prevent w Add noise suppression ac Condition A8, rebuild dete except 1-RE-90-62) add di Condition A8 of WBNEEB Condition A8 of WBNEEB Replace recorder ground s	esign Changes/F icular CAM unit in alarm car power supply ire damage ross three relay coils and bu ctors; correct preamp board ode across flow alarm relay 8724, Documentation correc 8724, Return 1-RE-90-62 to strap for 0-RE-90-16, 0-RE-S	a be determined from recorder ezzer, correct ground for single point grou to as documented condition; make all w in 1-RE-90-62 stions pre-isolation transformer configuration		nted; delete isolation i	transformer (doc only,	

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Induction Monitor       Monitor Type:       Monitor Classification:       Res Guide 1.97:       Safety Related:         1-RE-90-100       Containment Suiding Lower Comparement Monitor         TVA Deficiency:       Containment Suiding Lower Comparement Monitor         WINTERSENT IN       Containment Suiding Monitor Classification:         WINTERSENT IN       Containment Suiding Monitor Classification:         WINTERSENT IN       Contains AT WINTERSENT IN         WINTERSENT IN       Contains AT WINTERSENT IN       Conta			R	Watts F adiation Mo Deficiencies Imp			
Particulate, lodine & Gas (PiG) Yes No No Yes  Monitor Description: Containment Building Lower Compartment Monitor TVA Deficiency: Description of Deficiency: Containment Building Lower Compartment Monitor WEREBURK AN Control of Control of Monitor Street Provide	adiation Monitor:	Monitor Type:	Monitor Classif	fication:			
The Case provide         Description of Deficiency:         Description of Deficiency:           VM Deficiency:         Control to 4 VM Deficiency:         Description of Deficiency:         Description of Deficiency:           VM Deficiency:         Control to 4 VM DEFICIENCY:         Description of Deficiency:         Description of Deficiency:           VM Deficiency:         Control to 4 VM Deficiency:         Description of Deficiency:         Description of Deficiency:           VM Deficiency:         Control to 4 VM Deficiency:         Description of Deficiency:         Description of Deficiency:           VM Deficiency:         Control to 4 VM Deficiency:         Description of Deficiency:         Description of Deficiency:           VM Deficiency:         Control to 4 VM Deficiency:         Description of Deficiency:         Description of Deficiency:           VM Deficiency:         Deficiency:         Deficiency:         Deficiency:	-RE-90-106		•		-	•	
TVA Deficiency:       Description of Deficiency:         WNEEDEDYA, 100       Continue Ad WNEEDEXA, Conce and WNEEDEXA, Conce and WNEEDEXA, Sore an	Monitor Description:	Containment Building Lower Cor	mpartment Monito	r			
WINDERSON         Condition of WINDERSON and Content and WINDERSON and Content is delay and winderson of the WINDERSON and AND AND AND AND AND AND AND AND AN	TVA Deficiency:	Description of Deficiency:					
WBPS0726       Mulair gep ubing eqs III setup       Index in Kidden Kon RL 1, failur setus       I	WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Condition A2 of WBNEEB8724, General samp Condition A4 of WBNEEB8724, Sample line le Condition A8 on WBNEEB8724, Documentatio Condition G of WBNEEB8724, Temperatures a	ength, traps, no heat trace, sep on inconsistencies	aration problems; no purge capa	bility; pump damage on cntmt isolation		
WINNEEB873       Lack of load data         WINNEEB70       Parcialing places concerns         WINNEEB70       Consinneer loads in object of upplied with scenial control ar         WINNEEB70       Consinneer loads in object of upplied with scenial control ar         WINNEEB70       Record: Scale         WINNEEB70       Record: Scale         WINNEEB70       Record: Scale         WINNEEB70       Degaded witing from particular detector to load scale         WINNEEB70       Degaded witing from particular detector to load scale         WINNEEB700       Cort to logic conducer transition         WINNEEB700       Degaded witing from particular detector to load scale         WINNEEB700       Related Deficiency:       Description of Design Changes/Field Modifications:         02440       WIPS7070       Add cload scanes RL-1 alum relay         02450       WIPS7070       Add cload scanes RL-1 alum relay         02676       WIPS7	WBP870728 WBP870870 WBP880318 WBP880351 WBP880192 WBP890396 WBP890396 WBP890586	Missing pipe tubing caps Inductive kickback from RL-1, failure resets Noise causes spurious actuations Containment isolation valve and piping classific Undocumented changes to ratemeters Calibration documentation missing E-MAX power supplies not qualified	~				
WBPER040070       Degraded writing from particuluis detector to electronics loc         WBSCA40070       Case single conductor transition         WBSCA40070       Difficulty in obtaining good samples through jrab sample valves         Dessign Change Notice:       Related Deficiency:       Description of Design Changes/Field Modifications:         Option       Add idoe across RL-1 alarm relay       Image: Sign Change Sign Change Sign Changes/Field Modifications:         05440       WBP870720       Add idoe across RL-1 alarm relay       Image: Sign Change Sign Change Sign Changes/Field Modifications:         05430       WBP870723       Add idoe across RL-1 alarm relay       Image: Sign Change Sign Chang	WBNEEB8553 WBNNEB8709 WBNNEB8643 CRDR HED 109 CRDR HED 89/HEC 5240	Lack of load data Particulate plateout concerns Containment isolation valves not supplied with Radiation analyzer indicator light labels Recorder Scales	essential control air				
02440       WBP670370       Add idoib across RL-1 alam relay         03445       WBP870728       Install pipe tubing caps         03455       WBP870738       Condition A2 of WBNEEB8724 R3       Condition A2 of WBNEEB8724 R3         03006       WBNEEB8724 R3       Condition A2 of WBNEEB8724, general sample line upgrades for 1-RE-90-112: slope exception, bend radius exception, correct code class (documentation)       Add         03073       WBNEEB8724 R3       Condition A2 of WBNEEB8724, general sample line upgrades for 1-RE-90-106: slope exception, bend radius exception, correct code class (documentation)       Add         03078       WBNEEB8724 R3       Condition A2 of WBNEEB8724, Rabuild detector loop grounds       Add noise suppression networks, correct detector loop grounds         0378       WBNEEB8724 R3       Condition A4 of VBNEEB8724, Rabuild detectors, standardize internal wring       Add references to calcs and other dwgs on isometrics         04040       WBNEEB8724 R3       Countentation corrections only       Add references to calcs and other dwgs on isometrics         0516       WBPER940423       Add references to calcs and other twgs       Add noise suppression environs         34655       WBPER940423       Add heat trace to sample line       Sample line         23237       W272-P       Replace isometric per DCN 17836 changes       Sample line         23237       WBPER94012       Condition A4 of	WBPER940670 WBSCA940032	Degraded wiring from particulate detector to ele Coax to single conductor transition	ectronics box				, ·
	02440 03445 06378 06805 06805 06973 09378 093714 093714 093718 094718 094718 094718 094718 094718 094718 094718 094718 09471	WBP870870 WBP870728 WBP890192; CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP890192 WBP890192 WBPER940423 WBNEEB8724 R3 WBPER940423 WBNEEB8724 R3 WBPER940423 W-272-P WBP880318 CRDR HED 89/HEC 5240 WBNEEB8724 R3 WBPER940279 WBPER940279 WBPER940279 WBPER940279 WBPER940279	Add diode across RL-1 a Install pipe tubing caps Install new ratemeters an Condition A2 of WBNEE Condition A2 of WBNEE Condition A8 of WBNEE Condition A8 of WBNEE Add noise suppression r Condition A8 of WBNEE Return defective preamp Add references to calcs Documentation correctio Delete containment isola Revise isometric per DC Condition A4 to WBNEE Add heat trace to sample Replace iodine low flow Wrap internal detector c Correct recorder scales Condition A4 of WBNEE Design criteria, WB-DC- Correct degraded wiring Reconcile isometrics 47 Provide materials, instru SSDs Add notes to Isolation tabs, Resolve ground loops - shei Indicate valves correctly	alarm relay and power supply B8724, general sample line i B8724, general sample line i B8724, Sample line docume tetworks, correct detector loc B8724, Rebuild detectors, st boards to documented confi and other dwgs on isometric ins only ation output from hi rad alarm N 17836 changes B8724, Add heat trace to same time switch ables with EMI tape B8724, R4 of design criteria, 40-24, R4, test recorders for between 10 CFM filter and e W600-465P to walkdowns ctions for coax to single cond special requirements for record id ties, local indicator & ERFD FDS isolators	upgrades for 1-RE-90-112: slope exception upgrades for 1-RE-90-106: slope exception intation correction andardize internal wiring iguration s relay mple line WB-DC-40-24, permits pumps to be isola interface with class 1E ratemeters lectronics box fuctor transition lers based on seismic test, contract 141254	n, bend radius exception, correct code class (document	ation) ຈັນ. ation) ຕາຍ

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# Watts Englished Clear Plant Radiation Monoring System (RMS)

**Deficiencies Impacting RMS** 

			Denciencies impa			
Radiation Monitor:	Monitor Type:	Monitor Classif	ication.			
	Monitor Type:				Sefety Deleted	
1-RE-90-112	Derticulate Jedine & Cos (DIC)	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	1
	Particulate, lodine & Gas (PIG)	Yes	No	No	Yes	
		103	NO		100	
Maultan Dagarintian.	Containment Building Upper Col	mpartment Monitor	r		-	
Monitor Description:		····F =······				
TVA Deficiency:	Description of Deficiency:					
WBNEEB8724 R3	Condition A2 of WBNEEB8724, General sam	ole line routing problems				
WBNEEB8724 R3	Condition A4 of WBNEEB8724, Sample line I	ength, traps, no heat trace, sep	aration problems; no purge capab	bility; pump damage on cntmt isolation		
WBNEEB8724 R3	Condition A8 on WBNEEB8724, Documentati					
WBNEEB8724 R3	Condition G of WBNEEB8724, Temperatures	above detector limits				
WBPER940601	Doc errors					
WBP870606	Solenoid valves for cntmt isol replaced on MR			- '		
WBP870728	Missing pipe tubing caps					
WBP870870	Inductive kickback from RL-1, failure resets					
WBP880318	Noise causes spurious actuations					
WBP880351 WBP890192	Containment isolation valve and piping classifi Undocumented changes to ratemeters	cation				
WBP890396	Calibration documentation missing					
WBP890586	E-MAX power supplies not qualified					
W-272-P	lodine to flow switches don't work in application	on				
WBNEEB8553	Lack of load data		<i>.</i>			
WBNNEB8709 WBNNEB8643	Particulate plateout concerns Containment isolation valves not supplied with	etrential control air				
CRDR HED 109	Radiation analyzer indicator light labels	essential control an			•	
CRDR HED 89/HEC 5240	Recorder Scales					
WBPER940279	Non-qualified recorders tied directly to class 1					
WBPER940423	General sample line deficiencies, heat trace ret					
WBPER940670 WBSCA940032	Degraded wiring from particulate detector to e Coax to single conductor transition	lectronics box				
WBPER950650	Difficulty in obtaining good samples through g	rab sample valves				
	,	•				
Design Change Notice:				ield Modifications:		· · · · · · · · · · · · · · · · · · ·
02440	WBP870870	Add diode across RL-1 a	larm relay			
03445	WBP870728	Install pipe tubing caps				
06378 06805	WBP890192; CRDR HED 109 WBNEEB8724 R3	Install new ratemeters ar Condition A2 of WBNEE		pgrades for 1-RE-90-112; slope exception	n bend radius exception correct	code class (documentation)
06806	WBNEEN8724 R3			pgrades for 1-RE-90-106: slope exception		
06973	WBNEEB8724 R3		B8724, Sample line documen			,
09378	WBP880318		etworks, correct detector loop			
09378	WBNEEB8724 R3 WBP890192		B8724, Rebuild detectors, sta boards to documented config		•	
09378 34113	WBP690192 WBPER940423		nd other dwgs on isometrics	guration		
10604	WBNEEB8724 R3	Documentation correctio				
13516	WBP880318		tion output from hi rad alarm	relay		
34605	WBPER940423	Revise isometrics per DO				
35465	WBNEEB8724 R3 WBPER940423	Add heat trace to sample	B8724, Add heat trace to sam	nple line		
35465 23237	WBPER940425 W-272-P	Replace iodine low flow				
23237	WBP880318	Wrap internal detector ca				
23237	CRDR HED 89/HEC 5240	Correct recorder scales				
WB-DC-40-24	WBNEEB8724 R3 WBPER940279	Design criteria WBNEE	B8/24, R4 of design criteria, V IQ-24, R4, test recorders for in	WB-DC-40-24, permits pumps to be isoli nterface with class 1E ratemeters	ated with no auto cut off	
WB-DC-40-24 33714	WBPER940670	Correct degraded wiring	between 10 CFM filter and ele N600-465P to walkdowns	ectronics box	, <del>-</del>	
34605	WBPER940423	Reconcile isometrics 47	N600-465P to walkdowns tions for coax to single condu			
23167 27485	WBSCA940032 N/A	SSDs	cuons for coax to single condu	Jetor transition		
W-37518	WBPER940279	Add notes to Isolation tabs,		rs based on seismic test, contract 141254		
W-37566			Id ties, local indicator & ERFDS	5		
W-37677		Resolve ground loops - ERI Indicate valves correctly	- N2 120121012			
S-36049 34113	WBPER940423	Add references to calcs and	other dwgs on isometrics			
36049	WBPER940601	Correct valve depiction	-and ango on some no.			
30313	N/A	PAM upgrades				
34195	N/A	Replacequick disconnects				

Û clear Plant Watts B Radiation Monormy System (RMS) **Deficiencies Impacting RMS** 

Radiation Monitor:	Monitor Type:	Monitor Classif	ication:			
1-RE-90-119		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
, ,	Gas	No	Yes	Yes	No	
Monitor Description:	Condenser Vacuum Pump Air	Exhaust Monitor				-
TVA Deficiency:	Description of Deficiency:		1			
SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 WBPER940601 WBP870728PER WBP890396 WBP900107 WBNE893036 WBP900107 WBNEEB8553 CRDR HED 109 CRDR HED 109 CRDR HED 109 CRDR HED/89/HEC 5252 WBPER940423 WBP880318PER WBSCA940032	Condition A2 of SCRWBNEEB8724, gener Condition A2 of SCRWBNEEB8724, moistu Condition G of SCRWBNEEB8724, docum Condition G of SCRWBNEEB8724, tempera Documentation errors Missing pipe tubing caps Undocumented changes to ratemeters Calibration documentation missing Non-radioactive check source (applicable to Lack of load data Radiation analyzer labels Recorder scales (119 only) "T" in line to sampler 129, probes too close Noise Problems Coax to single conductor transitions	al sample line routing problems are in condenser vacuum pump exi nentation discrepancies atures exceeding detector limits loop 119 only)				
Design Change Notice 03445 06378 06378 17610 36049 06973 09309 S-37630 09309 S-37910 17610 17610 23236 W37566 23236 W37566 23236 23167 27485 S36049 2900	: Related Deficiency: WBP870728 WBP890192 CRDR HED 109 WBNEEB8724 R3 WBPE8940601 WBNEEB8724 R3 WBP890396 WBP890396 WBP890192 WBPE8940601 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP860318 N/A CRDR HED 89/HEC 5252 WBPER940423 WBSCA940032 N/A WBNNEB8724 R3	Add pipe tubing caps Install new ratemeters & Install new ratemeters & Condition A2 of SCRWBI Correct valve depiction Condition A3 of SCRWBI Add noise suppression nu Correct drawing discrepa Replace scintillator if requ Return defective preamp Lower flow limits Condition G of SCRWBI Wrap detector cables ins Resolve ground loop prot Correct recorder scales Remove 'T' in sample lin Provide materials/instruct SSDs	power supply power supply NEEB8724, general sample NEEB8724, general sample tworks, correct detector loo ncies, relative locations of fla uired boards to documented confi EEB8724, reroute sample li NEEB8724, reroute sample li de monitor with EMI tape, A olem (shield connections) e, move 129 up one floor to i lions for coax to single condu	p grounds ange and probe guration ne ine dd jumper to LED driver board, loop 119 its own line, abandon 99 in place	only	
09309 10604 W38500 W38631 30312	WBNNEB8724 R3 N/A	Condition A8 of WBNEEE Install noise suppression	38724, Documentation corre across LED Ck source card	ctions only		em on 119 only)

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Watts For Clear Plant Radiation Monoring System (RMS) Deficiencies Impacting RMS Monitor Classification: Tech Spec: ODCM: Reg. Guide 1.97: Safety Related:

Radiation Monitor: 1-RE-90-120	Monitor Type:	Monitor Classific	cation: ODCM:	Reg. Guide 1.97:	Safety Related:	
	Liquid	No	Yes	No	No	
Monitor Description:	Steam Generator Blowdown Liqu	id Monitor				
TVA Deficiency: WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Description of Deficiency: Condition A2 of WBNEEB8724, General sample Condition A3 of WBNEEB8724, Undocumented Condition A8 of WBNEEB8724, Documentation Condition B of WBNEEB8724, Pressure control Condition G of WBNEEB8724, Temperatures ar	manifold challenges sample con inconsistencies valves shown in design not inst	talled in the plant			
WBP880407 WBP890192 WBP820396 WBNEE8 8553 WBNNEB8703 CRDR HED 89/HEC 5252 WBPER940423 WBPER940572 WBSCA 940032 WBP880318 WBP870728	Orifice plate use to reduce pressure; possible ove Undocumented changes to ratemeters Calibration documentation missing Lack of load data Piping Class interfaces: drawing discrepancy Radiation analyzer indicator light labels Recorder Scales General sample line deficiencies Sample heat exchanger not functioning per requir Coax to single conductor transition Noise problems Missing pipe tubing caps		personal injury	· .	• • • • • • •	
					· .	
Design Change Notice: 03445 06378 06378 06804 06804 06804 06973 06973 09308 10604 23235 23235 23255 23235 30769 33455 33253 23167 31324 35985 W-37566 W-38628-A 04193 37401	Related Deficiency:           WBP870728           WBP80192           CRDR HED 109           WBNEEB8724 R3           WBNEEB8724 WBP880318           WBNEEB8724 R3           WBNEEB8724 R3           WBNEEB8724 R3           WBNEEB8724 R3           NA           CRDR HED 89/HEC 5252           N/A           WBPER940572           WBPER940032           WA           N/A           N/A           N/A           N/A           WBPER940323           N/A           N/A	Install missing pipe tubing of Install new ratemeters and Condition A2 of WBNEEB8 Condition A3 of WBNEEB8 Condition A3 of WBNEEB8 Condition A8 of WBNEEB8 Sample line as-constructed Condition A8 of WBNEEB8 Condition A8 of WBNEEB8 Correct vendor manual to r Correct recorder scales Change purge valves from 1 Provide block switch to prer Reverse sample heat excha Provide materials, instruction	caps power supply power supply 3724, install pressure control 3724, install pressure control 724, install pressure control 724, sample line as-constru 3724, correct loop grounding 3724, documentation correcti effect optical grease 3/8" to 1" vent actuations during check anger tube side/shell side co ons for coax to single conduc C-40-24, resolves or incorpor arger orifice for operability soss flow alarm lights wing	icted for single point ground, assure prean ons : source operation nnections tor transition	np board per drawing configuration, rebuild detectors	

clear Plant Watts I Radiation Monoring System (RMS) **Deficiencies Impacting RMS** 

Radiation Monitor:         Monitor Type::         Monitor Classification:         Reg. Guide 1.97:         Safety Related:           Liquid         No         Yes         No         No           Monitor Description:         Steam Generator Blowdown Liquid Monitor				Deficiencies imp	acting RMS				
1-RE-90-121     Tech Spec:     ODCM:     Reg. Guide 1.97:     Safety Related:       Monitor Description:     Steam Generator Blowdown Liquid Monitor     No     No     No       Monitor Description:     Description of Deficiency:     Description of Deficiency:     Description of Deficiency:     Safety Related:       WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Safety Related:       WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Safety Related:       WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Safety Related:       WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Safety Related:       WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG     Continue Ad WIRRENT AG       WIRRENT AG     Continue Add MIRRENT AG     Continue Add MIRRENT AG     Safety Related:       WIRRENT AG     Continue Add MIRRENT AG     Continue Add MIRRENT AG     Safety Related:       WIRRENT AG     Continue Add MIRRENT AG     Continue Add MIRRENT AG     Safety Related:       WIRRENT AG     Continue Add MIRRENT AG     Continue Add MIRRENT AG     Safety Related:       WIRRENT AG     Continue Add MIRRENT AG     Continue Add MIRRENT AG     Safety Related:	Radiation Monitor:	Monitor Type:	Monitor Classi	fication:					
Liquid     No     Yes     No     No       Monitor Description:     Steam Generator Blowdown Liquid Monitor       UNA Deficiency:     Description of Deficiency:       WHEELBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WHEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WHEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WHEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WHEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning line reading publics:       WWEEBERTS IN     Controls of WWEEBERTS IN Concerning					Pog. Gui	do 1 07.	Safety Related:		
Nonitor Description:         Steam Generator Blowdown Liquid Monitor           UNDERCENT:         Description of Deficiency:         Description of Deficiency:           UNDERCENT:         Continue Ad eVINTERENT, General sample line refige profers:           UNDERCENT:         Continue Ad eVINTERENT, Formation and provemable recents:           UNDERCENT:         Continue Ad eVINTERENT, Formation an	1-RE-90-121	Liquid	rech Spec.			ue 1.97.	•		
Monitor Description:         Steam Generator Blowdown Liquid Monitor           VAN Deficiency:         Description of Deficiency:           VMNEEDET/18         Code of MMNEEDET/14           VMNEEDET/14         Code of MMNEEDET/14           VMNEEDET/14         Code of MMNEEDET/14           VMNEEDET/14 <td< th=""><th></th><th></th><th>No</th><th>Yes</th><th>No</th><th></th><th>No</th><th></th><th></th></td<>			No	Yes	No		No		
Include bestor province         Description of Deficiency:         Description of Deficiency:           VMADeficiency:         Condition A1 of WRIEEB3724, General same line ranking problems           VMEREB3724 N1         Condition A1 of WRIEEB3724, General same line ranking problems           VMEREB3724 N1         Condition A1 of WRIEEB3724, Fassure control where structures in environmentation on the provide structure in		Steam Generator Blowdown I	iguid Monitor		*** <b>a</b>				
WHEERER74 B3         Continue A of WINEERER74, Concertaining increases problem           WINEERER74 B3         Continue A of WINEERER74, Concertaining increases and increase									
WHEEBS774 83         Condition AJ of WINEBB774, Undermented mainled scalingers sampled scalingers           WHEEBS774 83         Condition AJ of WINEBB774, Undermented mainled scalingers som instable or parts           WHEEBS774 83         Condition AJ of WINEBB774, Comprehenses and pressure	TVA Deficiency:	Description of Deficienc	y:						
WERKNOLD         Undeximited Charges to restruction           WERKNOLD         Calification consentation missing           WERKNOLD         Calification consentation missing           WERKNOLD         Calification consentation missing           WERKNOLD         Reduction consentation missing           WERKNOLD         Reduction consentation missing           WERKNOLD         Reduction missing           WERKNOLD         Reduction missing           WERKNOLD         General sample line deficiencie           WERKNOLD         Sample basit scharger and functioning per equirements           NUMERSNOLD         Noise porterias           WERKNOLD         Noise porterias           WERKNOLD         Noise porterias           WERKNOLD         Missing pipe tabing caps           Design Change Notice:         Related Deficiency:         Description of Design Changes/Field Modifications:           0345         WERKNOLD         Install missing pipe tabing caps           0345         WERKNOLD         Install missing pipe tabing caps           0346         WERKNOLD         Install missing pipe tabing caps           03476         CROR HED 109         Install missing pipe tabing caps           03684         WERKNOLD         Conditin Ga VWERKEEST24, Install Present contold vates; rework line from f	WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3	Condition A3 of WBNEEB8724, Undocur Condition A8 of WBNEEB8724, Docume Condition B of WBNEEB8724, Pressure of	nented manifold challenges sample ntation inconsistencies control valves shown in design not i	installed in the plant		* .	- , - + 		
WUPER 2005/2       Sample base technique rot functioning per requirements         WBSC 4400203       Coast to single conductor transition         WBF 850318       Noise problems         WBF 850318       Noise problems         WBF 850318       Noise problems         WBF 850728       WBF 850728         Design Change Notice:       Related Deficiency:       Description of Design Changes/Field Modifications:         03445       WBF 950728       Install missing pipe tubing caps         06378       WBF 950728       Install new ratemeters and power supply         06373       CRDR HED 109       Install new ratemeters and power supply         06804       WBF 980072       Condition A2 of WBNEEB8724, Install pressure control valves; rework line from flash tank         06804       WBNEEB8724 R3       Condition A3 of WBNEEB8724, Install pressure control valves; rework line from flash tank         06804       WBNEEB8724 R3       Condition A3 of WBNEEB8724, Install pressure control valves; rework line from flash tank         068073       WBNEEB8724 R3       Condition A3 of WBNEEB8724, Install pressure control valves; rework line from flash tank         068074       WBNEEB8724 R3       Condition A6 of WBNEEB8724, Install pressure control valves; rework line from flash tank         068073       WBNEEB8724 R3       Condition A6 of WBNEEB8724, Install pressure control valves; rework line	WBP890192 WBP890396 WBNEEB 8553 WBNNEB8703 CRDR HED 109 CRDR HED 89/HEC 5252	Undocumented changes to ratemeters Calibration documentation missing Lack of load data Piping Class interfaces: drawing discrepa Radiation analyzer indicator light labels Recorder Scales	·	nd personal injury	•		·	. <u>.</u>	
WBS2.0022       Coax to single conductor transition         WBS280318       WBS280318         WBS280318       Wissing pipe ubling caps         Design Change Notice:       Related Deficiency:       Description of Design Changes/Field Modifications:         03445       WB2807728       Install missing pipe tubing caps         0345       WB2807728       Install missing pipe tubing caps         03465       WB2807728       Install missing pipe tubing caps         03475       WD201HED 109       Install missing pipe tubing caps         03464       WB2802728       Condition A2 Of WBNEEB8724, Install pressure control valves; rework line from fash tank         06804       WBNEEB8724 R3       Condition A3 Of WBNEEB8724, Install pressure control valves; rework line from fash tank         06804       WBNEEB8724 R3       Condition A3 of WBNEEB8724, install pressure control valves; rework line from fash tank         06804       WBPEB80724 R3       Condition A3 of WBNEEB8724, install pressure control valves; rework line from fash tank         06804       WBPEB8073       Install messare control valves; rework line from fash tank         06804       WBPEB80748       Condition A3 of WBNEEB8724, AS1         06804       WBPEB80748       Condition A3 of WBNEEB8724, AS1         06804       WBPEB80748       Condition A3 of WBNEEB8724, AS1									and the second sec
WBP80018     Noise problems Missing pipe tubing caps       Design Change Notice:     Related Deficiency:     Description of Design Changes/Field Modifications:       03445     WBP80728     Install missing pipe tubing caps       03445     WBP80728     Install missing pipe tubing caps       03445     WBP80728     Install missing pipe tubing caps       06378     CRDR HED 109     Install new ratemeters and power supply       06364     WBPE80724 R3     Condition A2 of WBNEE80724, Install pressue control valves; rework line from flash tank       06804     WBNEE80724 R3     Condition A3 of WBNEE80724, Install pressue control valves; rework line from flash tank       06804     WBNEE80724 R3     Condition A3 of WBNEE80724, Sample line sa-constructed       06804     WBNEE80724 R3     Condition A6 of WBNEE80724, Sample line sa-constructed       06804     WBNEE80724 R3     Condition A6 of WBNEE80724, Sample line sa-constructed       06804     WBNEE80724 R3     Condition A6 of WBNEE80724, Sample line sa-constructed       06804     WBNEE80724 R3     Condition A6 of WBNEE80724, Sample line sa-constructed       06803     WBNEE80724 R3     Condition A6 of WBNEE80724, Sample line sa-constructed       06804     WBNEE80724 R3     Condition A6 of WBNEE80724, Name and and a So WBNEE80724, Correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors       06804     WBNE8073 R3<			requirements						
WBP370728     Missing pipe tubing caps       Design Change Notice:     Related Deficiency:     Description of Design Changes/Field Modifications:       03445     WBP370728     Install missing pipe tubing caps       03445     WBP300120     Install missing pipe tubing caps       0343     CORD HED 109     Install mer ratemeters and power supply       06804     WBNEE88724 R3     Condition A2 of WBNEE88724, install pressure control valves; rework line from flash tank       06804     WBNEE88724 R3     Condition A2 of WBNEE88724, install pressure control valves; rework line from flash tank       06804     WBNEE88724 R3     Condition G of WBNEE88724, install pressure control valves; rework line from flash tank       06804     WBNEE88724 R3     Condition G of WBNEE88724, install pressure control valves; rework line from flash tank       06804     WBNEE88724 R3     Condition A3 of WBNEE88724, Sample line as-constructed       06804     WBNEE88724 R3     Condition A6 of WBNEE88724, Correct loog grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors       06804     WBNEE88724, WBP80318     Condition A6 of WBNEE88724, Correct loog grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors       06804     WBNEE88724, WBP80318     Condition A6 of WBNEE88724, correct loog grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors       07078     WBNEE8724, WBP80318 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td></t<>						-			
Design Change Notice:         Related Deficiency:         Description of Design Changes/Field Modifications:           03445         WBP807028         Install missing pipe tubing caps           06378         WDP809192         Install missing pipe tubing caps           06378         CRD HED 109         Install new ratemeters and power supply           06804         WDNEEB8724 R3         Condition A2 of WDNEEB8724, Install pressure control valves; rework line from flash tank           06804         WDNEEB8724 R3         Condition A2 of WDNEEB8724, Install pressure control valves; rework line from flash tank           06804         WDNEEB8724 R3         Condition G of WDNEEB8724, Install pressure control valves; rework line from flash tank           06804         WDNEEB8724 R3         Condition G of WDNEEB8724, Install pressure control valves; rework line from flash tank           06804         WDNEEB8724 R3         Condition G of WDNEEB8724, Correct long grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors           06973         WDNEEB8724 R3         Condition A8 of MDNEEB8724, documentation corrections           06974         WDNEEB8724 R3         Condition A8 of MDNEEB8724, documentation corrections           07930         WDNEEB8724 R3         Condition A8 of MDNEEB8724, documentation corrections           07930         WDNEEB8724 R3         Condition A9 of MDNEEB8724, documentation corrections     <									
0375     WBP80192     Install new ratemeters and power supply       0376     CRDR HED 109     Install new ratemeters and power supply       0376     CRDR HED 109     Install new ratemeters and power supply       06804     WBNEEB8724 R3     Condition A2 of WBNEEB8724, Install pressure control valves; rework line from flash tank       06804     WBNEEB8724 R3     Condition A3 of WBNEEB8724, Install pressure control valves; rework line from flash tank       06804     WBP880407     Install new ratemeters and power supply       06804     WBP880407     Install pressure control valves; rework line from flash tank       06804     WBP880407     Install pressure control valves; rework line from flash tank       06804     WBP880407     Install new ratemeters       06804     WBP880407     Install pressure control valves; rework line from flash tank       06973     WBNEEB8724, R3     Condition A6 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors       06973     WBNEEB8724 R3     Condition A6 of WBNEEB8724, documentation corrections       10604     WBNEEB8724 R3     Condition A6 of WBNEEB8724, documentation corrections       23235     RVA     Correct renorder scales       3766     N/A     Correct renorder scales       31324     N/A     Reverse sample heat exchanger tube side/shell side connections       3		-	•	• •	ield Modificatio	ns:			alan 12 Md
03376       CRDR HED 109       Install new ratemeters and power supply         06804       WBNEEB8724 R3       Condition A2 of WBNEEB8724, install pressure control valves; rework line from flash tank         06804       WBNEEB8724 R3       Condition A3 of WBNEEB8724, install pressure control valves; rework line from flash tank         06804       WBNEEB8724 R3       Condition A3 of WBNEEB8724, install pressure control valves; rework line from flash tank         06804       WBNEEB8724 R3       Condition A3 of WBNEEB8724, install pressure control valves; rework line from flash tank         06804       WBNEEB8724 R3       Condition A0 of WBNEEB8724, sample line as-constructed         06973       WBNEEB8724, WBP880318       Condition A8 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors         0604       WBNEEB8724 R3       Condition A8 of WBNEEB8724, documentation corrections         03030       WBNEEB8724 R3       Condition A8 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors         10604       WBNEEB8724 R3       Condition A8 of WBNEEB8724, documentation corrections         23235       NA       Correct recorder scales         30769       NA       Correct recorder scales         33455       NA       Reverse sample heat exchanger lube side/shell side connections <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
OBSOL         WBNEEB8724 R3         Condition A2 of WBNEEB8724, Install pressure control valves; rework line from flash tank           06804         WBNEEB8724 R3         Condition G of WBNEEB8724, install pressure control valves; rework line from flash tank           06804         WBNEEB8724 R3         Condition G of WBNEEB8724, install pressure control valves; rework line from flash tank           06804         WBNEEB8724 R3         Condition A3 of WBNEEB8724, stanple line as-constructed           06973         WBNEEB8724 R3         Condition A8 of WBNEEB8724, Sample line as-constructed           09308         WBNEEB8724 wBP8680318         Condition A8 of WBNEEB8724, documentation corrections           02325         N/A         Condition A8 of WBNEEB8724, documentation corrections           02325         N/A         Condition A8 of WBNEEB8724, documentation corrections           02325         N/A         Correct vector recorder scales           03706         N/A         Charge purge valves from 3/8" to 1"           03455         N/A         Charge purge valves from 3/8" to 1"           03455         N/A         Provide block switch to prevent actuations during check source operation           03253         WBPER940572         Reverse sample heat exchanger tube side/shell side connections           03254         WBPER94052         Rovide materials, instructions for coax to single conductor transition									
06804     WBNEE88724 R3     Condition A3 of WBNEE88724, install pressure control valves; rework line from flash tank       06804     WBNEE88724 R3     Condition A3 of WBNEE88724, install pressure control valves; rework line from flash tank       06804     WBNEE88724 R3     Condition A3 of WBNEE88724, install pressure control valves; rework line from flash tank       06804     WBNEE88724 R3     Condition A3 of WBNEE88724, sample line as-constructed       06973     WBNEE88724 R3     Condition A8 of WBNEE88724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors       06973     WBNEE88724 R3     Condition A8 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors       06973     WBNEE88724 R3     Condition A8 of WBNEEB8724, documentation corrections       06973     WBNEE88724 R3     Condition A8 of WBNEEB8724, documentation corrections       06973     WBNEE88724 R3     Condition A8 of WBNEEB8724, documentation corrections       07640     WJA     Correct vendor manual to reflect optical grease       07769     N/A     Correct vendor scales       0783     WBPER940572     Reverse sample heat exchanger tube side/shell side connections       0784     WBPER940423     Provide materials, instructions for coax to single conductor transition       0785     WBPER940423     R4 of design criteria, WB-DC-40-24, resolves or incorporates exceptions					ol valves; rework line from	n fiash tank			<i>ъ</i> .
06804WBP880407Install pressure control valves; rework line from flash tank06873WBNEE86724 R3Condition A8 of WBNEEB8724, Sample line as-constructed06973WBNEE86724, WBP880318Sample line as-constructed09308WBNEEB8724, WBP880318Condition A8 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors10604WBNEEB8724 R3Condition A8 of WBNEEB8724, documentation corrections23235N/ACorrect vendor manual to reflect optical grease23235CRDR HED 89/HEC 5252Correct recorder scales30769N/AChange purge valves from 3/8" to 1"33455N/AProvide block switch to prevent actuations during check source operation31524WBPER940572Reverse sample heat exchanger tube side/shell side connections3124N/AReplace orifice plate with larger orifice for operability SSDs35985N/AGround loops - shielded ties Add noise suppression across flow alarm lights Add noise suppression across flow alarm lights									·+
Construction       WBNEEB8724 R3       Condition A8 of WBNEEB8724, Sample line as-constructed         06973       WBNNEEB8703 R3       Sample line as-constructed         09308       WBNEEB8724, WBP880318       Condition A8 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors         10604       WBNEEB8724 R3       Condition A8 of WBNEEB8724, documentation corrections         23235       N/A       Correct recorder scales         30769       N/A       Change purge valves from 3/8" to 1"         33253       WBPER940572       Reverse sample heat exchanger tube side/shell side connections         23167       WBSCA940032       Provide materials, instructions for coax to single conductor transition         31324       N/A       Replace onfice plate with larger orifice for operability         35965       N/A       Ground loops - shielded ties         W-33625A       N/A       Ground loops - shielded ties         W-33625A       PIRWBNNEB8703       Ground loops - shielded ties         W-33625A       PIRWBNNEB8703       Condition as of Walarm lights						flash tank			-
06973WBNNEB8703 R3Sample line as-constructed09308WBNEEB8724, WBP880318Condition A8 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors10604WBNEEB8724 R3Condition A8 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors23235N/ACorrect vendor manual to reflect optical grease23235CRDR HED 89/HEC 5252Correct recorder scales30769N/AProvide block switch to prevent actuations during check source operation33253WBPER940572Reverse sample heat exchanger tube side/shell side connections33167WBSCA940032Provide materials, instructions for coax to single conductor transition31324N/AReplace orifice plate with larger orifice for operability SSDs35985N/AGround loops - shielded ties Add noise suppression across flow alarm lights Add noise suppression across flow alarm lights Add noise suppression across flow alarm lights04193PIRWBNNEB8703PIRWBNNEB8703									
09308WBNEEB8724, WBP680318Condition A8 of WBNEEB8724, correct loop grounding for single point ground, assure preamp board per drawing configuration, rebuild detectors10604WBNEEB8724 R3Condition A8 of WBNEEB8724, documentation corrections23235N/ACorrect vendor manual to reflect optical grease23235CRDR HED 89/HEC 5252Correct recorder scales30769N/AChange purge valves from 3/8" to 1"33455N/AProvide block switch to prevent actuations during check source operation33253WBPER940572Reverse sample heat exchanger tube side/shell side connections31367WBSCA940032Provide materials, instructions for coax to single conductor transition35985N/AReplace orifice plate with larger orifice for operability SSDs35985N/AGround loops - shielded tiesW-36628-AN/AGround loops - shielded ties Add noise suppression across flow alarm lights Add noise suppression across flow alarm lights04193PIRWBNNEB8703PIRWBNNEB8703			Sample line as-construc	ted					
23235     N/A     Correct vendor manual to reflect optical grease       23235     CRDR HED 89/HEC 5252     Correct recorder scales       30769     N/A     Change purge valves from 3/8" to 1"       33455     N/A     Provide block switch to prevent actuations during check source operation       33253     WBPER940572     Reverse sample heat exchanger tube side/shell side connections       23167     WBSCA940032     Provide materials, instructions for coax to single conductor transition       31324     NA     Replace orifice plate with larger orifice for operability       35985     SSDs       W-37566     N/A     Ground loops - shielded ties       W-3628-A     Add noise suppression across flow alarm lights       Q4193     PIRWBNNEB8703     Correct piping class discrepancy	09308					assure preamp	board per drawing configura	tion, rebuild detectors	
23235     CRDR HED 89/HEC 5252     Correct recorder scales       30769     N/A     Change purge valves from 3/8" to 1"       33455     N/A     Provide block switch to prevent actuations during check source operation       33253     WBPER940572     Reverse sample heat exchanger tube side/shell side connections       23167     WBSCA940032     Provide materials, instructions for coax to single conductor transition       31324     N/A     Replace orifice plate with larger orifice for operability       35985     N/A     Ground loops - shielded ties       W-37566     N/A     Ground loops - shielded ties       W-3628-A     Add noise suppression across flow alarm lights       Q4193     PIRWBNNEB8703     Correct piping class discreptancy					tions			· · · · · ·	r
Survey     N/A     Change purge valves from 3/8" to 1"       33769     N/A     Provide block switch to prevent actuations during check source operation       33253     WBPER940572     Reverse sample heat exchanger tube side/shell side connections       23167     WBSCA940032     Provide materials, instructions for coax to single conductor transition       31324     N/A     Replace orifice plate with larger orifice for operability       35985     SDs       W-37566     N/A     Ground loops - shielded ties       W-38628-A     Add noise suppression across flow alarm lights       Q4193     PIRWBNNEB8703     Correct piping class discrepancy				b reflect optical grease					
N/A     Provide block switch to prevent actuations during check source operation       33253     WBPCR940572     Reverse sample heat exchanger tube side/shell side connections       23167     WBSCA940032     Provide materials, instructions for coax to single conductor transition       31324     NA     Replace orifice plate with larger orifice for operability       35985     SSDs       W-37566     N/A     Ground loops - shielded ties       W-3628-A     Add noise suppression across flow alarm lights       Q4193     PIRWBNNEB8703     Correct piping class discrepancy				m 3/8" to 1"					* -
23167     WBSCA940032 WBPER940423     Provide materials, instructions for coax to single conductor transition       31324     N/A     Replace orifice plate with larger orifice for operability       35985     SSDs       W-37566     N/A     Ground loops - shielded ties       W-38628-A     PIRWBNNEB8703     Correct piping class discrepancy			Provide block switch to p	prevent actuations during chee					
WBPER940423     R4 of design criteria, WB-DC-40-24, resolves or incorporates exceptions       31324     N/A     Replace orifice plate with larger orifice for operability       35985     SDs       W-37566     N/A     Ground loops - shielded ties       W-38628-A     Add noise suppression across flow alarm lights       Q4193     PIRWBNNEB8703     Correct piping class discrepancy	33253					•		· · · · · · · · ·	
31324     N/A     Replace orifice plate with larger orifice for operability       35985     SSDs       W-37566     N/A     Ground loops - shielded ties       W-38628-A     Add noise suppression across flow alarm lights       04193     PIRWBNNEB8703     Correct piping class discrepancy	23167		Provide materials, instru R4 of design criteria WF	ctions for coax to single condi B-DC-40-24 resolves or incom	octor transition			•	
W-37566 N/A Ground loops - shielded tes W-38628-A Add noise suppression across flow alarm lights 04193 PIRWBNNEB8703 Correct piping class discrepancy	31324		Replace orifice plate with	h larger orifice for operability					
W-38628-A Add noise suppression across flow alarm lights 04193 PIRWBNNEB8703 Correct piping class discrepancy	35985	2//2	SSDs						·.
04193 PIRWBNNEB8703 Correct piping class discrepancy		N/A	Add noise suppression a	icross flow alarm lights					
37401 N/A Correct block function to allow alarm	04193		Correct piping class disc	repancy	· ·				
	37401	, N/A	Correct block function to	allow alarm					

### Watts Englished Clear Plant Radiation Monoring System (RMS) Deficiencies Impacting RMS

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	,		Deficiencies Impa	acting RMS		
adiation Monitor:	Monitor Type:	Monitor Classi	fication:			
I-RE-90-123	Liquid	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Liquid	No	No	No	No	
Monitor Description:	Component Cooling System Mo	onitor		· · · · · · ·		
VA Deficiency:	Description of Deficiency:					
/BNEEB8724 R3	Condition A2 of WBNEEB8724, General sam					
/BNEEB8724 R3 /BPER940601	Condition A8 of WBNEEB8724, documentation Doc errors					1
BP880272 BP880273	Non-seismically qualified flow switch (0, 1-12 Non-seismically qualified flow switch (2-123)	23)				
/BP890192 /BP890396	Undocumented changes to ratemeters Calibration documentation missing					
/BNEEB8553 RDR HED 40	Lack of load data Nuisance alarm					
RDR HED 109 RDR HED 89/HEC 5252	Radiation analyzer indicator light labels Recorder Scales		. ·			
VBPER940423	General sample line deficiencies					
/BSCA940032 /BP880318	Coax to single conductor transition' Noise problems					
					* :	
					1	
	· ·					
esign Change Notice:	Related Deficiency:	Description of	Design Changes/Fi	eld Modifications:	· · ·	
378 378	WBP890192 CRDR HED 109	Install new ratemeters a Install new ratemeters a				,
8801	WBNEEB8724 R3			t isolation valves w/ss globe; add recirc	purge/test valves; take exception for carbon stee! root valves	520 ×
6973	WBNEEB8724 R3 WBNEEB8724 , WBP880318		B8724, Sample line as constr B8724, Carrect leap groundin		p board per drawing configuration, rebuild detectors	الحج". بر کار
9308 9604	WBNEEB8724 R3	Condition A8 of WBNEE	B8724, Documentation correc	tions resolves non-seismic flow switch		
5423 5423 ·	WBP880272 WBP880273	Documentation correction	ow switch (documentation) ons resolves non-seismic flow	switch (documentation)		
3235 3235	N/A CRDR HED 89/HEC 5252	Correct vendor manual t Correct recorder scales				
3167 3686	WBSCA940032 CRDR HED 40	Provide materials, instru Block alarm when monit	ictions for coax to single condu tor not in use	ictor transition		
-37566	WBPER940423	Resolve or incorporate e Ground loops - shield tie	exceptions in R4 of design crite es (1-123 only)	ria, WB-DC-40-24		
-36049	WBPER940601	Show valves correctly, E				
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Watts in Figure clear Plant Radiation Monoring System (RMS) Deficiencies Impacting RMS

			Deficiencies Impac	cting RMS		
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:			
1-RE-90-129		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Sampler	No	Yes	No	No	
Monitor Description:	Condenser Vacuum Pump Ai	r Exhaust Monitor		, · · ·	· · · · · ·	
TVA Deficiency:	Description of Deficienc	v:				
SCRWBNEEB8724 SCRWBNEEB8724 SCRWBNEEB8724 WBP880402	Condition A8 of SCRWBNEEB8724, do Condition A2 of SCRWBNEEB8724, get Condition A7 of SCRWBNEEB8724, moi Incorrect documentation of isolation valve	cumentation inconsistencies neral sample line routing problems isture in condenser vacuum pump		·		
WBPER940423 PIRWBNEEB8553 WBPER940601 WBNNEB8709	Tee in line to 129, sample probe location Lack of load data Documentation errors Particulate plateout concerns	too close to disturbance, isometrics d	& transmission calculation not revi	sed for DCN-17610		
		· , · · ·		·		
				· · ·		
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	· ·					
Design Change Notice	: Related Deficiency:		Design Changes/Fie	Id Modifications:		<i>0.7</i> . *
22320 03436	WBP880402	Move 0-RE-90-128 outsid Correct isolation valve po	sition documentation	x		
06803 17610	WBNEEB8724 R3 WBNEEB8724 R3	Cond A2 of WBNEEB872 Cond A2 of WBNEEB872	24, gen smpl line upgrades/0-R 24 gen smpl ine upgrades/1-RF	E-90-128: inlet/outlet reversal justificat -90-129:eval,repl nozzle;repl T w/ Y co	tion; slope exception	م برن <sup>ي</sup> موجو
06973	WBNEEB8724 R3	Condition A8 of SCRWBI	NEEB8724, correct sample line	documentation	······) F-·3F·····)	
10604 17610	WBNEEB8724 R3 WBNEEB8724 R3		NEEB8724, documentation cor NEEB8724, reroute sample line			ň
36049	WBPER940601	Depict valves correctly				· · · · ·
33688 S37630 W36528	WBPER940423 DD 95-0371 F36896,F37909		9, move 129 up one floor & ins - tubing fittings, downstream o	tall new probe at proper dist fm flow di f filter	Surbance, add heat trace	

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### clear Plant Watts adiation Monophing System (RMS) Deficiencies Impacting RMS Radiation Mo

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Radiation Monitor:	Monitor Type:	Monitor Classif			Sofoty Deleted			
1-RE-90-130	Gas	Tech Spec:	ODCM:	Reg. Guide 1.97: No	Safety Related: Yes			
Monitor Description: TVA Deficiency: WBNEEB8724 R3 WBNEEB8724 R3 WBP870728 WBP880318 WBP880192 WBP890396	Description of Deficiency: Condition A8 of WBNEEB8724, general do Condition A2 of WBNEEB8724, general sa Condition G of WBNEEB8724, detector tem Missing pipe tubing caps Noise causes false actuations Undocumented changes to ratemeters Calibration documentation missing	cumentation inconsistencies mple line routing problems pperature limit exceeded	Yes	N0	Yes			
WBP890401 WBP890422SCA WBP890586 PIRWBNEB8705 PIRWBNNEB8709 WBSCA940032 WBPER940423 WBPER940601	No continuous indication of cpm in control re Local RP-30 wires scrapped bare E-MAX power supplies not qualified Lack of load data Specific documentation discrepancies Particulate plateout concerns Coax to single conductor transition General sample line deficiencies with regard Documentation errors			· · · · · · · · · · · · · · · · · · ·				
Design Change Notice	: Related Deficiency:	Description of I	Design Changes/F	ield Modifications:		(		, ŝę
03445 06378 06802 06973 07064 09309 09309 09309 10604 11304 23236	WBP870728 WBP890192 WBNEEB8724 R3 WBNEEB8724 R3 WBP890422 WBP890422 WBP890422 WBP890192 WBNEEB8724 R3 WBP890586 WBP890586 WBP890586	Add pipe tubing caps Install new ratemeters an Condition A2, Gen smpl I Condition A8, Sample lin Add grommet to prevent v Add noise suppression n Condition A8, Rebuild de Return defective preamp Condition A8, Document Replace power supply in Wrap detector cables ins	ad power supply In upgrades: replace root & is e as-constructed wire damage etworks, correct detector loop tectors, correct piping interfer boards to documented config ation corrections only R-163, 164. ide monitor with EMI tape	ol vives; 4 exceptions:slope,bend radius, o grounds rence, standardize internal wiring	separations, vive stamp		1254) 	
22236 09309 36049 27485 36720 \$32449 W37677 34421	WBNNEB8705 WBP80396 WBPER40601 WBPER940423 N/A N/A	Documentation only: spe Replace scintillators if ree Depict valves correctly R4 of Design Criteria, WE SSDs Move sample points out o Test requirements	ecific drawing discrepancies quired B-DC-40-24, resolves or incor of dead air space hield ties & isolator grounds	porates sample line exceptions				, ( , , ) , ( , , )
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Watts I clear Plant Radiation Mon. oring System (RMS) Deficiencies Impacting RMS

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			Deficiencies Imp	acting RMS			
<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classifi	ication:				
1-RE-90-131	6	Tech Spec:	ODCM:	Reg. Guide	e 1.97:	Safety Related:	-
X	Gas	Yes	Yes	No		Yes	
Monitor Description:	Containment Purge Air Exhau	ust Monitor	-		· .		
TVA Deficiency:	Description of Deficienc	y:	×				
WBNEEB8724 R3 WBNEEB8724 R3 WBNEB8724 R3 WBP870728 WBP880318 WBP890396 WBP890401 WBP890401 WBP890401 WBP890586 WBNEB8705 WBNNEB8705 WBNNEB8705 WBNNEB8709 WBSCA 940032 WBPER940423 WBPER940601	Condition A8 of WBNEEB8724, general Condition A2 of WBNEEB8724, general Condition G of WBNEEB8724, detector t Missing pipe tubing caps Noise causes false actuations Undocumented changes to ratemeters Calibration documentation missing; Eberl No continuous indication of cpm in contro Local RP-30 wires scrapped bare E-MAX power supplies not qualified Lack of load data Specific documentation discrepancies Particulate plateout concerns Coax to single conductor transition General sample line deficiencies with rega	sample line routing problems emperature limit exceeded ine GM Tubes I room	· · · · ·		·	· · ·	
Design Change Notice: 03445 06378 06802 06973 07064 09309 09309 09309 10604 11304 23236 23236 09309	Related Deficiency: WBP870728 WBP890192 WBNEEB8724 R3 WBNEEB8724 R3 WBP890422 WBP890318 WBNEEB8724 R3 WBP890192 WBNEEB8724 R3 WBP890586 WBP890396	Add pipe tubing caps Install new ratemeters an Condition A2, Gen smpl In Condition A8, Sample line Add grommet to prevent v Add noise suppression ne Condition A8, Rebuild det Return defective preamp I Condition A8, Documenta Replace power supply in I Wrap detector cables insi	n upgrades: replace root & is a s-constructed wire damage etworks, correct detector loop ectors, correct piping interfer boards to documented config tion corrections only R-163, 164 de monitor with EMI tape cific drawing discrepancies	ol vives; 4 exceptions:slope, o grounds rence, standardize internal v	bend radius,	, separations, vive stamp	ید ۳

WBPER940601 WBPER940423 Depict valves correctly R4 of Design Criteria, WB-DC-40-24, resolves or incorporates sample line exceptions N/A SSDs Move sample points out of dead air space Test requirements Resolve ground loops - shield ties & isolator grounds Preoperational test criteria N/A N/A

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36049

27485 36720 S32449 W37677 34421

### clear Plant ing System (RMS) Watts B Radiation Mon

			Deficiencies Im	pacting RMS			-	
Radiation Monitor: 1-RE-90-271	Monitor Type: Area	Monitor Class Tech Spec: Yes	ification: ODCM: No	Reg. Guide Yes	1.97: Safety Rela Yes	ted:		
Monitor Description:	RB Upper Compartment PAM	Monitor	,		**			
TVA Deficiency: WBNEEB8724 WBP890586 WBP890396 WBNEEB8553 CDR HED 109 CRDR HED 89/HEC 5250 WBPER940519 WBPER940534 WBPER940072	Description of Deficiency Condition A8 of SCRWBNEEB8724, doct E-MAX rack power supplies not qualified Calibration documentation Load data missing Radiation analyzer indicator light labels Recorder scales Ion chambers/toxes swapped in rework; w 273 & 274 not mounted with flat washers a SE calibration methods	mentation discrepancies vere calibrated as a pair as shown in VTM	, 、	۹. ۲۰۰۰ ۲۰۰۰ ۲۰	······································			
WBSCA940032	Penetration terminations of coax; coax to s	ingle conductor transition		· · ·				
Design Change Notice	: Related Deficiency: WBNEEB8724 WBP890586		BNEEB8724, documentatio	/Field Modifications: n corrections only	· ·		, i <u>k</u> - 1	*a.,
23167 23167 RD1030623 Contract 108598 RD100708909153 N/A	CRDR HED 89/HEC 5250 WBSCA940032 WBPER940519 WBPER940072 WBSCA940032 WBPER9400534	Return ion chambers fo Purchase new RT-11 ca Correct connector to ca	uctions for coax to single cor or recalibration in boxes as ir alibration source	nstalled			26	
S-32449 27485 34421	N/A N/A	<ul> <li>Test requirements SSDs Preoperational test crite</li> </ul>	·					

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Watts Clear Plant Radiation Monoring System (RMS) Deficiencies Impacting RMS

				Deficiencies Imp	acting RMS			
	Radiation Monitor:	Monitor Type:	Monitor Classi					
	1-RE-90-272	Area	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:		•
		Alea	Yes	No	Yes	Yes		
	Monitor Description:	RB Upper Compartment PAM	Monitor	*	• •	• • • •		
	TVA Deficiency:	Description of Deficiency	/:					
	WBNEEB8724 WBP890586 WBP890396 WBNEEB8553 CDR HED 199 CRDR HED 89/HEC 5250 WBPER940519	Condition A8 of SCRWBNEEB8724, docu E-MAX rack power supplies not qualified Calibration documentation Load data missing Radiation analyzer indicator light labels Recorder scales Ion chambers/boxes swapped in rework; wo	mentation discrepancies				•	• .
	WBPER940534	273 & 274 not mounted with flat washers a	s shown in VTM					
	WBPER940072 WBSCA940032	SE calibration methods Penetration terminations of coax; coax to si	ingle conductor transition		,	, · · ·		
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۰.	Design Change Notice:				ield Modifications:		- • • • • • • • • • • • • • • • • • • •	¥4.
	10604 11304 23167	WBNEEB8724 WBP890586 CRDR HED 89/HEC 5250	Replace power supplies Correct recorder scales		·			
	23167 RD1030623 Contract 108598	WBSCA940032 WBPER940519 WBPER940072		ctions for coax to single condu recalibration in boxes as inst libration source			<sup>تعر</sup> به م	
,	RD100708909153 N/A S-32449	WBSCA940032 WBPER940534	Correct connector to cat Incorporated into WBSC Test requirements	ble termination 🧼 🔅 A 910259; became civil issue			· · · ·	
	27485 34421	N/A N/A	SSDs Preop test criteria					

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Watts Clear Plant Radiation Monoring System (RMS) Deficiencies Impacting RMS

Radiation Monitor:	Monitor Type:	Monitor Classification:				
1-RE-90-273	Area	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
		Yes	No	Yes	Yes	
Monitor Description:	RB Lower Compartment PAM	Monitor		· · ·		e •
TVA Deficiency: WBNEEB8724 WBP8900386 WBP8900396 WBNEEB8553 CDR HED 109 CRDR HED 89/HEC 5250 WBPER940519 WBPER940534 WBPER940072 WBSCA940032	Description of Deficiency Condition A8 of SCRWBNEEB8724. docu E-MAX rack power supplies not qualified Calibration documentation Load data missing Radiation analyzer indicator light labels Recorder scales Ion chambers/boxes swapped in rework; wu 273 & 274 not mounted with flat washers a SE calibration methods Penetration terminations of coax; coax to si	mentation discrepancies tre calibrated as a pair s shown in VTM	<u>.</u> .			•••••••
						2 · · ·

Design Change Notice: 10604 11304 23167 23167 RD1030623 Contract 108598 RD100708909153 N/A

S-32449 27485

34421

Related Deficiency: WBNEEB8724 WBP890586 CRDR HED 89/HEC 5250 WBSCA940032 WBPER940519 WBPER940072 WBSCA940032 WBPER940534 N/A

N/A

Description of Design Changes/Field Modifications:

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Condition A8 to SCRWBNEEB8724, documentation corrections only Replace power supplies in R-163,164 Correct recorder scales Provide materials/instructions for coax to single conductor transition Return ion chambers for recalibration in boxes as installed Purchase new RT-11 calibration source Correct connector to cable termination for Incorporated into WBSCA 910259; became civil issue Test requirements SSDs Preop test criteria Watts Clear Plant Radiation M ng System (RMS)

			Deficiencies Impa	cting RMS	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
1-RE-90-274	A	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related
	Area	Yes	No	Yes	Yes
Monitor Description:	RB Lower Compartment PAM	/ Monitor		·	
TVA Deficiency:	Description of Deficience	:v:			
WBNEEB8724	Condition A8 of SCRWBNEEB8724, do	cumentation discrepancies			
WBP890586 WBP890396	E-MAX rack power supplies not qualifie Calibration documentation	d			
WBNEEB8553 CDR HED 109	Load data missing Radiation analyzer indicator light labels				
CRDR HED 89/HEC 5250	Recorder scales				
WBPER940519 WBPER940534	Ion chambers/boxes swapped in rework; 273 & 274 not mounted with flat washers	were calibrated as a pair as shown in VTM			
WBPER940072 WBSCA940032	SE calibration methods Penetration terminations of coax; coax to	single conductor transition			
induction in the second				. •	
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			~		
Design Change Notice:	Related Deficiency:	Description of [	Design Changes/Fi	eld Modifications:	
10604	WBNEEB8724	Condition A8 to SCRWB	VEEB8724, documentation co		
11304 23167	WBP890586 CRDR HED 89/HEC 5250	Replace power supplies i Correct recorder scales	n R-163,164		
23167	WBSCA940032		ions for coax to single conduc		
23167 RD1030623	WBSCA940032 WBPER940519 WBPER940072		ecalibration in boxes as instal		
23167 RD1030623 Contract 108598 RD100708909153	WBPER940519 WBPER940072 WBSCA940032	Return ion chambers for a Purchase new RT-11 cali Correct connector to cabl	ecalibration in boxes as instal bration source e termination		
23167 RD1030623 Contract 108598 RD100708909153 N/A	WBPER940519 WBPER940072	Return ion chambers for a Purchase new RT-11 cali Correct connector to cabl Incorporated into WBSCA	ecalibration in boxes as instal bration source		
23167 RD1030623 Contract 108598 RD100708909153 N/A S-32449 27485	WBPER940519 WBPER940072 WBSCA940032 WBPER940534 N/A	Return ion chambers for a Purchase new RT-11 cali Correct connector to cabl Incorporated into WBSCA Test requirements SSDs	ecalibration in boxes as instal bration source e termination		• .
23167 RD1030623 Contract 108598 RD100708909153 N/A S-32449	WBPER940519 WBPER940072 WBSCA940032 WBPER940534	Return ion chambers for a Purchase new RT-11 cali Correct connector to cabl Incorporated into WBSCA Test requirements	ecalibration in boxes as instal bration source e termination		۰.
23167 RD1030623 Contract 108598 RD100708909153 N/A S-32449 27485	WBPER940519 WBPER940072 WBSCA940032 WBPER940534 N/A	Return ion chambers for a Purchase new RT-11 cali Correct connector to cabl Incorporated into WBSCA Test requirements SSDs	ecalibration in boxes as instal bration source e termination		۰.

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Iclear Plant Watts Radiation M ring System (RMS)

**Deficiencies Impacting RMS** 

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Radiation Monitor:	Monitor Type:	Monitor Classification:		-	Cofety Doloted	
1-RE-90-275	Shine	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
		No	No	No	Yes	
Monitor Description: TVA Deficiency: SCRWBNEEB8724 SCRWBNEEB8724 WBP570870 WBP890192 WBP890192 WBP890473P WBP910053 PIRWBNEEB8553 CRDR HED 109 CRDR HED 89/HEC 5250 SCRWBNEEB8680 WBPER940072 WB5CA940032 WBPER950680	Reactor Coolant Drain Tank M Description of Deficiency Condition A6 of SCRWBNEEB8724, loc: Condition A8 of SCRWBNEEB8724, doc: Inductive kickback from RL-1, failure rese Undocumented changes to ratemeters Calibration documentation missing Unauthorized "keep alive" source in RD-1 Vendor changes to RD-1 electronics card, Lack of load data Radiation analyzer indicator light scales Recorder scales Cat A/C interface violations Sorrento calibration methods: RT-10, RT: Transition from coax to single conductor Low signal experienced before source oper	/: tition, mounting, geometry missing umentation inconsistencies ts 's bad fit 11 calibrators	' Iarms in MCR			
		• .			. *	
Design Change Notice: 02440 05002 06378 10604 23167 23167 23167 RD1007089 TACF 1-96-01-90	Related Deficiency:           WBP870870           WBNEEB8680           WBP890192           CROR HED 109           WBNEEB8724 R3           WBNEEB8724 R3           CRDR HED 89/HEC 5250           WBSCA940032           WBPER940072           WBPER950680	Add diode, alarm relay co Add isolation for Cat A/C Install new ratemeters & Condition A8 of SCRWBI Condition A6 of SCRWBI Correct recorder scales Provide materials/instruct Purchase new RT-10, RT	sil, RL-1 interface power supply NEEB8724, documentation c NEEB8724, document location tions for transition from coax i	on & mounting detail to single conductors	<b>、</b>	

Watts Enclose Plant Radiation Monoring System (RMS) Deficiencies Impacting RMS

<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classif	Monitor Classification:					
1-RE-90-276	Shine	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	• •		
	Shine	Νο	No	No	Yes			
Monitor Description	Reactor Coolant Drain T	ank Monitor						

#### Description of Deficiency:

Condition A6 of SCRWBNEEB8724, location, mounting, geometry missing Condition A8 of SCRWBNEEB8724, documentation inconsistencies Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing Unauthorized 'keep alive'' source in RD-1's Vendor changes to RD-1 electronics card, bad fit Lack of load data Radiation analyzer indicator light scales Recorder scales Cat A/C interface violations Sorrento calibration methods: RT-10, RT-11 calibrators Transition from coax to single conductor Low signal experienced before source operation results in downscale failure alarms in MCR Use of old scale in new QA ratemeter.

02440 05002 06378 06378

Design Change Notice:

**TVA Deficiency:** 

SCRWBNEEB8724

SCRWBNEEB8724 WBP870870

WBP890192

WBP890396

WBP890473P

WBP910053

PIRWBNEEB8553

SCRWBNEEB8680

CRDR HED 89/HEC 5250

CRDR HED 109

WBPER940072

WBSCA940032

WBPER950680

WBPER950075

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RD1007089

TACF 1-96-01-90 92-1662500 WBP870870 WBNEEB8680 WBP890192 CRDR HED 109 WBNEEB8724 R3 CRDR HED 89/HEC 5250 WBSCA940032 WBPER940072 WBPER950680

WBPER950075

**Related Deficiency:** 

Description of Design Changes/Field Modifications: Add diode, alarm relay coil, RL-1 Add isolation for Cat A/C interface

Install new ratemeters & power supply Install new ratemeters & power supply Condition A8 of SCRWBNEEB8724, documentation corrections only Condition A6 of SCRWBNEEB8724, document location & mounting detail Correct recorder scales Provide materials/instructions for transition from coax to single conductors Purchase new RT-10, RT-11 calibrators Add temporary keep alive sources to prevent spurious alarms Correct scale to new

clear Plant Watts ing System (RMS) Radiation Mo

Deficiencies Impacting RMS

	Monitor Type:	·			
1-RE-90-277	Shine	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Onine	No	No	No	Yes
Monitor Description: TVA Deficiency: SCRWBNEEB8724 SCRWBNEEB8724 WBP800192 WBP800192 WBP800473P WBP910053 PIRWBNEEB8553 CRDR HED 109 CRDR HED 109 CRDR HED 109 CRDR HED 109 CRDR HED 109 CRDR HED 109 CRDR HED 89/HEC 5250 SCRWBNEEB8680 WBPER940072 WBSCA940032 WBPER950650	Reactor Building Floor and Equip Description of Deficiency: Condition A6 of SCRWBNEEB8724, location, Condition A8 of SCRWBNEEB8724, document Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing Unauthorized "keep alive" source in RD-1's Vendor changes to RD-1 electronics card, bad fit Lack of load data Radiation analyzer indicator light scales Recorder scales Cat A/C interface violations Sorrento calibration methods: RT-10, RT-11 ca Transition from coax to single conductor Low signal experienced before source operation	mounting, geometry missing ation inconsistencies it librators			· · · · · · · · · · · · · · · · · · ·

Design Change Notice: 02440 05002 06378 06378 10604 23167 WBNEEB8724 R3 WBNEEB8724 R3 CRDR HED 89/HEC 5250 23167 WBSCA940032 WBPER940072

23167 RD1007089

TACF 1-96-01-90

# **Related Deficiency:** WBP870870 WBNEEB8680 WBP890192 CRDR HED 109 , ~

WBPER950680

Description of Design Changes/Field Modifications: Add diode, alarm relay coil, RL-1 Add isolation for Cat A/C interface And isolation for Cat A/C interface Install new ratemeters & power supply Install new ratemeters & power supply Condition A8 of SCRWBNEEB8724, documentation corrections only Condition A6 of SCRWBNEEB8724, document location & mounting detail Correct recorder scales Provide materials/instructions for transition from coax to single conductors Purchase new RT-10, RT-11 calibrators Add temporary keep alive sources to prevent spurious alarms

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#### Watts clear Plant ing System (RMS) Radiation Mo

**Deficiencies Impacting RMS** 

Radiation Monitor:	Monitor Type:	Monitor Classification:				
1-RE-90-278	Shine	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Shine	No	No	No	Yes	
	Reactor Building Floor	and Equipment Drain Sump	Monitor			

#### Reactor Building Floor and Equipment Drain Sump Monitor Monitor Description:

**TVA Deficiency:** 

SCRWBNEEB8724

SCRWBNEEB8724 WBP870870

WBP890192

WBP890396

WBP910053 PIRWBNEEB8553

WBP890473P

CRDR HED 109

WBPER940072

WBSCA940032

WBPER950680

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06378 10604

23167

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23167

SCRWBNEEB8680

**Description of Deficiency:** Condition A6 of SCRWBNEEB8724, location, mounting, geometry missing Condition A8 of SCRWBNEEB8724, documentation inconsistencies Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing Unauthorized "keep alive" source in RD-1's Vendor changes to RD-1 electronics card, bad fit Lack of load data Radiation analyzer indicator light scales CRDR HED 89/HEC 5250 Recorder scales Cat A/C interface violations Sorrento calibration methods: RT-10, RT-11 calibrators Transition from coax to single conductor Low signal experienced before source operation results in downscale failure alarms in MCR

**Design Change Notice:** 

#### **Related Deficiency:** WBP870870

WBNEEB8680

CRDR HED 109

WBNEEB8724 R3

WBNEEB8724 R3

WBSCA940032

WBPER940072

WBPER950680

CRDR HED 89/HEC 5250

WBP890192

#### **Description of Design Changes/Field Modifications:**

RD1007089 TACF 1-96-01-90

Add diode, alarm relay coil, RL-1 Add isolation for Cat A/C interface Install new ratemeters & power supply Install new ratemeters & power supply Condition A8 of SCRWBNEEB8724, documentation corrections only Condition A6 of SCRWBNEEB8724, document location & mounting detail Correct recorder scales Provide materials/instructions for transition from coax to single conductors Purchase new RT-10, RT-11 calibrators Add temporary keep alive sources to prevent spurious alarms

# Watts Clear Plant Radiation Monthling System (RMS)

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Deficiencies Impacting RMS

			Deficiencies imp	acting RMS		
<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classif	ication:			
	monitor type.				Cafate Dalatade	
1-RE-90-280	Araa	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Area	No	No	No	No	
	Deet Assident Compling Dee	m Manitan				
Monitor Description:	Post Accident Sampling Roc	m Monitor				
TVA Deficiency:	Description of Deficiend	· · ·		·		
SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, do				-	
WBP870870	Inductive kickback from RL-1, failure re					
WBP890192	Undocumented ratemeter changes					
WBP890396 WBP890473P	Lack of calibration documentation Unauthorized keep alive source in RD-1			\$		
WBP910053	Vendor change, RD-1 electronics card cl	ange fit				
WBNEEB8553	Lack of load data	<b>B</b>		1		
23005-WBN-02 CDR HED 109	Lack of radiation monitoring in CDWE					
CRDR HED 93	Radiation analyzer indicator light labels Recorder scales (not applicable to 1-RE-					
CRDR HED 89/HEC 5253	Recorder scales (applicable only to 2-RE	-90-1,6,7,8,10)				
CRDR HED 89/HEC 5238	Recorder scales (applicable only to 1-RE					
WBSCA940032 WBPER940072	Undocumented method of transitioning fr RT-10, RT-11 calibrator documentation,		uctor; madequate w w K cable	to connector termination		
WBP890492SCA	Replace coax cable for cable damage iss					
Design Change Notice	Deleted Deficiency	Departmention of I	)anian Chanana/E	ield Medifientioner		
Design Change Notice	: Related Deficiency: WBP870870	•		ield Modifications:		
02440 30312	WBP870870	PAM Upgrade (0-RE-90-1		ngineering Change Order 12674,		
06378	WBP890192	Install new ratemeters &				
06378	CRDR HED 109	Install new ratemeters &				
06378 09840	WBP890396 N/A	Install new detector and o Delete loops 235 & 236	omponents, loop 002			
10604	SCRWBNEEB8724		EEB8724, documentation c	corrections only		
23167	CRDR HED 89 & 93	Correct recorder scales				
23169	WBP870870 N/A	Add diode, alarm relay co SSD for 0-RE-90-135	il, RL-1 for 2-RI-90-7B,8B,10	B, General Atomic Engineering Change	Order 12674	,
23409 33616	N/A	Replace recorders 1-RR-9	90-1 and RR-90-12			
RD1014511	WBPER940072	Purchase new RT-10, RT	11 calibrators			
23167	WBSCA940032		ions for transition from coax	to single conductors		
08858 08859	WBP890492SCA WBP890492SCA	Replace coax cable for ca Replace coax cable for ca				
09153	WBP890492SCA	Replace coax cable for ca				
35114	N/A	In WBRD 390,391/94-56	not a listed violation) Relocat	te 1-RE-90-7,61, and 0-RE-90-11 for opti-	mum area radiation detection	
37566 16544	F-24447	Resolve ground loops (sh Delete 0-R-90-63	ield ties) (loops 2,59,60 only	2		
06378	F-36399	Add keep alive source for	1-RE-90-2			
30354	N/A	Correct scale				

Watts E Clear Plant Radiation Mong System (RMS)

Deficiencies Impacting RMS

Monitor Type:	Monitor Classific	ation:	-	,
Obline	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
Shine	No	No	No	Yes
RHR Post Accident Monitor				
Description of Deficiency:				
Condition A8 of WBNEEB8724, documentation Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing	on inconsistencies			
	Shine RHR Post Accident Monitor Description of Deficiency: Condition A6 of WBNEEB8724, location, ma Condition A8 of WBNEEB8724, documentatio Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing	Shine Tech Spec: No RHR Post Accident Monitor Description of Deficiency: Condition A6 of WBNEEB8724, location, mounting, geometry missing Condition A8 of WBNEEB8724, documentation inconsistencies Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters	Tech Spec:     ODCM:       Shine     No     No       RHR Post Accident Monitor     No     No       Description of Deficiency:     Condition A6 of WBNEEB8724, location, mounting, geometry missing Condition A8 of WBNEEB8724, documentation inconsistencies Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing     Volume 1000000000000000000000000000000000000	Tech Spec:     ODCM:     Reg. Guide 1.97:       Shine     No     No       RHR Post Accident Monitor     No       Description of Deficiency:     Condition A6 of WBNEEB8724, location, mounting, geometry missing Condition A8 of WBNEEB8724, documentation inconsistencies Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing

Vendor changes to RD-1 electronics card, bad fit (applicable to loops 290 and 292)

Hi range (291, 293) will not alarm at local indicator because +24 volts is not supplied

Design Change Notice: 02440 5002 36274 10604 23167 23167 23167 23167 23409

RD1007089

S-37910 .

WBP910053

PIRWBNEEB8553

CRDR HED 89/HEC 5250

CRDR HED 109

WBPER940072

WBSCA940032

WBPER950256

WBP870870 WBNEEB8680 WBPER950256 WBNEEB8724 R3 WBNEEB8724 R3 CRDR HED 89/HEC 5250 WBSCA940032 N/A WBPER940072 WBNEEB8724 R3

Lack of load data

Recorder scales

Radiation analyzer indicator light labels

Transition from coax to single conductor

**Related Deficiency:** 

RT-10, RT-11 transfer data; SE calibration methods

Description of Design Changes/Field Modifications: Add diode, alarm relay coil, RL-1 Add isolation for Cat A/C interface Delete local alarm requirement for 291, 293 Condition A8 of WBNEEB8724, documentation corrections only Condition A6 of WBNEEB8724, document location & mounting detail Correct recorder scales Provide materials/instructions for transition from coax to single conductors SSDs Order new RT-10, RT-11 calibrators

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Condition A6 of WBNEEB8724, Correct RE-90-292 document change

### Watts Clear Plant Radiation Monoring System (RMS)

Deficiencies Impacting RMS

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Radiation Monitor:	Monitor Type: Monitor Classification:						
1-RE-90-291		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	,	• •
	Shine	No	No	No	Yes		
Monitor Description:	RHR Post Accident Monitor						
TVA Deficiency:	<b>Description of Deficience</b>	v:			,		
WBNEEB8724 WBNEEB8724 WBP870870 WBP890192 WBP890396 PIRWBNEEB8553 WBSCA940032 WBPER590256	Condition A6 of WBNEEB8724, location Condition A8 of WBNEEB8724, documer Inductive kickback from RL-1, failure rest Undocumented changes to ratemeters Calibration documentation missing Lack of load data Transition from coax to single conductor Hi range (291, 293) will not alarm at local	, mounting, geometry missing nation inconsistencies ets	supplied				
CRDR HED 109 CRDR HED 89/HEC 5250 WBPER940072 WBSCA940032	Radiation analyzer indicator light labels Recorder scales RT-10, RT-11 transfer data; SE calibratio. Transition from coax to single conductor	n methods	supplied				
WBPER950256	Hi range (291, 293) will not alarm at local	indicator because +24 volts is not	supplied				
WBPER950256	Hi range (291, 293) will not alarm at local	indicator because +24 volts is not	: supplied				
WBPER950256	Hi range (291, 293) will not alarm at local	indicator because +24 volts is not	: supplied				
Design Change Notice: 02440 06378	Related Deficiency:           WBP870870           WBP890192	Description of Add diode, alarm relay of Install new ratemeters &	Design Changes/Fig	eld Modifications:		, , , , , , , , , , , , , , , , , , ,	
WBPER950256 <b>Design Change Notice:</b> 02440 06378 06378 06378 10604 23167 23167 23167	Related Deficiency:	Description of Add diode, alarm relay o Install new ratemeters & Condition A8 of WBNEE Condition A6 of WBNEE Condition A6 of WBNEE	Design Changes/Fig	ons only ounting detail		, ,	

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# Watts Clear Plant Radiation Ms Register (RMS)

Deficiencies Impacting RMS

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Radiation Monitor:	Monitor Type:	Monitor Classification:				
1-RE-90-292	Shine	Tech Spec:	ODCM:		Reg. Guide 1.97:	Safety Related:
	Shine	No	No		No	Yes
Monitor Description:	RHR Post Accident Monitor			ς		
TVA Deficiency:	Description of Deficiency:					
WBNEEB8724 WBNEEB8724 WBP870870 WBP890192 WBP890473P WBP910053 PIRWBNEEB8553 CRDR HED 109 CRDR HED 109 CRDR HED 89/HEC 5250 WBPER940072 WB5CA940032 WBPER950256 WBPER950390	Condition A6 of WBNEEB8724, location, mod Condition A8 of WBNEEB8724, documentation Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing Unauthorized "keep alive" source in RD-1's (ap Vendor changes to RD-1 electronics card, bad f Lack of load data Radiation analyzer indicator light labels Recorder scales RT-10, RT-11 transfer data; SE calibration met Transition from coax to single conductor Hi range (291, 293) will not alarm at local indic Location not per design output	n inconsistencies pplicable to loops 290 and 292) It (applicable to loops 290 and 292) hods	ied			,

Design Change Notice: **Related Deficiency:** Description of Design Changes/Field Modifications: WBP870870 02440 06378 Add diode, alarm relay coil, RL-1 WBP890192 CRDR HED 109 Install new ratemeters & power supply Install new ratemeters & power supply 06378 Condition A8 of WBNEEB8724, documentation corrections only Condition A6 of WBNEEB8724, document location & mounting detail 10604 WBNEEB8724 R3 WBNEEB8724 R3 23167 23167 CRDR HED 89/HEC 5250 Correct recorder scales WBSCA940032 Provide materials/instructions for transition from coax to single conductors 23167 23409 N/A SSDs WBPER940072 WBNEEB8724 R3 Order new RT-10, RT-11 calibrators RD1007089 S-37910 Condition A6 of WBNEE88724, Correct RE-90-292 document change WBPER950390 Relocate detector 95-18363-00

Watts Clear Plant Radiation Mo. Aring System (RMS)

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Deficiencies Impacting RMS

			Deficiencies impact	ing RMS				
Radiation Monitor: 1-RE-90-293	Monitor Type:	Monitor Classific Tech Spec:	cation: ODCM:	Reg. Guide 1.97:	Safety Related:			,
I-RE-90-295	Shine	No	No	No	Yes	•		
Monitor Description:	RHR Post Accident Monitor							
TVA Deficiency: WBNEEB8724	Description of Deficiency: Condition A6 of WBNEEB8724, location, mo							
WBNEE85724 WBP870870 WBP890192 WBP890396	Condition AS of WBNEEB8724, documentatio Inductive kickback from RL-1, failure resets Undocumented changes to ratemeters Calibration documentation missing	uning, geometry missing on inconsistencies				^		
PIRWBNEEB8553 CRDR HED 109 CRDR HED 89/HEC 5250 WBPER940072 WBSCA 940032 WBPER950256	Lack of load data Radiation analyzer indicator light labels Recorder scales RT-10, RT-11 transfer data; SE calibration me Transition from coax to single conductor Hi range (291, 293) will not alarm at local ind		pplied					
						T		
Design Change Notice: 02440 5002	Related Deficiency: WBP870870 WBNEEB8680	Description of De Add diode, alarm relay coil, Add isolation for Cat A/C in		Modifications:			/ 54 p	و معرو
10604 23167 23167 23167 23167 23409 RD1007089	WBNEEB8724 R3 WBNEEB8724 R3 CRDR HED 89/HEC 5252 WBSCA940032 N/A WBPER940072 WBNEEB8724 R3	Condition A6 of WBNEEB8 Correct recorder scales Provide materials/instructio SSDs Order new RT-10, RT-11 ca	1724, documentation corrections 1724, document location & mour Ins for transition from coax to sir alibrators 1724, Correct RE-90-292 docum	nting detail ngle conductors			The s	-
S-37910 36274, 36836	WBPER950256	Delete local alarm requirem						

Watts	iclear Plant
Radiation Mo	ring System (RMS)

Deficiencies Impacting RMS

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Radiation Monitor:	Monitor Type:	Monitor Classifica		a contrata 4.075	Sefety Polotody	
1-RE-90-400,	Gas Sampler	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
1-LPF-90-400	Cut outlipion	No	Yes	Yes	No	
Monitor Description:	Shield Building Vent Monitor					
TVA Deficiency:	Description of Deficiency:					
WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP870728 WBP880499 WBP890396 WBNNEB8709 S91/85-48-15 WBPER940107 WBPER940423 WBPER930458	Condition A1 of WBNEEB8724, non-isokinetic s Condition A2 of WBNEEB8724, non-isokinetic s Condition A8 of WBNEEB8724, documentation Condition C of WBNEEB8724, sample line bend Condition E of WBNEEB8724, Sample line bend Missing pipe tubing caps Lack of mounting details for flow elements Air monitor isokinetic sample panels problems Calibration documentation missing Specific documentation discrepancies Particulate plateout concerns Unit 2 shield building monitor required for unit 1 Software error in RM-80 allows stack overflow General sample line deficiencies vs. design criter Calibration interval	line routing problems inconsistencies I radius I radius	ved by corrective actions for SCRW	BNEEB8724		
Design Change Notice: 02243(U1)	Related Deficiency: WBP880197	Description of De	sign Changes/Field N for flow elements	Modifications:		
03451	WBNEEB8724 R3 WBNEEB8724 R3			90-400, 401, 402, 403 and install s 1,2-L-398 & install new panels &		
03541 03451 03451 03451	WBP880197 WBP880409 WBP890396 WBNNEB8705 391/85-48-15	Install valves as required Install new cabling and wiring	g as required			
03451 21619	N/A	Installs flow probes in Unit 1	and 2 Shield Building vents			
33276 35465	WBPER940107 WBPER940423 WBPER940423	Install new EPROMS, chang Add insulation and heat trace		eptions, design criteria WB-DC-40		
S-37549 F-37490	WBPER940601		w seismic class 1(L)B for radiatio		nonitoring and control equipment, EMS safety class	
S-37910	WBPER940601	Lower flow limits				
F-38210 F37490 (M3451)		Seismic restraints for spent f Revise data base sensitivity of				
S-38097 S-38268 34155	- (	Calc info output Limit fan operation to no ABGT Correct flow element identifiers	S be run if both containment purges a	are running (exceeds flow measureme	ent range)	
					•	

Watts (Clear Plant Radiation Mondering System (RMS) Deficiencies Impacting RMS

			Deficiencies Impa	cting RMS		
<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classif	ication:			
1-RE-90-402		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
1-LPF-90-452	Gas Sampler	No	Yes	Yes	No	
Monitor Description:	Shield Building Vent Sample Co					
TVA Deficiency:	Description of Deficiency:					
WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP870728 WBP880197 WBP880197 WBP880199 WBP880199 WBP880199 WBP880199 WBP880190 WBNEB8705 WBNNEB8705 WBNNEB8709	Condition A1 of WBNEEB8724, non-isokineti Condition A2 of WBNEEB8724, general samp Condition A8 of WBNEEB8724, general samp Condition C of WBNEEB8724, sample line be Condition E of WBNEEB8724, Sample line be Missing pipe tubing caps Lack of mounting details for flow elements Air monitor isokinetic sample panels problems Calibration documentation missing Specific documentation discrepancies Particulate plateout concerns Unit 2 shield building monitor required for unit	ole line routing problems on inconsistencies and radius end radius				-
391/85-48-15 WBPER940107	Software error in RM-80 allows stack overflow					
WBPER940423	General sample line deficiencies vs. design cri	teria				
Design Change Notice: 33106 02244(U2)	Related Deficiency: N/A WBP680197	Relay Unit 2 M-30 annun Document mounting deta		eld Modifications:		N 4 2442
03450 03450	WBNEEB8724 R3 WBNEEB8724 R3			2-RE-90-400, 401, 402, 403 and install panels 1,2-L-398 & install new panels		* <u>'</u> <u>'</u> <u>'</u>
03540 03450 03450 03450 03450 21619	WBP880197 WBP880409 WBP890396 WBNNEB8705 391/85-48-15 N/A		riring as required			
33275	WBPER940107	Install new EPROMS, ch	ange software rev level, Unit 2		~	
35465 S-37549	WBPER940423 WBPER940423 WBPER940601		line deficiencies or incorpora	te exceptions, design criteria WB-DC-40 adiation detection, sampling, and flow r		MS safety class
5-37349 F-37489 S-37910	WBPER940601	Latest issue data base as Lower flow limits				
F-38210		Seismic restraints for spe	ent filters			,
F37489 (M3450) S-3897 S-38268 S-36049		Calc info output	vity connection factors - Unit 2 BGTS be run if both containment	purges are running (exceeds flow measurem	ent range)	

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#### Watts uclear Plant Radiation Monitoring System (RMS) **Deficiencies Impacting RMS**

Radiation Monitor:	Monitor Type:	Monitor Classific	cation:			
1-RE-90-404		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
1-LPR-90-405	Gas	No	No	Yes	No	
1-LPR-90-450	Condenser Vacuum Vent Monito	-				
Monitor Description:	Condensel vacuarit vent violato					
TVA Deficiency:	Description of Deficiency:					
WBNEEB8724 R3	Condition A2 of WBNEEB8724, General samp		linas			
WBNEEB8724 R3 WBNEEB8724 R3		Condition A7 of WBNEEB8724, Moisture in condenser vacuum pump exhaust lines Condition A8 of WBNEEB8724, Documentation discrepancies				
WBNEEB8724 R3	Condition G of WBNEEB8724, Temperatures e Calibration documentation missing; Eberline Gl	Condition G of WBNEEB8724, Temperatures exceeding detector limits				
WBP890396	Canoration documentation missing; Ebernine G	vi i uocs				

WBPER940423 CRDR HED 151

General sample line deficiencies with respect to design criteria requirements Usability of Eberline CT-2B  $\,$ 

Design Change Notice: 17610 17610 06973 09916 10604 17610 17610 23545 33690 34525 19058 27485 30666 \$37630 W35498 \$38097	Related Deficiency:           WBNEEB8724 R3           WBNEEB8724 R3           CRDR HEDs 150, 151           SCRWBNEEB8724 R3           SCRWBNEEB8724 R3           SCRWBNEEB8724 R3           FCRNP1048 R1           WBPER940423           N/A           WBPER940423           N/A           WBPER940423           DD 95-0371	Description of Design Changes/Field Modifications:         Condition A2 of SCRWBNEEB8724, General sample line upgrades: add purge/test connections         Condition A2 of SCRWBNEEB8724, Sample line upgrades for monitors 99, 119, 129 may impact 404 also)         Condition A8 of SCRWBNEEB8724, Sample line upgrades for monitors 99, 119, 129 may impact 404 also)         Condition A8 of SCRWBNEEB8724, Sample line as-constructed         Repl       MEM I boards w/MEM II in MCR CT-28 & Local DAM units; inst bubble memory in CT-28, add TSC connection         Install relays in CT-2B & add annunciation for malf & hi rad; add take-up real for printer in CT-2B         Condition A8 of SCRWBNEEB8724, Documentation corrections only         Condition A7 of SCRWBNEEB8724, Reroute sample line, new tap         Condition A7 of SCRWBNEEB8724, Reroute sample line, new tap         Mounting details 1, 2-RM-90-450         Install new pump for 404, remove bulk filter assembly         Add data base to SSDs         WB-DC-40-24 R4, resolves or incorporates exceptions         Add purge capability and isolation valves         Correct relative locations of flange & probe         ERFDS programming for tested effluent release following radiological event         Calc info.output
W35498	N/A N/A	ERFDS programming for tested effluent release following radiological event

# Watts Budge Uclear Plant Radiation Monitoring System (RMS) Deficiencies Impacting RMS

adiation Monitor:					
	Monitor Type:	Monitor Classifi	cation:		
1-RE-90-421		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Shine	No	No	Yes	Νο
Monitor Description:	Main Steam Line Monitor				
TVA Deficiency:	<b>Description of Deficiend</b>	cv:			
SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 WBP890396 WBPER910454 CRDR HED 89/HEC 5250 INPO OER 88-2708 WBPER940107 WBPER940072 WBPER940001 WBSCA940032	Condition A6 of SCRWBNEEB8724, lat Condition A8 of SCRWBNEEB8724, lat Calibration documentation missing Main steam line monitors not qualified for Recorder scales Low range steam line monitors loose con RM-80 allows overwriting of memory Improper transfer calibration procedure No design criteria exception for unqualif Coax to single conductor transition	ck of geometry analysis coumentation inconsistencies or environment unts at SONGS	tiencies		
			×	•	
			<b>、</b>		
				·	
Design Change Notice:	Related Deficiency:	Description of [	)esign Changes/Fi	eld Modifications:	
Design Change Notice: 09964 10604 23167 23167 29173 RD1007089 33273	WBPER910454 WBNEE88724 R3 CRDR HED 89/HEC 5250 WBSCA940032 WBNEE88724 R3 WBPER940072 WBPER940107	Downgrade loops to RG 1 Condition A8 of SCRWBh Correct recorder scales Materials/instructions for C Condition A6 of SCRWBh New RD-2B detectors cali Upgrade E-PROMS for pa	.97 Cat 2 corrective actions to IEEB8724, documentation co coax to single conductor trans IEEB8724, document monito brated to new, approved proor tf 21 problem	based on walkdowns: add TSC, rdr, ala prrections only sition	rm outputs
09964 10604 23167 23167 29173 RD1007089	WBPER910454 WBNEEB8724 R3 CRDR HED 89/HEC 5250 WBSCA940032 WBNEEB8724 R3 WBPER940072	Downgrade loops to RG 1 Condition A8 of SCRWBN Correct recorder scales Materials/instructions for of Condition A6 of SCRWBN New RD-2B detectors call	.97 Cat 2 corrective actions to IEEB8724, documentation co coax to single conductor trans IEEB8724, document monito brated to new, approved proor tf 21 problem	pased on walkdowns: add TSC, rdr, ala prrections only sition or location	rm outputs

uclear Plant Watts Radiation Methoring System (RMS)

**Deficiencies Impacting RMS** 

Radiation Monitor:	Monitor Type:	Monitor Classification:				
1-RE-90-422		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Shine	No	No	Yes	No	
Monitor Description	Main Steam Line Monitor					

#### **Description of Deficiency:**

TVA Deficiency:

SCRWBNEEB8724 R3 SCRWBNEEB8724 R3

CRDR HED 89/HEC 5250

WBP890396 WBPER910454

WBPER940107

WBPER940072

WBPER940601 WBSCA940032

INPO OER 88-2708

Condition A6 of SCRWBNEEB8724, lack of geometry analysis Condition A8 of SCRWBNEEB8724, documentation inconsistencies Calibration documentation missing Main steam line monitors not qualified for environment Recorder scales Low range steam line monitors loose counts at SONGS RM-80 allows overwriting of memory Improper transfer calibration procedure No design criteria exception for unqualified low range; general equipment deficiencies Coax to single conductor transition

<b>Design Change Notice:</b> 09964 10604 23167 23167 29173 RD1007089 33273 27485	Related Deficiency: WBPER910454 WBNEEB8724 R3 CRDR HED 89/HEC 5250 WBSCA940032 WBNEEB8724 R3 WBPER940072 WBPER940072 WBPER940007 - WBPER940601 (F-33273)	Description of Design Changes/Field Modifications: Downgrade loops to RG 1.97 Cat 2 corrective actions based on walkdowns: add TSC, rdr, alarm outputs Condition A8 of SCRWBNEEB8724, documentation corrections only Correct recorder scales Materials/instructions for coax to single conductor transition Condition A6 of SCRWBNEEB8724, document monitor location New RD-2B detectors calibrated to new, approved procedure, new RT-10, 11 calibrators Upgrade E-PROMS for part 21 problem Rev SSDs to delete low range detector
F-38245 S-38097	Revise SSDs (27485)	Calc infor input

#### uclear Plant Watts Radiation Monitoring System (RMS) **Deficiencies Impacting RMS**

			Demolenoies mip	doring rand	
<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classification:			
1-RE-90-423		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Shine	No	No	Yes	No
Monitor Description:	Main Steam Line Monitor			,	
TVA Deficiency:	Description of Deficiency:				
SCRWBNEEB8724 R3 SCRWBNEEB8724 R3 WBP890396 WBPER910454 CRDR HED 89/HEC 5250 INPO OER 88-2708 WBPER940107 WBPER940072 WBPER940601 WBSCA940032	Condition A6 of SCRWBNEEB8724, lack of Condition A8 of SCRWBNEEB8724, docum Calibration documentation missing Main steam line monitors not qualified for en Recorder scales Low range steam line monitors loose counts RM-80 allows overwriting of memory Improper transfer calibration procedure No design criteria exception for unqualified I Coax to single conductor transition	entation inconsistencies wironment at SONGS	Iciencies	· · ·	·

**Description of Design Changes/Field Modifications: Design Change Notice: Related Deficiency:** WBPER910454 WBNEEB8724 R3 Downgrade loops to RG 1.97 Cat 2 corrective actions based on walkdowns: add TSC, rdr, alarm outputs 09964 10604 23167 23167 29173 Condition A8 of SCRWBNEEB8724, documentation corrections only CRDR HED 89/HEC 5250 Correct recorder scales WBSCA940032 WBNEEB8724 R3 Materials/instructions for coax to single conductor transition Condition A6 of SCRWBNEEB8724, document monitor location New RD-2B detectors calibrated to new, approved procedure, new RT-10, 11 calibrators WBPER940072 RD1007089 Upgrade E-PROMS for part 21 problem WBPER940107 33273 WBPER940601 (F-33273) Rev SSDs to delete low range detector 27485 Revise SSDs (27485) F-38245 Calc infor input

S-38097

#### uclear Plant Watts Radiation Monitoring System (RMS) **Deficiencies Impacting RMS**

<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classification:				
1-RE-90-424		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
<b>、</b>	Shine	No	No	Yes	No	

#### Main Steam Line Monitor

#### **Description of Deficiency:**

Condition A6 of SCRWBNEEB8724, lack of geometry analysis Condition A8 of SCRWBNEEB8724, documentation inconsistencies Calibration documentation missing Main steam line monitors not qualified for environment Recorder scales Low range steam line monitors loose counts at SONGS RM-80 allows overwriting of memory Improper transfer calibration procedure No design criteria exception for unqualified low range; general equipment deficiencies Coax to single conductor transition

Description of Design Changes/Field Modifications: **Design Change Notice: Related Deficiency:** Downgrade loops to RG 1.97 Cat 2 corrective actions based on walkdowns: add TSC, rdr, alarm outputs WBPER910454 09964 WBNEEB8724 R3 Condition A8 of SCRWBNEEB8724, documentation corrections only 10604 CRDR HED 89/HEC 5250 Correct recorder scales 23167 WBSCA940032 Materials/instructions for coax to single conductor transition 23167 Condition A6 of SCRWBNEEN8B24, document monitor location WBNEEB8724 R3 29173 New RD-2B detectors calibrated to new, approved procedure, new RT-10, 11 calibrators WBPER940072 RD1007089 WBPER940107 Upgrade E-PROMS for part 21 problem 33273 Rev SSDs to delete low range detector WBPER940601 (F-33273) 27485 Revise SSDs (27485) F-38245

S-38097

**Monitor Description: TVA Deficiency:** 

SCRWBNEEB8724 R3 SCRWBNEEB8724 R3

WBP890396

WBPER910454 CRDR HED 89/HEC 5250

WBPER940107

WBPER940072

WBPER940601 WBSCA940032

INPO OER 88-2708

Calc infor input

### Watts Burger Uclear Plant Radiation Monitoring System (RMS) Deficiencies Impacting RMS

			Deficiencies impa	icting RMS		
Radiation Monitor: 2-RE-90-001	Monitor Type:	Monitor Classifi Tech Spec:	cation: ODCM:	Reg. Guide 1.97:	Safety Related:	
	Area	No	No	No	No	
Monitor Description: TVA Deficiency: SCRWBNEEB8724 WBP870870 WBP890192 WBP890473P WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238	Spent Fuel Pool Area Monito Description of Deficience Condition A8 of SCRWBNEEB8724, do Inductive kickback from RL-1, failure re- Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card cf Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels of Recorder scales (applicable only to 2-RE Recorder scales (applicable only to 1-RE Recorder scales (applicable only to 1-RE Undocumented method of transitioning fit	Cumentation inconsistencies set (not applicable to O-RE-90-135) hange fit (not applicable to 0-RE-90-135) 90-280, 2-RE-90-1,6,7,8,10) -90-1,6,7,8,10) -90-280, 90-280				
WBPER940072 WBP890492SCA Design Change Notice:		∞ Description of D		eld Modifications:		
02440 30312 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 09153 35114 37566 16544 06378	WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA N/A F-24447 F-36399	PAM Upgrade (0-RE-90-1 Install new ratemeters & p Install new ratemeters & p Install new ratemeters & p Install new detector and c Delete loops 235 & 236 Condition A8 of SCRWBN Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR-§ Purchase new RT-10, RT- Provide materials/instruct Replace coax cable for ca Replace coax cable for ca Replace coax cable for ca In WBRD 390,391/94-56 I	35) power supply omponents, loop 002 IEEB8724, documentation cc iil, RL-1 for 2-RI-90-7B,8B,10I 20-1 and RR-90-12 -11 calibrators ions for transition from coax to ble damage issue ble damage issue ble damage issue hot a listed violation) Relocate field ties) (loops 2,59,60 only)	B, General Atomic Engineering Change o single conductors e 1-RE-90-7,61, and 0-RE-90-11 for opti		

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#### uclear Plant Watts Radiation Monitoring System (RMS) Deficiencies Impacting RMS

			Deficiencies Imp	acting RMS		
<b>Radiation Monitor:</b> 2-RE-90-006	Monitor Type:	Monitor Classification:				
	21	Tech Spec: ODCM:		Reg. Guide 1.97:	Safety Related:	
	Area	No	No	No	No	
Monitor Description:	Component Cooling Heat Ex	changer Area Monitor			-	
TVA Deficiency:	Description of Deficiend	cv:		-		
SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890473P WBPE8B8553 23005-WBN-02 CDR HED 109 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940072 WBP890492SCA	Condition A8 of SCRWBNEEB8724, dc Inductive kickback from RL-1, failure re Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card ci Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels Recorder scales (not applicable to 1-RE Recorder scales (applicable only to 2-RE Recorder scales (applicable only to 1-RE Undocumented method of transitioning f RT-10, RT-11 calibrator documentation, Replace coax cable for cable damage iss	eset (not applicable to O-RE-90-135) hange fit (not applicable to 0-RE-90-135) 90-280, 2-RE-90-1,6,7,8,10) 5-90-280, 2-RE-90-1,6,7,8,10) 5-90-280, Tom coax to TSP, triax, or single con SE calibration methods	ductor; inadequate WWK cable	to connector termination		
Design Change Matica	Related Deficiency:	Description of	Design Changes/F	ield Modifications:		
Design Change Notice:	WBP870870			ngineering Change Order 12674		
02440 30312	**0F0/00/0	PAM Upgrade (0-RE-90-				
06378	WBP890192	Install new ratemeters &	power supply			
06378	CRDR HED 109	Install new ratemeters &				
06378	WBP890396	Install new detector and	components, loop 002			
09840	' N/A	Delete loops 235 & 236				
10604	SCRWBNEEB8724		NEEB8724, documentation of	corrections only		
23167	CRDR HED 89 & 93	Correct recorder scales			0-1 40074	
23169	WBP870870		oil, RL-1 for 2-RI-90-7B,8B,10	DB, General Atomic Engineering Change	Urder 126/4	
23409	N/A	SSD for 0-RE-90-135	00.1 and BB 00.12	r		
33616		Replace recorders 1-RR- Burchase new RT-10_RT				
00/04/07/4	1A/BDED0/0072	Purchase new RT-10_R1	-11 Calibrators			

Replace coax cable for cable damage issue Replace coax cable for cable damage issue

Provide materials/instructions for transition from coax to single conductors

Replace coax cable for cable damage issue Replace coax cable for cable damage issue In WBRD 390,391/94-56 not a listed violation) Relocate 1-RE-90-6, 61, and 0-RE-90-11 for optimum area radiation detection Resolve ground loops (shield ties) (loops 2,59,60 only) Delete 0-R-90-63

Purchase new RT-10, RT-11 calibrators

Add keep alive source for 1-RE-90-2

23167

08858

RD1014511

WBPER940072

WBPERS40072 WBSCA940032 WBP890492SCA

WBP890492SCA WBP890492SCA

N/A F-24447 F-36399 5

### Watts Burger Clear Plant Radiation Monitoring System (RMS) Deficiencies Impacting RMS

			Deficiencies Imp	acting RMS	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
2-RE-90-007		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
	Area	No	Νο	No	Νο
Monitor Description:	Sample Room Monitor				
TVA Deficiency:	Description of Deficienc	y:			
SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890396 WBP910053 WBNEEB8553 22005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5253 WBSCA940032 WBPER940072 WBP890492SCA	Condition A8 of SCRWBNEEB8724, doc Inductive kickback from RL-1, failure res Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card cha Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels ( Recorder scales (applicable only to 2-RE- Recorder scales (applicable only to 2-RE- Recorder scales (applicable only to 1-RE- Undocumented method of transitioning fr RT-10, RT-11 calibrator documentation, S Replace coax cable for cable damage issue	et (not applicable to O-RE-90-135) ange fit not applicable to 0-RE-90-135) 0-280, 2-RE-90-1,6,7,8,10) 90-1,6,7,8,10) 90-280) om coax to TSP, triax, or single conc SE calibration methods	uctor; inadequate WWK cable	to connector termination	
/					
Design Change Notice:	Related Deficiency:	Description of I	Design Changes/F	Field Modifications:	
besign onlinge notice				-i	

Design Change Notice:	Related Deficiency:	Description of Design Changes/Field Modifications:
. 02440	WBP870870	Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674
30312		PAM Upgrade (0-RE-90-135)
06378	WBP890192	Install new ratemeters & power supply
06378	CRDR HED 109	Install new fatemeters & power supply
06378	WBP890396	Install new detector and components, loop 002
09840	N/A	Delete loops 235 & 236
10604	SCRWBNEEB8724	Condition A8 of SCRWBNEEB8724, documentation corrections only
23167	CRDR HED 89 & 93	Correct recorder scales
23169	WBP870870	Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674
23409	N/A	SSD for 0-RE-90-135
33616	N/A	Replace recorders 1-RR-90-1 and RR-90-12
RD1014511	WBPER940072	Purchase new RT-10, RT-11 calibrators
23167	WBSCA940032	Provide materials/instructions for transition from coax to single conductors
08858	WBP890492SCA	Replace coax cable for cable damage issue
08859	WBP890492SCA	Replace coax cable for cable damage issue
09153	WBP890492SCA	Replace coax cable for cable damage issue In WBRD 390,391/94-56 not a listed violation) Relocate 1-RE-90-7,61, and 0-RE-90-11 for optimum area radiation detection
35114	N/A	in WBKD 390,391794-59 not a listed violation relocate 1-RE-90-7,51, and 0-RE-90-11 to optimum area radiation detection Resolve ground loops (shield ties) (loops 2,59,60 only)
37566	F-24447	Delete 0.R.90-63
16544 06378	F-36399	Add keep alive source for 1-RE-90-2
00370	•	

Radiation Monitor:	Monitor Type:	、 .	adiation phitoring Deficiencies Impa	ear Plant 9 System (RMS) icting RMS		
2-RE-90-008 Monitor Description:	Area Aux Feedwater Pump Area Mo	Monitor Classi Tech Spec: No nitor	fication: ODCM: No	Reg. Guide 1.97: No	Safety Related: No	
TVA Deficiency: SCRWBNEEB8724 WBP870870 WBP890192 WBP890396 WBP890473P WBP910053 WBNEEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 89/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940032 WBPER940072 WBP890492SCA	Description of Deficiency: Condition A8 of SCRWBNEEB8724, docum Inductive kickback from RL-1, failure reset Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card change Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels (not a Recorder scales (applicable only to 2-RE-90-2 Recorder scales (applicable only to 1-RE-90-2 Undocumented method of transitioning from co RT-10, RT-11 calibrator documentation, SE co Replace coax cable for cable damage issue	e fit applicable to 0-RE-90-135) e fit applicable to 0-RE-90-135) 80, 2-RE-90-1,6,7,8,10) 16,7,8,10)		nnector termination		

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Design Change Notice: 02440 30312 06378 06378 06378 09840 10604 23167 23169 23409 33616 RD1014511 23167 08858 08859 0858 08859 08153 35114 37566 16544 06378	Related Deficiency: WBP870870 WBP890192 CRDR HED 109 WBP890396 N/A SCRWBNEEB8724 CRDR HED 89 & 93 WBP870870 N/A WBPER940072 WBSCA940032 WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA WBP890492SCA	Description of Design Changes/Field Modifications: Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 12674 PAM Upgrade (0-RE-90-135) Install new ratemeters & power supply Install new detector and components, loop 002 Delete loops 235 & 236 Condition A8 of SCRWBNEEB8724, documentation corrections only Correct recorder scales Add diode, alarm relay coil, RL-1 for 2-RI-90-7B,8B,10B, General Atomic Engineering Change Order 12674 SSD for 0-RE-90-136 Replace recorders 1-RR-90-1 and RR-90-12 Purchase new RT-10, RT-11 calibrators Provide materials/Instructions for transition from coax to single conductors Replace coax cable for cable damage issue Replace coax cable for cable damage iss
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### Watts Functional Unclear Plant Radiation Monitoring System (RMS) Deficiencies Impacting RMS

				Deficiencies Impa	acting RMS	
Area       No       No       No         Monitor Description:       CVCS Board Area Monitor         TVA Deficiency:       Description of Deficiency:         SCRWBNEEB8724       Condition A8 of SCRWBNEEB8724, documentation inconsistencies         WBP870370       Inductive kickback from RL-1, failure reset (not applicable to O-RE-90-135)         WBP890192       Undocumented ratemeter changes         WBP890396       Lack of calibration documentation         WBP890396       Lack of calibration for DPUE         WBP890396       Lack of rolation monitoring in CDWE         CDR HED 109       Radiation analyzer indicator light labels (not applicable to 0-RE-90-135)         CRDR HED 89/HEC 5253       Recorder scales (applicable to 1-RE-90-20, 2-RE-90-1, 6.7, 8, 10)	Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
No       No       No       No         Monitor Description:       CVCS Board Area Monitor         TVA Deficiency:       Description of Deficiency:         SCRWBNEEB8724       Condition A8 of SCRWBNEEB8724, documentation inconsistencies         MBP870870       Inductive kickback from RL-1, failure reset (not applicable to 0-RE-90-135)         WBP890192       Undocumented ratemeter changes         WBP890396       Lack of calibration documentation         WBP890473P       Unauthorized keep alive source in RD-1         WBP890473P       Unauthorized keep alive source card change fit         WBNEEB8553       Lack of radiation monitoring in CDWE         CDR HED 109       Radiation analyzer indicator light labels (not applicable to 0-RE-90-135)         CRDR HED 93       Recorder scales (applicable on 1-RE-90-280, 2-RE-90-1,6,7,8,10)	2-RE-90-010		Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
Monitor Description:Description of Deficiency:TVA Deficiency:Description of Deficiency:SCRWBNEEB8724Condition A8 of SCRWBNEEB8724, documentation inconsistenciesWBP870870Inductive kickback from RL-1, failure reset (not applicable to O-RE-90-135)WBP890192Undocumented ratemeter changesWBP890396Lack of calibration documentationWBP890473PUnauthorized keep alive source in RD-1WBP890473PUnauthorized keep alive source in RD-1WBNEEB8553Lack of load data23005-WBN-02Lack of radiation monitoring in CDWECDR HED 109Radiation analyzer indicator light labels (not applicable to 0-RE-90-135)CRDR HED 93Recorder scales (not applicable to 1-RE-90-280, 2-RE-90-1,6,7,8,10)CRDR HED 89/HEC 5253Recorder scales (applicable only to 2-RE-90-1,6,7,8,10)		Area	No	No	No	No
SCRWBNEEB8724Condition A8 of SCRWBNEEB8724, documentation inconsistenciesWBP870870Inductive kickback from RL-1, failure reset (not applicable to O-RE-90-135)WBP890192Undocumented ratemeter changesWBP89096Lack of calibration documentationWBP890473PUnauthorized keep alive source in RD-1WBP89053Vendor change, RD-1 electronics card change fitWBNEB8533Lack of radiation monitoring in CDWE2005-WBN-02Lack of radiation monitoring in CDWECRDR HED 89Recorder scales (not applicable to 1-RE-90-135)CRDR HED 93Recorder scales (not applicable to 1-RE-90-1,6,7,8,10)CRDR HED 89/HEC 5253Recorder scales (applicable only to 2-RE-90-1,6,7,8,10)	Monitor Description:	CVCS Board Area Monitor				
SCRWBNEEB8724Condition A8 of SCRWBNEEB8724, documentation inconsistenciesWBP870870Inductive kickback from RL-1, failure reset (not applicable to O-RE-90-135)WBP890192Undocumented ratemeter changesWBP890396Lack of calibration documentationWBP890473PUnauthorized keep alive source in RD-1WBP89053Vendor change, RD-1 electronics card change fit2005-WBN-02Lack of radiation monitoring in CDWECDR HED 109Radiation analyzer indicator light labels (not applicable to 0-RE-90-135)CRDR HED 93Recorder scales (not applicable to 1-RE-90-1,6,7,8,10)CRDR HED 89/HEC 5253Recorder scales (applicable only to 2-RE-90-1,6,7,8,10)	TVA Deficiency:	Description of Deficient	cv:			
WBSCA940032       Undocumented method of transitioning from coax to TSP, triax, or single conductor; inadequate WWK cable to connector termination         WBPER940072       RT-10, RT-11 calibrator documentation, SE calibration methods         WBP890492SCA       Replace coax cable for cable damage issue	WBP870870 WBP890192 WBP890396 WBP890473P WBP910053 WBNCEB8553 23005-WBN-02 CDR HED 109 CRDR HED 93 CRDR HED 93/HEC 5253 CRDR HED 89/HEC 5238 WBSCA940032 WBPER\$40072	Inductive kickback from RL-1, failure re Undocumented ratemeter changes Lack of calibration documentation Unauthorized keep alive source in RD-1 Vendor change, RD-1 electronics card c Lack of load data Lack of radiation monitoring in CDWE Radiation analyzer indicator light labels Recorder scales (not applicable to 1-RE Recorder scales (applicable only to 2-RE Recorder scales (applicable only to 1-RE Undocumented method of transitioning f RT-10, RT-11 calibrator documentation,	eset (not applicable to O-RE-90-135) hange fit (not applicable to 0-RE-90-135) 90-280, 2-RE-90-1,6,7,8,10) 5-90-280) rom coax to TSP, triax, or single cond SE calibration methods	, ductor; inadequate WWK cable t	o connector termination	·
					-	,
	Design Change Notice: 02440 30312 06378 06378 06378 09840 10604 23167 23169 23409 23409 33616 RD1007089 23167	Related Deficiency:           WBP870870           WBP890192           CRDR HED 109           WBP890396           N/A           SCRWBNEEB8724           CRDR HED 89 & 93           WBP870870           N/A           WBP870870           N/A           WBP870870           WA           WBPER940072           WBSCA940032           WBP80492SCA	Add diode, alarm relay co PAM Upgrade (0-RE-90- Install new ratemeters & Install new ratemeters & Install new detector and o Delete loops 235 & 236 Condition A8 of SCRWBI Correct recorder scales Add diode, alarm relay co SSD for 0-RE-90-135 Replace recorders 1-RR- Purchase new RT-10, RT Provide materials/instruct Replace coax cable for co	bil, RL-1, General Atomic En 135) power supply power supply components, loop 002 NEEB8724, documentation co bil, RL-1 for 2-RI-90-7B,8B,10 90-1 and RR-90-12 -11 calibrators tions for transition from coax 1 able damage issue	gineering Change Order 12674 orrections only B, General Atomic Engineering Change	Order 12674
02440WBP870870Add diode, alarm relay coil, RL-1, General Atomic Engineering Change Order 1267430312PAM Upgrade (0-RE-90-135)06378WBP89019206378CROR HED 10906378WBP89039605378WBP89039605378WBP89039605400N/A05401Delete loops 235 & 23610804SCRWBNEEB872405176CROR HED 89 & 9305176CROR HED 89 & 9305176WBP8708700516N/A0516N/A0516N/A0517SCRWBNEEB87240516Correct recorder scales23167WBP8708700516N/A0517WBP8708700516N/A0516N/A0516N/A0517WBP8708720516N/A0516N/A0516N/A0517WBPER9400720516WBPER9400720517WBSCA8400320516VBSCA8400320516WBSCA8400320517WBSCA8400320518Provide materials/instructions for transition from coax to single conductors0517WBSCA8400320517WBSCA8400320518Provide materials/instructions for transition from coax to single conductors	08859 09153 35114	WBP890492SCA WBP890492SCA N/A	Replace coax cable for ca Replace coax cable for ca	able damage issue able damage issue	e 1-RE-90-7,61, and 0-RE-90-11 for opti	mum area radiation detection

Watts Bucker Plant Radiation Mounoring System (RMS)

**Deficiencies Impacting RMS** 

			Deficiencies imp	bacting KMS		
<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classif	ication:			
2-RE-90-123	1 taula	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:	
	Liquid	No	No	No	No	
Monitor Description:	Component Cooling System Mo	onitor				
TVA Deficiency:	Description of Deficiency:					,
WBNEEB8724 R3 WBNEEB8724 R3 WBPER940601 WBP880272 WBP880273 WBP890396 WBNEEB8553 CRDR HED 40 CRDR HED 109 CRDR HED 109 CRDR HED 89/HEC 5252 WBPER940423 WBSCA940032 WBP880318	Condition A2 of WBNEEB8724, General sar Condition A8 of WBNEEB8724, documentat Doc errors Non-seismically qualified flow switch (0, 1-1 Non-seismically qualified flow switch (2-123) Undocumented changes to ratemeters Calibration documentation missing Lack of load data Nuisance alarm Radiation analyzer indicator light labels Recorder Scales General sample line deficiencies Coax to single conductor transition Noise problems	ion inconsistencies 23)				, , ,
W DF 600510						
Design Change Notice 06378 06378 06801 06973 09308	WBP890192 CRDR HED 109 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 , WBP880318	Install new ratemeters an Install new ratemeters an Condition A2 to WBNEE Condition A8 of WBNEE Condition A8 of WBNEE	nd power supply nd power supply B8724, replace inlet and out B8724, Sample line as cons B8724, Correct loop groundi	ng for single point ground, assure preamp	board per drawing configuration,	
10604 15423 15423 23235 23235 23167 33686 W-37566 S-36049	WBNEE8724 R3 WBP880272 WBP880273 N/A CRDR HED 89/HEC 5252 WBSCA940032 CRDR HED 40 WBPER940423 N/A WBPER940601	Resolves non-seismic flo Documentation correctio Correct vendor manual to Correct recorder scales Provide materials, instruc Block alarm when monito	w switch (documentation) ns resolves non-seismic flov o reflect optical grease stions for coax to single cond or not in use (cceptions in R4 of design cri s (1-123 only)	luctor transition	accumentation)	

	· · ·	R	Wa adiation Mitoring Deficiencies Impa		
<b>Radiation Monitor:</b>	Monitor Type:	Monitor Classif	•		
2-RE-90-400 2-LPF-90-400	Gas Sampler	<b>Tech Spec:</b> No	ODCM: Yes	<b>Reg. Guide 1.97:</b> Yes	Safety Related: No
Monitor Description:	Shield Building Vent Monitor				
TVA Deficiency: WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBP870728 WBP880409 WBP880409 WBP880396 WBNNEB8705 WBNNEB8709	Description of Deficiency: Condition A1 of WBNEEB8724, non-isokineti Condition A2 of WBNEEB8724, general samp Condition A8 of WBNEEB8724, documentatic Condition C of WBNEEB8724, sample line be Condition C of WBNEEB8724, Sample line be Missing pipe tubing caps Lack of mounting details for flow elements Air monitor isokinetic sample panels problems Calibration documentation missing Specific documentation discrepancies Particulate plateout concerns	ne routing problems n inconsistencies nd radius	esolved by corrective actions for	r SCRWBNEEB8724	
391/85-48-15 WBPER940107 WBPER940423 WBPER930458	Unit 2 shield building monitor required for unit Software error in RM-80 allows stack overflow General sample line deficiencies vs. design crit Calibration interval	/			
Design Change Notice: 02243(U1) 34155 1.RE-90-400 03451 03451 03451 03451 03451 03451 03451 03451	Related Deficiency: WBP880197 WBPER930458 WBNEEB8724 R3 WA WBP880197 WBP880409 WBP880409 WBP8903086 WBNNEB8705 391/85-48-15	Document mounting detai Correct flow element idemi Revise calculation to incre Condition A1 & A2, & A8, Condition C & E of WBNE Correct computer points o Install valves as required Install new cabling and win	ifiers ase calibration interval to 18 r Remove Eberline monitors 1, EB8724, Remove air monitor n control drawing ing as required	months 2-RE-90-400, 401, 402, 403 and install \ panels 1,2-L-398 & install new panels b	VRGM 1,2-RE-90-400,402. y Kurz
21619	N/A	Installs flow probes in Unit	1 and 2 Shield Building vents	5	
33276 35465 S-37549	WBPER940107 WBPER940423 WBPER940423 WBPER940601	Add insulation and heat tra Resolves general sample i	ine deficiencies or incorporate	e exceptions, design criteria WB-DC-40- adiation detection, sampling, and flow mo	24, R4 snitoring and control equipment
F-37489 S-37910	WBPER940601	Latest issue data base as Lower flow limits			
F-38210 F37490 (M3451) S-38097		Seismic restraints for spen Revise data base sensitivit Calc info output	y connection factors - Unit 1		
S-38268			TS be run if both containment p	urges are running (exceeds flow measuremen	t range)

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Wat Nuclear Plant Radiation toring System (RMS)

			Deficiencies Imp	acting RMS	
Radiation Monitor:	Monitor Type:	Monitor Classif	ication:		
2-RE-90-402	Coo Somelar	Tech Spec:	ODCM:	Reg. Guide 1.97:	Safety Related:
2-LPF-90-452	Gas Sampler	No	Yes	Yes	No
Monitor Description:	Shield Building Sample Cor	nditioning Skid			
TVA Deficiency:	<b>Description of Deficien</b>	ICV:			
WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBNEEB8724 R3 WBN7728 WB7850197 WB7880197 WB7880409 WBNNEB8709 WBNNEB8709 J91/85-48-15 WBPR940107 WBPER940423	Condition A1 of WBNEEB8724, non-i: Condition A2 of WBNEEB8724, cener Condition A8 of WBNEEB8724, decer Condition C of WBNEEB8724, sample Condition E of WBNEEB8724, sample Missing pipe tubing caps Lack of mounting details for flow elem Air monitor isokinetic sample panels pr Calibration documentation missing Specific documentation missing Specific documentation discrepancies Particulate plateout concerns Unit 2 shield building monitor required Software error in RM-80 allows stack of General sample line deficiencies vs. des	al sample line routing problems nentation inconsistencies line bend radius line bend radius ents oblems for unit 1	esolved by corrective actions fo	or SCRWBNEEB8724	· · ·

Design Change Notice:	<b>Related Deficiency:</b>	Description of Design Changes/Field Modifications:
02244(U2)	WBP880197	Document mounting details for flow elements
03451 03451	WBNEEB8724 R3 WBNEEB8724 R3	Condition A1 & A2, & A8, Remove Eberline monitors 1, 2-RE-90-400, 401, 402, 403 and install WRGM 1,2-RE-90-400,402. Condition C & E of WBNEEB8724, Remove air monitor panels 1,2-L-398 & install new panels by Kurz
03451 03451 03451 03451 03451	WBP880197 WBP880409 WBP890396 WBNNEB8705 391/85-48-15	Install valves as required Install new cabling and wiring as required
21619 33275	N/A WBPER940107	Installs flow probes in Unit 1 and 2 Shield Building vents Install new EPROMS, change software rev level, Unit 2
35465	WBPER940423 WBPER940423	Add insulation and heat trace Resolves general sample line deficiencies or incorporate exceptions, design criteria WB-DC-40-24, R4
S-37549	WBPER940601	Revise WB-DC-40-24 to allow seismic class 1(L)B for radiation detection, sampling, and flow monitoring and control equipment
F-37489 S-37910	WBPER940601	Latest issue data base as of 7/21/95 Unit 2 Lower flow limits
F-38210		Seismic restraints for spent filters
F37489 (M3450) S-38097 S-38268 S-36049	. · · ·	Revise data base sensitivity connection factors - Unit 2 Calc info output Limit fan operation to no ABGTS be run if both containment purges are running (exceeds flow measurement range) Verify safety class in EMS

# Attachment 2

# Resolution of Engineering Assessment Items

Monitor	Issue	Track/Resolved	Status
1-RE-90-106	Drawing shows ball & plug valves as gate or globe valves	WBPER940601 DCN S-36049-A	Closed
1-RE-90-112		WBPER940601	Closed
1-RE-90-112	Drawing shows ball & plug valves as gate or globe valves	DCN S-36049-A	Closed
1-RE-90-119	Drawing shows ball & plug valves	WBPER940601	Closed
	as gate or globe valves	DCN S-36049-A	
1-RE-90-120	Drawing shows ball & plug valves	No change	Closed
	as gate or globe valves		
0,1,2-RE-90-123	Drawing shows ball & plug valves	WBPER940601	Closed
	as gate or globe valves	DCN S-36049-A	
0-RE-90-133,	Drawing shows ball & plug valves	WBPER940601	Closed
134,140,141	as gate or globe valves	DCN S-36049-A	
0-RE-90-212	Drawing shows ball & plug valves	WBPER940601	Closed
	as gate or globe valves	DCN S-36049-A	
0-RE-90-225	Drawing shows ball & plug valves	WBPER940601	Closed
	as gate or globe valves	DCN S-36049-A	
0-RE-90-101	Model Numbers for B & C channel	WBPER940601	Closed
	swapped in vendor manual	VR-1698	
0-RE-90-101	Rate meter tag # are detector	WBPER940601	Closed
	model #	DCN not	
· · ·		required	
		EMS corrected	
0-RE-90-132	Model Numbers for B & C channel	WBPER940601	Closed
	swapped in vendor manual	VR-1698	
0-RE-90-132	Rate meter tag # are detector	WBPER940601	Closed
0 111 30 102	model #	DCN not	010000
		required	
		EMS corrected	
1,2-RE-90-400	Safety class not verified in EMS	WBPER940601	Closed
172 1130 100	for 2-400	DCN S-36049-A	010500
1,2-RE-90-402	Safety class not verified in EMS	WBPER940601	Closed
1,2 11 90 402 .	for 2-402	DCN S-36049-A	
0-RE-90-101	Skid seismic category doesn't	WBPER940601	Closed
0-RE-90-101	match process duct in EMS	DCN S-37549-A	CIUSEU
0-RE-90-122	Skid seismic category doesn't	WBPER940601	Closed
0-RE-90-122	· · · ·	DCN S-37549-A	CIUSEU
0,1,2-RE-90-123	match process pipe in EMS	WBPER940601	Clease
0,1,2-RE-90-123	Skid seismic category doesn't match process pipe in EMS	DCN S-37549-A	Closed
0-RE-90-101	Revise Aux Building HVAC Sys.	WBPER940601	Closed
	Description to delete auto	DCN S-37549-A	010500
	isolation on signal from this		
	monitor		
0-RE-90-101	Revise 1-47W610-90-3 for alarm	Was already	Closed
O VE DO TOT	TCATPE I HIMOTO DO DI TOT GTGTW	done	CTOPED
		DCN 21861 DCA	
		1	
1 55 00 100		34	
1-RE-90-129	Operator aid to adjust sampler	WBPER940601	Closèd
	flow to vacuum exhaust flow rate	DCN F-37909-A	}

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Monitor	Description	Completed	Status
1-RE-90-112	Revise particulate sensitivity in Table 11.4-2 & in Tech Specs - TVA determined no change required in FSAR orTech	No change required	Closed
1.57.00.110	Spec.		
1-RE-90-112	Revise FSAR to show range was determined at vendor specified background	FSAR Amendment 89 Submitted 5/16/95	Closed
1-RE-90-112	Revise FSAR Table 11.4-2 Footnote on background	FSAR Amendment 89 Submitted 5/16/95	Closed
1-RE-90-112	Delete requirement for Radcon coverage - Section 3.9 of DC	WB-DC-40-24 R4 Issued 4/28/95	Closed
1-RE-90-106	Revise particulate sensitivity in FSAR Table 11.4-2 & in Tech Specs - TVA determined no change required in FSAR or Tech Spec.	No change required.	Closed
1-RE-90-106	Revise FSAR to show range was determined at vendor specified background	FSAR Amendment 89 Submitted 5/16/95	Closed
1-RE-90-106	Revise FSAR Table 11.4-2 Footnote on background	FSAR Amendment 89 Submitted 5/16/95	Closed
1-RE-90-106	Delete requirement for Radcon coverage - Section 3.9 of DC - same as 3	WB-DC-40-24 R4 Issued 4/28/95	Closed
1-RE-90-101	Generate calculation to show monitor can detect 10 DAC ; Revise I&C calc 0-RE-90-101 to correct function and provide demonstrated accuracy for iodine to 10 DAC	WBNTSR-103 R0 B26 950421 363 O-RE-90-101 R2 B26 950610 320	Closed
1-RE-90-101	same as item 9	same as item 9	Closed
1-RE-90-400	Revise NUREG-0737 submittal to reflect latest values from WBNAPS3-048 calc on range - TROI Items NUREG 0737 II.F.1.2A	T04 950616 151	Closed
1-RE-90-400	same as 11	same as item 11	Closed
1-RE-90-400	Delete requirement for pressure compensation in DC	WB-DC-40-24 R4 Issued 4/28/95	Closed
1-RE-90-400	Ensure DC does not require a root valve for this monitor	WB-DC-40-24 R4 Issued 4/28/95	Closed
1-RE-90-400	Revise DC to allow the use of flareless compression fittings	WB-DC-40-24 R4 Issued 4/28/95	Closed
1-RE-90-400	Revise DC to eliminate requirement for condensate pots; sample lines being heat traced	WB-DC-40-24 R4 Issued 4/28/95	Closed

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1-RE-90-402	Ensure DC does not require a	WB-DC-40-24 R4 Issued 4/28/95	Closed
1 77 00 100	root valve for this monitor		Closed
1-RE-90-402	Revise DC to eliminate	WB-DC-40-24 R4	CTosed
	requirement for condensate	Issued 4/28/95	
	pots; sample lines being heat		
1 55 00 000	traced	<b>TO</b> 1 050616 151	
1-RE-90-099	Revise 0737 submittal to	T04 950616 151	Closed
	reflect elimination of the		
	monitor - In TROI - Item		
1	NUREG 0737 II.F.1.2A		
1-RE-90-099	Delete reference in FSAR that	FSAR Amendment	Closed
	sample lines in the turbine	89 Submitted	
	building are seismic	5/16/95	
1-RE-90-119	Revise DC to allow the use of	WB-DC-40-24 R4	Closed
·	LED check sources	Issued 4/28/95	
1-RE-90-119	Delete reference in FSAR that	FSAR Amendment	Closed
	sample lines in the turbine	89 Submitted	
	building are seismic	5/16/95	
1,2-RE-90-	Revise ranges in FSAR, RG	FSAR Amendment	Closed
404	1.97, and 0737 submittal to	89 Submitted	
	match WBNAPS3-048 - In TROI -	5/16/95	
	Item NUREG 0737 II.F.1.2A	т04 950616 151	
1,2-RE-90-	Revise DC to allow the use of	WB-DC-40-24 R4	Closed
404	turbine building ambient air	Issued 4/28/95	Í
	for purge		
1,2-RE-90-	Delete reference in FSAR that	FSAR Amendment	Closed
404	sample lines in the turbine	89 Submitted	
	building are seismic	5/16/95	
0-RE-90-125	Revise WBNTSR-028 and FSAR to	FSAR Amendment	Closed
& 126	match on required range	89 Submitted	
		5/16/95	
		WBNTSR-028 R1	
	· · · · · · · · · · · · · · · · · · ·	B26 950214 396	
0-RE-90-125	Revise DC to allow	WB-DC-40-24 R4	Closed
& 126	nonisokinetic sampling for	Issued 4/28/95	
	non-particulate monitors		
0-RE-90-205	Revise WBNTSR-028 and FSAR to	FSAR Amendment	Closed
& 206	match on required range	89 Submitted	
		5/16/95	
		WBNTSR-028 R1	
		B26 950214 396	
0-RE-90-205	Revise DC to allow	WB-DC-40-24 R4	Closed
& 206	nonisokinetic sampling for	Issued 4/28/95	1
	non-particulate monitors		
1-RE-90-130	Revise WBNTSR-038 required	WBNTSR-038 R5	Closed
& 131	range	B25 950303 360	ļ
0-RE-90-013	Rename monitor to reflect	FSAR Amendment	Closed
	location in shipping bay	89 Submitted	1
		5/16/95	
1	· · ·	WB-DC-40-24 R4	1

		······································	
0-RE-90-138	Rename as "Waste Packaging	FSAR Amendment	Closed
	Room Monitor" in DC & FSAR	89 Submitted	
	· ·	5/16/95	
		WB-DC-40-24 R4	
		Issued 4/28/95	
0-RE-90-118	Revise DC to specify that	WB-DC-40-24 R4	Closed
	locally is at the Waste Gas	Issued 4/28/95	
	Panel (0-L-2)		
1,2-RE-90-	Revise FSAR to delete 1-RE-90-	FSAR Amendment	Closed
120/121	124 - TVA decided to retain	89 Submitted	
·	the 1 gpm leak rate capability	5/16/95	
1,2-RE-90-	WBNTSR-066 was revised	WBNTSR-066 R4	Closed
120/121	<u> </u>	B26 950307 384	
1,2-RE-90-	Revise DC to delete	WB-DC-40-24 R4	Closed
120/121	requirement that all	Issued 4/28/95	
	components be stainless steel		
1,2-RE-90-	Revise DC discussion on	WB-DC-40-24 R4	Closed
120/121	draining the liquid monitor	,Issued 4/28/95	
	skids		
1,2-RE-90-	Remove monitor from DC and	Has to stay in	Closed
124	FSAR - Removed from DC and	FSAR	
	FSAR for unit 1. Unit 2 has	WB-DC-40-24 R4	
	to stay in FSAR	Issued 4/28/95	
0-RE-90-122	Clarify range values in FSAR	FSAR Amendment	Closed
		89 Submitted	
¥1		5/16/95	
0-RE-90-122	Revise FSAR to show background	FSAR Amendment	Closed
	at which range was determined	89 Submitted	
		5/16/95	
0-RE-90-122	Add discussion in DC on low	WB-DC-40-24 R4	Closed
	flow alarm	Issued 4/28/95	
0,1,2-RE-90-	Revise DC to clarify that	WB-DC-40-24 R4	Closed
123	these monitors do not have	Issued 4/28/95	
	sample pumps		
0,1,2-RE-90-	Revise required range calc	WBNTSR-042 R	Closed
123	WBNTSR-042 to establish a	· · ·	
	lower maximum range		}
0,1,2-RE-90-	Revise DC to clarify that	WB-DC-40-24 R4	Closed
123	these monitors do not have	Issued 4/28/95	
	sample pumps		1
0,1,2-RE-90-	Revise DC to allow the use of	WB-DC-40-24 R4	Closed
123	globe valves as root valves	Issued 4/28/95	
0,1,2-RE-90-	Revise DC to delete	WB-DC-40-24 R4	Closed
123	requirement that all	Issued 4/28/95	1 I
	components be stainless steel		
0-RE-90-225	Revise DC to allow the use of	WB-DC-40-24 R4	Closed
	globe valves as root valves	Issued 4/28/95	
0-RE-90-225	Revise DC to delete	WB-DC-40-24 R4	Closed
	requirement that all	Issued 4/28/95	
	components be stainless steel		
L	Town on the set statutess steet	L.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	L

0-RE-90-212	Change monitor name from	Not Changed	Closed
	Turbine Bld Sump to Station		
	Sump - Not changed -no		
	technical content		
0-RE-90-212	Revise DC to show TSC computer	WB-DC-40-24 R4	Closed
	is used	Issued 4/28/95	
0-RE-90-212	Revise DC to allow the use of	WB-DC-40-24 R4	Closed
	globe valves as root valves	Issued 4/28/95	
0-RE-90-212	Revise DC to delete	WB-DC-40-24 R4	Closed
	requirement that all	Issued 4/28/95	
	components be stainless steel		
0-RE-90-211	Revise FSAR & DC - monitor	FSAR Amendment	Closed
	removed from plant design	89 Submitted	
		5/16/95	
		WB-DC-40-24 R4	
	· .	Issued 4/28/95	
0-RE-90-	Revise DC to remove "operate	WB-DC-40-24 R4	Closed
133/134 &	during and after an accident"	Issued 4/28/95	*
140/141	invoke RG 1.97 requirements		
0-RE-90-	Revise DC to allow the use of	WB-DC-40-24 R4	Closed
133/134 &	globe valves as root valves	Issued 4/28/95	
140/141			
0-RE-90-	Revise DC to delete	WB-DC-40-24 R4	Closed
133/134 &	requirement that all	Issued 4/28/95	
140/141	components be stainless steel		
1-RE-90-280	Change name to "Post Accident	FSAR Amendment	Closed
	Sampling Room Area Monitor	89 Submitted	
		5/16/95	
		WB-DC-40-24 R4	
,		Issued 4/28/95	
0-RE-90-102	Need location specific calc	WBNTSR-104 R0	Closed
& 103	issued	B26 950414 354	



# ENCLOSURE 1 ATTACHMENT 2 TABLE 3 · STATUS OF OBSERVATIONS

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Monitor	Issue	Resolution	Status
0-RE-90-101-	Valve ISIV-90-101F is shown on dwg 1-47W610-90-3 R13. DD 9400124 was issued to remove the sample line root valve from the drawing. The sample panel can be isolated. Therefore the absence of a root valve is acceptable. Eight	No work required	Closed
0-RE-90-132	revisions of 1-47W610-90-3 have been issued without incorporating the DD. Many of the values used by Calc.	TI-18 is no	Closed
	WBNTSR-037 R0, come for procedure TI-18, which is on administrative hold.	longer on hold.	
1,2-RE-90-400	Model numbers not listed in EMS. Vendor manual is not issued yet. Available in RIMS only. Will be fixed by closure of DCNs 3450 & 3451	Documents updated as required by TVA Procedures.	Closed
1,2-RE-90-400	Vendor drawing 0403-5010 Rev B has a typo. An E-2 should be E+2	Vendor informed of typo	Closed
1,2-RE-90-400	Drawing 1-47W610-90-5 should be as built as soon as possible due to numerous changes and poor quality of the microfilm	Drawing is now CCD since completion of DCNs 3450 & 3451.	Closed
1,2-RE-90-400	Change EQ status from "Yes" to "No" in Reg Guide 1.97 response for items located in mild environments.	Changes not made. Inconsistent with TVA program.	Closed
1,2-RE-90-400	Ensure that maintenance is aware that detector correction factors are required.	Information provided in SSDs	Closed
1,2-RE-90-402	Vendor manual is in RIMS but has not been issued as an approved vendor manual. EMS does not list the vendor manual number. Model number information isn EMS is for the old monitors which were remvoed by DCNs 3450 & 3451. This will be corrected when the DCNs are closed	DCNs were open when this observation was made. Manual approved and EMS updated as part of DCN closure.	Closed
1,2-RE-90-402	A demonstrated accuracy calculation is not required. However, it is necessary to provide Chemistry with the results of Rev 3 to calculation WBNTSR-060.	Chemistry was provided with the calc results via WBNTSR-107.	Closed
2-RE-90-402	Safety class for 2-RE-90-402 is not verified in EMS.	WBPER940601 DCN S-36049-A	Closed

### ENCLOSURE 1 ATTACHMENT 2 TABLE 3 STATUS OF OBSERVATIONS

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	2-RE-90-402	Verify lead lined storage box for particulate filters and iodine cartridges is installed. Box is portable and Chemistry has box.	Chemistry put box in room.	Closed
	1,2-RE-90-119	Change EQ status from "Yes" to "No" in Reg Guide 1.97 response for items located in mild environments.	Changes not made. Inconsistent with TVA program.	Closed
	1,2-RE-90-119	Typo in ODCM Table 1.1-2	Typo corrected	Closed
	1,2-RE-90-129	Provide Chemistry with the results of Rev 3 to calculation WBNTSR-060.	Chemistry was given the results of the calculation via WBNTSR-107.	Closed
	1,2-RE-90-404	DD 9100021 tried to add the background detector to as designed dwg. 47W610-90-5. Background is part of the standard Eberline NGP-1 design. Since the signal is available consideration should be given to utilizing it.	Background is not required to be used by SSDs.	Closed
	1,2-RE-90-404	Purge capability is by manual action of the operator to manually realign sample line valves. Ususally, purge capability is provided by push button or switch action. The existing configuration is acceptable but requires manual operator action at the sample lines.	No action needed.	Closed
	0-RE-90-125, 126	Procurement requisition W 8375 must be awarded and report approved to test Unit 2 recorders to seismic criteria.	WBPER940279 was tracking this issue. Contract 141254 EX-WB-DC-30-4- 37 (T2995 0721 837)	Closed
	0-RE-90-205, 206	Procurement requisition W 8375 must be awarded and report approved to test Unit 2 recorders to seismic criteria.	WBPER940279 was tracking this issue. Contract 141254 EX-WB-DC-30-4- 37 (T2995 0721 837)	Closed

# ENCLOSURE 1 ATTACHMENT 2 TABLE 3 STATUS OF OBSERVATIONS

1-RE-90-012	Manufacturers sensitivity report is being ordered for addition to RIMS via 2652. This applies to all Sorrento monitors purchased under PO 92759 and its supplements	Sorrento provided report (T41 951101 800)	Closed
0-RE-90-122	Operator procedures should note that a release can be terminated (RCV-77-43 closed) due to a sample flow fault without an alarm in the MCR	No change required Release is monitored by Chemistry	Closed
0-RE-90-133	The skid power feed for 0-RE-90-133 and 1-RE-90-106 should be rewired to separate breakers	Not changed. Monitors individually fused and no requirement was violated.	Closed
0-RE-90-133	Procurement requisition W 8375 must be awarded and report approved to test Unit 2 recorders to seismic criteria.	WBPER940279 was tracking this issue. Contract 141254 EX-WB-DC-30-4- 37 (T2995 0721 837)	Closed
0-RE-90-133, -134, -140, - 141	Change EQ status from "Yes" to "No" in Reg Guide 1.97 response for items located in mild environments.	Changes not made. Inconsistent with TVA program.	Closed
1-RE-90-421, -422, -423, - 424	For the RE: RD-11 the environmental temperature exceeds that qualification temperature. Tracked by WBPER940601	DCN F-33273 abandoned low range detector	Closed
1-RE-90-277, 278	These monitors are not important to safety, so the detectors are acceptable per requirements for non-safety equipment in WB-DC-40-24 R4.	required.	Closed
1-RE-90-275, 276	These monitors are not important to safety, so the detectors are acceptable per requirements for non-safety equipment in WB-DC-40-24 R4.	No action required.	Closed
1-RE-90-290, 292	These monitors are not important to safety, so the detectors are acceptable per requirements for non-safety equipment in WB-DC-40-24 R4.	No action required.	Closed

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### Enclosure 2 Watts Bar Nuclear Plant (WBN) Unit 1 Radiation Monitoring System Assessment

#### Post-fuel Load Activities

#### Information Requested:

For monitors which fulfill Technical Specification, Offsite Dose Calculation Manual (ODCM), and Regulatory Guide (RG) 1.97 requirements, describe the availability (time in-service) of the monitors since receipt of a low power license.

#### Response:

TVA's letter dated January 22, 1996, provided cumulative average availabilities since fuel load for the RMS as a whole and for the Technical Specification and ODCM monitors. The tables contained in Attachment 1 and listed below, provide related information for each individual monitor, showing the function of the monitor, the percent availability and, where appropriate, a discussion of work activities on the monitors which affected its availability. Graphical representations of this data are also provided in Attachment 1 as follows.

Table 1. System 90 Availability by Monitor.

Table 2. System 90 Out of Service Trend by Subsystem.

Graph 1. Radiation Monitoring System Availability.

Graph 2. Technical Specification Monitor Availability.

Graph 3. ODCM Monitor Availability.

Table 3. System 90 Out of Service Trend, Chronologically by Workorder.

#### Information Requested:

For key organizations such as Operations, Maintenance, Radiological Control, and Chemistry, describe the specific training that has been provided which will help ensure that the RMS is operated and maintained in accordance with TVA procedures and NRC regulations.

#### Response:

Training has been established to ensure that personnel required to perform tasks involving the RMS have the skills and understanding necessary to perform their tasks correctly. Continuing training modules for key departments have been revised and augmented.

Operations, Maintenance, Radiological Controls and Chemistry Training Programs are accredited by the National Academy for Nuclear Training and use the Systematic Approach to Training (SAT) for analysis, design, development, implementation and evaluation. The SAT process which is used for the evaluation of the training programs was applied to the DCNs associated with the RMS. A review of each of the design changes included a comparison to existing tasks and training materials. Necessary training tasks are added or revised. Training materials are developed or revised and training is conducted to ensure that sufficient personnel are qualified for plant operations. Additional training will be held to enhance existing training and to increase the number of qualified technicians.

#### Operations Department

The classroom training lesson plans for licensed and non-licensed Operators were reviewed and revised in November 1995 to ensure that the latest RMS design changes, e.g., latest Shield Building Vent Monitor equipment, addition of annunciator and trip block functions, and changes to interlock functions, are understood by operators. The accuracy of information presented in the lesson plan was confirmed and the level of discussion was increased to provide additional assurance that operation of monitor controls at both the monitor enclosure and the main control panel will be performed correctly. Normal indications, valid alarm conditions as well as potential false indications due to equipment failure are stressed. Available methods for collecting data on the newest digital radiation monitoring equipment were presented to familiarize operators with actions performed by other personnel.

Training of Operator crews including Shift Operation Supervisors, Licensed Reactor Operators and Assistant Unit Operators was conducted using the revised lesson plan 3-OT-SYS-090A. This training was conducted over six days from December 12-20, 1995, and consisted of six and one-half hours of presentation and discussions with the RMS engineer who was present on all but one day.

On-the-job certifications (qualification cards focusing on Radiation Monitoring tasks) have been developed for all operators. Qualification card certification is in process.

#### Radiological Control (RADCON) Department

Enhanced radiation monitoring training was provided for RADCON Technicians in several areas.

Classroom training was performed to enhance RADCON Technician knowledge and understanding of the RMS. The following continuing training classes have been conducted:

RMS (HPT307.016) - Eight-hour classes focusing on the functions, auto system responses, alarm response and location of RMS components.

Auxiliary Building Ventilation System (HPT307.025) - Four-hour classes on the design basis, component location and interface with the RMS.

Reactor building Purge Ventilation System (HPT 307.026) -Four-hour classes on purpose, component location and interface with the RMS.

Radiation Control Technician training includes qualification on six tasks for Continuous Air Monitors (CAMs). These tasks included:

- Change filters in CAMs
- Change filter paper in CAMs
- Verify operation of CAMs
- Conduct performance tests of CAMs
- Change chart paper in CAMs
- Respond to CAM alarms

#### Instrument & Controls (I&C) Maintenance Department

I&C training program contains formal classroom training which includes training on RMS. Training includes the following:

- Initial apprentice program
- Senior Instrument Mechanic (SIM) program
- Continuing and specialized program

Approximately 30 job training specific tasks (qualification cards) which are focused on Radiation Monitoring have been developed and implemented. This effort has ensured that qualified personnel are available to perform each radiation monitoring task.

The core I&C Maintenance crew for RMS includes the following: '

- Radiation monitoring qualified technicians which have obtained special knowledge from vendor interface, system engineers, and equipment installation
- Both classroom training and on-job Qualification Cards are utilized

#### Chemistry Department

Training provided for Count Room Radiochemical Laboratory Analysts (RLAs) involved with effluent permitting included required initial training and specific qualification tasks as well as recently completed enhanced training. Training is complete for personnel currently at WBN.

Original Required Training:

- Classroom training using RMS Module 305.205: includes comprehensive treatment of WBN radiation monitors, their design, locations, instrumentation and controls, and sampling techniques.
- Qualification Card Tasks for Count Room RLAs on tasks involved with effluent permitting.

Enhanced Recent Training:

- Discussion sessions with Count Room RLAs to thoroughly familiarize them with the practices included in new WBN procedure PAI-5.04, "Installed Radiation Monitoring Program."
- Group department meetings with Count Room RLAs to review WBN experience with radiation monitoring problems, e.g., interface with Operations, monitoring deficiencies, etc.
- Chemistry management field observations were performed for Count Room RLAs during the performance of specific System 90 tasks.
- Enhanced Radiation Monitoring training provided for Radio-Chemical Laboratory Analysts.

• Classroom training using RMS Module 305.205.

#### System Engineer

The System Engineer (SE) with oversight for the RMS has completed in-house Engineering Support Personnel Training and additional vendor-supplied training. The SEs additional qualifications include 10 years of experience as the WBN RMS engineer as well as vendor certification on the Sorrento Electronics Wide Range Gas Monitor. The SEs competence on Radiation Monitoring was demonstrated by completion of position specific training in accordance with ESP 310.000, "System Engineering Qualification Standard."

#### Information Requested:

Describe the methods through which conformance to the requirements of RG 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," are assured with respect to the process which compares effluent monitor readings with grab samples.

#### Response:

Consistent with the guidance provided in Revision 1 of RG 1.21, site procedures require a routine comparison of effluent radiation monitor readings to laboratory analysis of effluent samples to be performed. This comparison is made to determine the degree of correlation between these diverse measurements thus ensuring the validity of monitor calibrations while allowing early detection of component failure or calibration drift. Review and analysis of results are performed by the Chemistry and Technical Support organization to identify and evaluate disagreements. Chemistry Department and Technical Support instructions implement the following activities to ensure that this objective is met:

- Radiation monitor readings of radioactive noble gas and radioactive liquid releases will be recorded at the time samples of the monitored process are collected.
- Determination of expected monitor response will be made when process activities are sufficient to allow meaningful analysis. This determination will be based upon analysis of the measurement data taken on the collected sample and the detector calibration curve established during initial or primary calibration.
- Comparison of expected monitor response to actual monitor response will be made to establish the degree of agreement for further evaluation.

- Evaluation of disagreement against design-required instrument accuracy for the radiation monitor will be made to determine if monitor performance is acceptable. Investigation of the cause and initiation of corrective actions will be made if unacceptable results are identified.
- Trending of comparison data will be performed and results addressed in periodic system status reports. Trend data will be used to establish normal or expected monitor performance which can then be used to identify changes in plant performance allowing early evaluation of these changes.

#### Information Requested:

Provide a discussion of the program that supports the availability of spare parts to maintain the system.

#### Response:

The WBN Critical Spares Program establishes both minimum inventory and re-order spare part quantities based on vendor recommendations and plant maintenance data. Once finalized, access to the Bill of Materials (BOMs) will be through the Equipment Management System (EMS).

To date, the identification and purchase of RMS spare parts has resulted in BOMs being completed for 60 manufacturer/model types included in the RMS spare parts scope. Examples of the completed BOMs are included in Attachment 2 to this enclosure. The 60 completed represent 220 plant sub-components. For these components, there are currently 393 line items in inventory with established reorder points (ROP) and reorder quantities (ROQ). There are an additional 27 line items on order, with established delivery dates.

Since turnover of the system to plant Operations, the unavailability of spare parts has not been an issue in maintaining and repairing RMS equipment. The actions discussed above regarding the Critical Spares Program will enhance the maintenance of the system and ensure that needed replacement components are available.

## Attachment 1

## Radiation Monitor Availability

TABLE 1 SYSTEM 90 AVAILABILITY (BY MONITOR)

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## SYSTEM 90 AVAILABILITY

(11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	% Available	% Not Available	Work Description
System 90A AREA Monitors	6 TS/ 0 ODCM	99.46%	0.54%	
0-LPR-90-3 Waste Package Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
0-LPR-90-4 Decon Room Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
O-LPR-90-5 Spent Fuel Pit Pmps Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
0-LPR-90-9 Waste Evap Cond Tank Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	<u>^ 0%</u>	
O-LPR-90-11 Cntmt Spray RHR Pmp Rm Area Mon (1.0E-1 to 1.0E+4 MRH)		85.59%	14.41%	<ul> <li>Broken pin in detector cannon connector plug.</li> <li>Tindicator replacement. (1)</li> </ul>
0-LPR-90-102 Fuel Pool Area Mon (1.0E-1 to 1.0E+4 MRH)	Tech Spec	95.95%	4.05%	<ul> <li>Detector was high pressure washed causing failure.</li> <li>Channel recorder repair and adjustment. (2)</li> </ul>
0-LPR-90-103 Fuel Pool Area Monitor (1.CE-1 to 1.CE+4 MRH)	Tech Spec	100%	0%	
0-LPR-90-135 Main Cntrl Rm Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	«
0-LPR-90-230 Condensate Demin Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
0-LPR-90-231 Condensate Demin Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
1-LPR-90-1 Spent Fuel Pit Pmps Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	

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# SYSTEM 90 AVAILABILITY (11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	% Available	% Not Available	Work Description
1-LPR-90-2 Personnel Lock Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
1-LPR-90-6 Comp Cool Wtr Ht Exch Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
1-LPR-90-7 Hot smpl Rm Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
1-LPR-90-8 Aux Fdwtr Fmps Area Mon (1.CE-1 to 1.CE+4 MRH)		100%	0%	
1-LPR-90-10 CVCS Brd Area Mon (1.CE-1 to 1.CE+4 MRH)		100%	0%	
1-LPR-90-59 RCB UP Comp Area Mon (1.05-1 to 1.05+4 MRH)		100%	0%	
1-LPR-90-60 RCB UP Comp Area Mon (1.0E-1 to 1.0E+4 MRH)	,	100%	0%	
1-LPR-90-61 RCB Low Comp Area Mon (1.05-1 to 1.05-4 MRH)		100%	0%	
1-LPR-90-271 RCE UD Comp Post Acc Area Mon (1.05+0 to 1.05+8 RH)	Tech Spec	100%	0%	
1-LPR-90-272 RCB Up Comp Post Acc Area Mon (1.02+0 to 1.02+8 RH)	Tech Spec	100%	0%	
1-LPR-90-273 RCB Low Comp Post Acc Area Mon (1.0E+0 to 1.0E+8 RH)	Tech Spec	100%	0%	



# SYSTEM 90 AVAILABILITY (11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	¥ Available	% Not Available	Work Description
1-LPR-90-274 RCB Low Comp Post Acc Area Mon (1.02+0 to 1.02+8 RH)	Tech Spec	100%	0%	
1-LPR-90-275 Reactor Cool Dn Tk Area Mon (1.08+0 to 1.08+5 MRH)		100%	0%	
1-LPR-90-276 Peactor Cool Dn Tk Area Mon (1.05+0 to 1.05+5 MRH)		100%	0%	
1-LPR-90-277 Reactor Blbg Fl & Equip Drn Sump Area Mon (1.05-0 to 1.05+5 MRH)		100%	0%	
1-LPR-90-278 Reactor Blbg Fl & Equip Drn Sump Area Mon (1.05+0 to 1.02+5 MRH)		100%	0%	
1-LPR-90-280 Post Acc Smpl Pm Area Mon (1.05+0 to 1.02+5 MRH)		100%	0%	
1-LPR-90-290 RHR Post Acc Area Mon (1.05-1 to 1.05+4 MRH)		100%	0%	
1-LPR-90-291 EHF Post Acc Area Mon (1.05+3 to 1.05+11 MRH)		100%	0%	
1-LPR-90-292 RHR Post Acc Area Mon (1.CE-1 to 1.0E+4 MRH)		100%	0%	
1-LPR-90-293 RHR Post Acc Area Mon (1.06+3 to 1.05+11 MRH)		100%	08	
2-LPR-90-1 Spent Fuel Pit Pmps Area Mon (1.CE-1 to 1.CE+4 MRH)		98.65%	1.35%	<ul> <li>Low background</li> <li>Replace indicator.(1)</li> </ul>



## SYSTEM 90 AVAILABILITY

(11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	% Available	% Not Available	Work Description
2-LPR-90-6 Comp Cool Wtr Ht Exch Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
2-LPR-90-7 Hot Smpl Rm Area Mon (1.05-1 to 1.05+4 MRH)		100%	0%	
2-LPR-90-8 Aux Fdwtr Pmps Area Mon (1.0E-1 to 1.0E+4 MRH)		100%	0%	
2-LPR-90-10 CVCS Brd Area Mon (1.0E-1 to 1.0E+4 MRH)	<u>.</u>	100%	0%	
System 90B LIQUID Monitors	0 TS 7 ODCM	98.74%	1.26%	
0-LPR-90-122 Wat Diap Sys Lig Eff Mon (1.CE+1 to 1.CE+7 CPM)	ODCM	100%	0	
0-LPR-90-123 CCS Lig Eff Mon (1.0E+1 to 1.0E+7 CPM)		100%	0%	
0-LPR-90-133 ERCW Lig Eff Mon (1.06+1 to 1.06+7 CPM)	ODCM	100%	0%	
0-LPR-90-134 ERCW Lig Eff Mon (1.66+1 to 1.66+7 CPM)	ODCM	100%	0%	
0-LPR-90-140 ERCW Lig Eff Mon (1.06+1 to 1.06+7 CFM)	ODCM	100%	0%	
0-LPR-90-141 ERCW Lig Eff Mon (1.05+1 to 1.05+7 CPM)	ODCM	100%	08	



# SYSTEM 90 AVAILABILITY (11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	% Available	% Not Available	Work Description
0-LPR-90-212 Sta Sump Disc Lig Eff Mon (1.0E+1 to 1.0E+7 CPM)	ODCM	87.39%	12.61%	<ul> <li>Indicator replacement. (1)</li> <li>Low HI RAD setpoint</li> <li>Trash in sample lines.</li> </ul>
0-LPR-90-225 Condensate Demin Lig Eff Mon (1.05+1 to 1.05+7 CPM)	ODCM	100%	0%	
1-LPR-90-123 CCS Lig Eff Mon (1.0E+1 to 1.0E+7 CPM)		100%	08	
2-LPR-90-123 ccs Lig Eff Mon (1.cE+1 to 1.0E+7 CPM)		100%	0%	
System 90C SAMPLE Monitors	0 TS 3 ODCM	92.74%	7.26%	
0-LPF-90-300 Aux Bldg Isokinetic Mon <i>Gio Detector, Flow Only</i>	ODCM	89.19%	10.81%	<ul> <li>Motor failure.(3)</li> <li>Flow Controller malfunction.</li> </ul>
0-LPF-90-320 Ser: Bldg Isokinetic Mon (No Detector, Flow Only)	ODCM	100%	0%	
1-LPR-90-129 Cond Vac Exh Part & Iod Sample (No Detector, Flow only)	ODCM	89.02%	10.98%	• Power removed when 1-LPR-90-119 removed from service.
System 90D GAS Monitors	4 TS 2 ODCM	94.72%	5.28%	
0-LPR-90-118 Wat Disp Sys Gas Eff Mon (1.0541 to 1.0547 CFM)	ODCM	100%	0%	
0-LPR-90-125 MCR Intake Mon (1.05+1 to 1.0E+7 CPM)	Tech Spec	100%	0%	



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# SYSTEM 90 AVAILABILITY (11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	% Available	% Not Available	Work Description
0-LPR-90-126 MCR Intake Mon (1.0E+1 to 1.0E+7 CPM)	Tech Spec	100%	0%	
0-LPR-90-205 MCR Emer Intake Mon (1.0E+1 to 1.0E+7 CPM)		100%	<u></u> 0%	
0-LPR-90-206 MCR Emer Intake Mon (1.05+1 to 1.05+7 CPM)		100%	0%	
1-LPR-90-119 Cond Vec Exh Mon (1.05+1 to 1.05-7 CPM)	ODCM	57.77%	42.23%	<ul> <li>Pump/Motor failure.(3)</li> <li>Spurious alarms induced by electromagnetic noise.(4)</li> </ul>
1-LPR-90-130 Cntmt Purge Air Exh Mon (1.02+1 to 1.02+7 CP/0	Tech Spec	100%	0%	
1-LPR-90-131 Cntmt Purge Air Exh Mon (1.05+1 to 1.05+7 CPA)	- Tech Spec	100%	0%	
System 90E PIG Monitors	2 TS 2 ODCM	87.13%	12.87%	
0-LPR-90-101 Aux Bldg Vent PIG Mon (1.0E+1 to 1.0E+7 CPM)	ODCM	87.61%	12.39%	<ul> <li>Filter Fail alarm (moving filter).(5)</li> <li>Back-flow through iodine/particulate channel.</li> <li>Filter paper misalignment (moving filter paper).</li> </ul>
0-LPR-90-132 Serv Bldg Vent PIG Mon (1.05+1 to 1.05+7 CPM)	ODCM	90.82%	9.18%	<ul> <li>Flow control valve adjustment.</li> <li>Filter fail alarm (moving filter).(5)</li> <li>Pump/Motor failure.(3)</li> </ul>
1-LPR-90-106 Cont Bldg Low Comp PIG Mon (1.0E+1 to 1.0E+7 CPM)	Tech Spec	77.63%	22.37%	<ul> <li>Pump/Motor failure.(3)</li> <li>Channel recorder adjustment.(2)</li> <li>Low background iodine channel.</li> <li>Low Flow alarm adjustment.</li> <li>Investigation following excessive vacuum.</li> <li>Obstruction to monitor flow (clogged when boron leak occurred).</li> </ul>

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# SYSTEM 90 AVAILABILITY (11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	% Available	% Not Available	Work Description	
1-LPR-90-112 Cont Bldg Up Comp PIG Mon (1.0E+1 to 1.0E+7 CPM)	Tech Spec	92.46%	7.54%	<ul> <li>Unable to obtain chemistry grab sample.</li> <li>Filter fail alarm (moving filter).(5)</li> <li>Low background iodine channel.</li> <li>High background on particulate channel.</li> <li>Investigation following excessive vacuum.</li> <li>Test valves will not allow sufficient flow.</li> </ul>	
System 90F CAM Monitors	0 TS 0 ODCM	87.44%	12.56%		
0-LPR-90-12 Spent Fuel Pit CAM (1.05+1 to 1.05+7 CPM)		56.76%	43.24%	<ul> <li>Filter fail mechanism failure.</li> <li>Pump/Motor failure.(3)</li> </ul>	
0-LPR-90-13 Wat Pkg Area CAM (1.05+1 to 1.05+7 CPM)		78.38%	21.62%	• Filter fail alarms.(5)	
0-LPR-90-15 Hldup VIv Glr; CAM (1.05+1 to 1.05-7 CPM)	х.	99.55%	0.45%	• Low flow alarm adjustment.	
0-LPR-90-16 Decon Area CAM (1.0E+1 to 1.0E+7 CPM)		100%	0%		
0-LPR-90-17 Safet; Inj Pmp Area CAM (1.98+1 to 1.08+7 CPM)		100%	0%		
0-LPR-90-138 Wat Pkg Area CAM (1.0E+1 to 1.0E+7 CPM)		94.59%	5.41%	• Obstructed sample line.	
1-LPR-90-14 Hot Sample Rm Area CAM (1.05+1 to 1.0E+7 CPM)		70.27	29.73%	• Pump/Motor failure.(3)	
1-LPR-90-62 RB Low Comp Inst Rm CAM (1.05+1 to 1.05+7 CPM)		100%	0%		

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# SYSTEM 90 AVAILABILITY (11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	% Available	<pre>% Not Available</pre>	Work Description
System 90G DIGITAL Monitors	0 TS 4 ODCM	99.26%	0.74%	
1-LPF-90-400 Plant Vent Stack Isokinetic Mon (No Detector, Flow Only)	ODCM	100%	0%	
1-LPR-90-400 Plant Vent Stack WRGM	ODCM	98.99%	1.01%	• Data base was lost during power outage tests.
1-LPR-90-404 Cond Vac Exh Mid/Hi Rng Mon		97.30%	2.70%	<ul> <li>Monitor was isolated when 1-LPR-90-119 removed from service.</li> <li>Low bkgnd on the background detector causing loss of counts.</li> </ul>
2-LPF-90-400 Plant Vent Stack Isokinetic Mon <i>Rio Detector, Flow Cnly</i>	ODCM	100%	08	
2-LPR-90-400 Plant Vent Stack WRGM	ODCM	100%	0%	
System 901 HFT Monitors	0 TS 2 ODCM	91.22%	8.78%	
1-LPR-90-120 Stm Gen Bldn Lig Mon (1.85+1 to 1.05+7 CEM)	ODCM	72.97%	27.03%	• Spurious alarms caused by electromagnetic noise.(4)
1-LPR-90-121 Stm Gen Bldn Lig Mon (1.05+1 to 1.05+7 CPM)	ODCM	74.32%	25.68%	• Spurious alarms caused by electromagnetic noise.(4)

#### SYSTEM 90 AVAILABILITY

(11/9/95 through 1/22/96)

Monitor # Monitor Name (Monitor Range)	Tech Spec/ ODCM	% Available	<pre>% Not Available</pre>	Work Description
1-LPR-90-421 Stm Line Lp #1 & Relf Mon (1.0E+1 to 1.0E+7 CPM)		100%	0%	
1-LPR-90-422 Stm Line Lp #2 & Relf Mon (1.05+1 to 1.05+7 CPA)		100%	0%	· · · · · · · · · · · · · · · · · · ·
1-LPR-90-423 stm Line Lp #3 & Relf Mon (1.05+1 to 1.05+7 CPM)		100%	0%	
1-LPR-90-424 Stm Line Lp #4 & Relf Mon (1.CE+1 to 1.0E+7 CEM)		100%	0%	

- (1) Indicator failures are not a related problem. Their failures have not been of similar nature.
- (2) Recorders have been out of service and are still in a burn in period. They have been adjusted and/or repaired promptly. Parts have not been a concern.
- (3) Preventative maintenance measures have been scheduled to rebuild pumps on a quarterly basis as recommended by vendor.
- (4) Noise suppression components have been installed to correct for EMF noise.
- (5) A vendor manual revision has been implemented, and a work order performed to ensure O-rings have been installed in all particulate moving filter assemblies to arrest filter paper slipping.

TABLE 2 SYSTEM 90 OUT-OF-SERVICE TREND BY SUBSYSTEM

### SYSTEM 90 OOS TREND (Starting Date 11/9/95)

For the purpose of this evaluation of DOWN-TIME, the following is calculated from 11/9/95, 1800 Hrs to 1/22/96, 1800 Hrs (A total of 74 days or 1776 hrs). Start time is the date WR was entered into MPAC. Stop time is the date of CR status in MPAC for WO not yet reviewed. Completed WOs are reviewed to determine actual time OOS as well as down time imposed by Chemistry installed sample cart.

SYS #	# Chnl's	<pre>% Avalible Time</pre>	Monitor Not Functional
90A	37 (65712 hr)	99.46 %	0.54 %(352 hr)
90B	10(17760 hr)	98.74 %	1.26 %(224 hr)
90C	3 (5328 hr)	92.74 %	7.26 %(387 hr)
90D	8 (14208 hr)	94.72 %	5.28 %(750 hr)
90E	4(12 CH) (21312 hr)	87.13 %	12.87 %(2743 hr)
90F	8 (14208 hr)	87.44 %	12.56 %(1784 hr)
90G	5(8880 hr)	99.26 %	0.74 %(66 hr)
901	6 (10656 hr)	91.22 %	8.78 %(936 hr)

Total	89		95.42 %	4.58 %
	(158,064	hrs)	(150,822 hrs)	(7,242 hrs)

## SYSTEM 90 OOS TREND (Starting Date 11/9/95)

The information provided by this table was compiled from generated repair/failure work requests. Only those monitors where work has been requested are given.

For the purpose of this evaluation, the following was calculated from 11/9/95, 1800 Hrs to 1/22/96, 1800 Hrs (A total of 74 days or 1776 hrs). The % Maint Time begins when WR is entered into MPAC and ends when WO is CR statused in MPAC. Completed WOs are reviewed to determine actual time OOS as well as down time imposed by Chemistry installed sample cart.

SYS #/MON #	<pre>% Available     Time</pre>	Monitor Not Functional
90A Area Monitors		
2-RE-90-1 (Spent Fuel Pit Area Mon)	98.65 %	1.35 8(24 hr)
0-RE-90-11 (Cntmt Spray RHR Pmp Rm Area Mon)	85.59 %	14.41 8(256 hr)
*0-RE-90-102 (Fuel Pool Area Mon)	95.95 %	4.05 %(72 hr)
*0-RE-90-103 (Fuel Pool Area Mon)	100 %	0 %
1-RE-90-292 (RHR Post Acc Area Mon)	100 %	0 %
90B Liquid Monitors		
0-RE-90-122 (Wst Disp Sys Lig Mon)	100 %	0 %
-RE-90-123 (Comp Cooling Liq Mon)	100 %	0 %
*0-RE-90-212 (Sta Sump Disc Eff Mon)	87.39 %	12.61 %(224 hr)
*0-RE-90-225 (Cond. Demin Eff Mon)	100 %	0 %
90C Sample Monitors		
*1-RE-90-129 (Cond Vac Exh Part & Iod Mon)	89.02 %	10.98 %(195 hr)
*0-RE-90-300 (Aux Bldg Isokinetic Mon)	89.19 %	10.81 %(192 hr)
90D Gaseous Monitors		
*0-RE-90-118 (Wst Disp Sys Gas Eff Mon),	100 %	0 %
*1-RE-90-119 (Cond Vac Exh Gas Mon)	57.77 %	42.23 %(750 hr)
*0-RE-90-126 (MCR Intake Gas Mon)	100 %	0 %
90E PIG Monitors of 90E have 3 channels, fo	rmula for calc is:	OOS hrs/(total hrs * 3).
*0-RE-90-101 (Aux Bldg Vent PIG Mon)	87.61 %	12.39 %(660 hr)
*1-RE-90-106 (Cont Bldg Low Comp PIG Mon)	77.63 %	22.37 8(1192 hr)
*1-RE-90-112 (Cont Bldg Up Comp PIG Mon)	92.46 %	$7.54 \ \%(402 \ hr)$

90.82 %

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\* Tech Spec/ODCM Monitors

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\*0-RE-90-132 (Serv. Bldg Vent PIG Mon)

## SYSTEM 90 OOS TREND (Starting Date 11/9/95)

SYS #/MON #	<pre>% Available     Time</pre>	Monitor Not Functional
90F CAM		
0-RE-90-12 (Spent Fuel Pit Part Mon)	56.76 %	43.24 %(768 hr)
0-RE-90-13 (Waste Pkg Area Part Mon)	78.38 %	21.62 %(384 hr)
1-RE-90-14 (Hot Smpl Rm Area Part Mon)	70.27 %	29.73 %(528 hr)
0-RE-90-15 (Holdup Vlv Gal Part Mon)	99.55 %	0.45 %(8 hr)
0-RE-90-16 (Decon Area Part Mon)	100 %	0 %
0-RE-90-17 (Safety Inj Pmp Area Part Mon)	100 %	0 %
1-RE-90-62 (Cont Bldg Low Comp Inst Rm Part	Mon) 100 %	0 %
0-RE-90-138 (Wst Pkg Area Part Mon)	94.59 %	5.41 %(96 hr)
90G Digital Effluent *1-RE-90-400 (Wide Rng Gas Mon) 1-RE-90-404 (Cond Vac Exh Mid/Hi Gas Mon) 1-RE-90-450 (Cond Vac Exh Mid/Hi Com Mod)	98.99 % 97.30 % 100 %	1.01 %(18 hr) 2.70 %(48 hr) 0 %
901 HFT Mons (SGBD & MSL) *1-RE-90-120 (Stm Gen Bldn Lig Samp Mon) *1-RE-90-121 (Stm Gen Bldn Lig Samp Mon) 1-RE-90-423 (Main Steam Line Rad Mon)	72.94 % 74.32 % 100 %	27.03 %(480 hr) 25.68 %(456 hr) 0 %

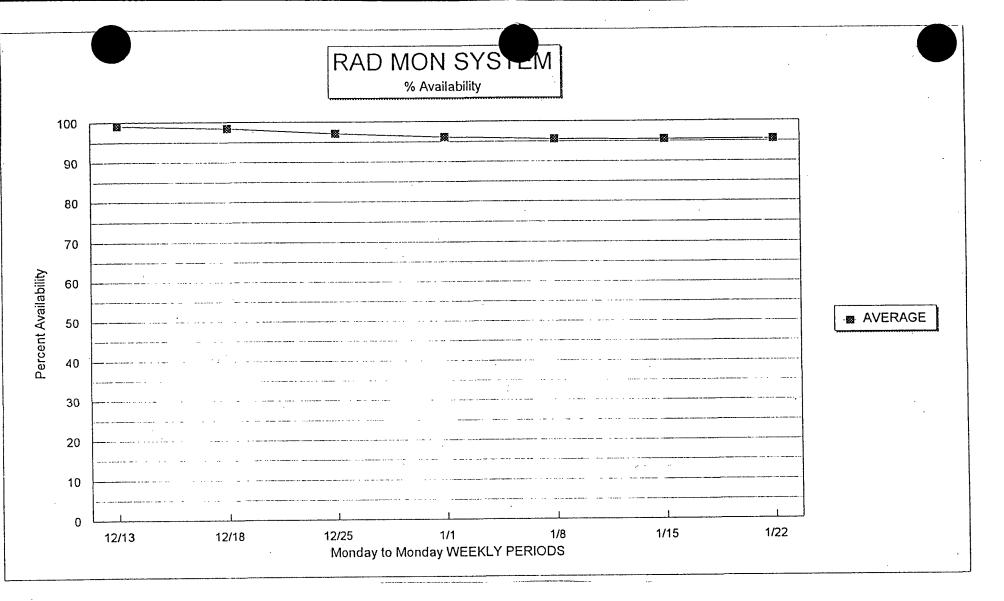
\* Tech Spec/ODCM Monitors

### GRAPH 1 RADIATION MONITORING SYSTEM AVAILABILITY

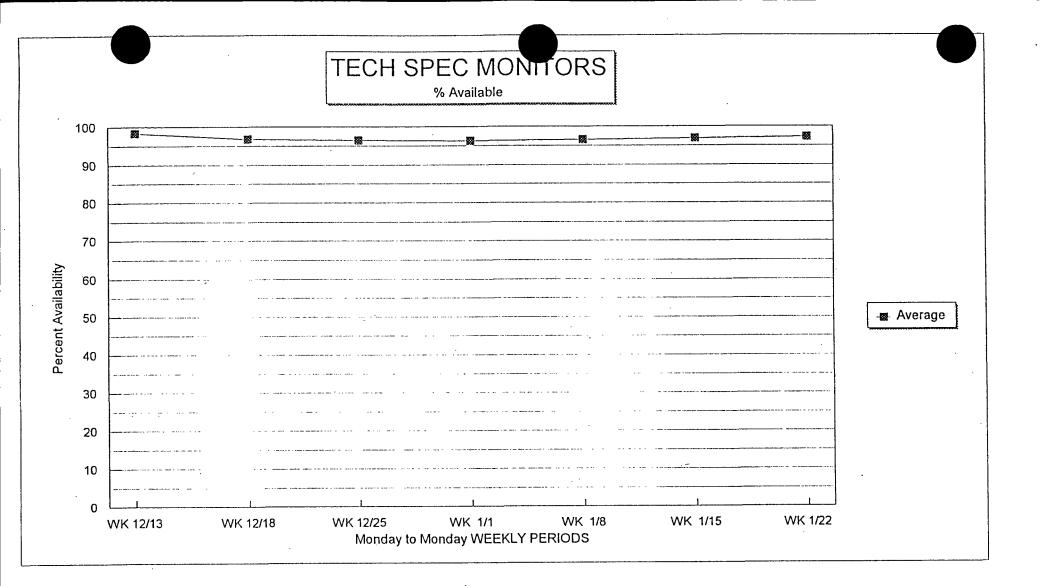
X

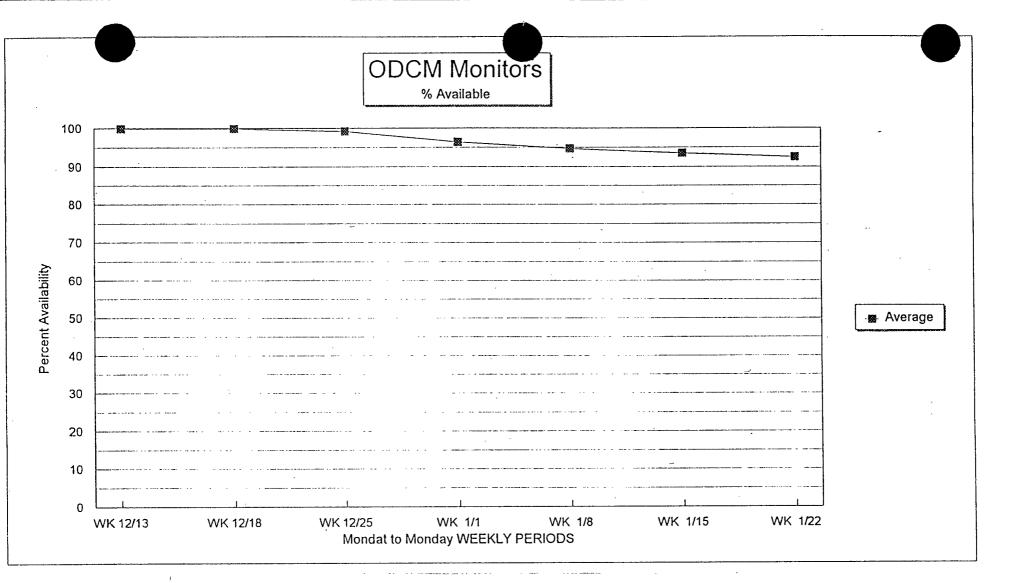
#### GRAPH 2 TECHNICAL SPECIFICATION MONITOR UNAVAILABILITY

#### GRAPH 3 ODCM MONITOR UNAVAILABILITY



Principal cause for downward trend is the unavailability of monitors 1-RE-90-119, 1-LPR-90-120, and 121 to correct electronic noise issues.





Principal cause for downward trend is the unavailability of monitors 1-RE-90-119, 1-LPR-90-120, and 121 to correct electronic noise issues.

### TABLE 3

### SYSTEM 90 OUT OF SERVICE TREND (CHRONOLOGICALLY BY WORK ORDER)

(CHRONOLOGICALLY BY WORK ORDER

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Monitor #	Date WR Initiated	Date WO Comp (CR)	Duration WO Open (Days)	en Actually OOS		Open Actually OOS		Corrective Action
1-RM-90-112C Cnt Bldg Upper Comp PIG Red Mon	10/30/95	11/24/95	15	6 (005 by WO 95-25280-00)	WO 95-25128-00: Operate light will not stay lit	Verified proper HV, LLD, ULD and Cal source readings. ALL were within as left tol.		
1-LPR-90-112A Cnt Bldg Upper Comp PIG Rad Mon	11/1/95	11/24/95	15	48	WO 95-25280-00: Unable to obtain Grab Sample Bypass	Exercised relf vlv. Performed IMI-90.003. Adjusted filter feed clutch. Inst O-ring on filter paper		
0-LPR-90-13 Mat PKg Area CAM	11/3/95	11/10/95	7	N/A	.wo 95-25339-00: Filter Fail Alarm	Replaced paper: (A VM revision has been generated to resolve slipping paper) Paper was moving but not resetting timer		
1-LPR-90-106 Cnt Bidg Lower Comp PIG Red Mon	11/6/95	11/20/95	11	264	WO 95-25662-00: Pump locked up causing motor failure and 1-HS-90- 106A failure.	Pump, motor and HS replaced		
0-LPR-90-12 Spent Fuel Pit CAM	11/10/95	11/20/95	10	24	WO 95-25948-00: Filter Fail Alarm	Changed fast speed mtr clutch & adj filter feed micro-switch		
1-LPR-90-400 shield Bldg Vent NRGM	. 11/11/95	11/12/95	1	18	WO 95-25919-00: Communication between monitor and MCR has failed	Reloaded RM-80 data base		
0-RR-90-122 Wat Disp Sys Lig Bad Mon	11/12/95	11/15/95		N/A	WO 95-25939-00: RR does not record same value as ratemeter indicating.	Cleaned contacts of amplifier card & calibrated RR		
0-LPR-90-138 Waste Pkg Area CAM	11/14/95	11/18/95	4	96	WO 95-26066-00: Flow Alarm, Apparent particulate flow restriction	Cleared obstructed sense line. Also repaired RR door catch		
0-LPR-90-101 Aux Bldg Vent Part Ead Mon	11/19/95	11/22/95	3	43	WO 95-26399-00: Particulate flow alarm, apparent flow restriction	Replaced filter paper & installed O-rings		
0-RR-90-16 Decon Area CAM	11/19/95	AP status		N/A	WR C318789: (Minor Maintenance) Chart paper not advancing	WO went to I&C shop 11/22/95		
0-RR-90-17 Safety Inj Pmp Area CAM	11/19/95	AP status		N/A	WR C318796: (Minor Maintenance) Chart drive not operating properly	WO went to I&C shop 11/22/95		
1-RR-90-106 Chi Bidg Lo Comp PIG Red Mon	11/20/95	11/30/95	10	N/A	WR C288396: (WR cancelled & tied to WO 95-24535-00) Red pin sticking, will not ink	Cleared red pin pathway		

Monitor #	Date WR Initiated	Date WO Comp (CR)	Duration WO Open (Days)	Time Rad Mon Actually OOS (Hours)	Reason OOS	Corréctive Action
0-LPR-90-132 Serv Bldg Vent PIG Red Mon	11/22/95	11/18/95 CI status	26	115	WO 95-27213-00: Unable to calibrate flow controller for Pmp #1, cnt vlv sticking	Replaced drive mtr, Installed O- rings on filter paper, performed IMI-90.003. Replaced filter fail micro switch. Replaced sheared pin on slow drive filter paper mtr
0-LPR-90-102 Spent Fuel Pit Area Red Mon	11/24/95	11/26/95	2	48	WO 95-26794-00: Rad Mon failed HI after RE was Hi pressure washed	Connector plug reconnected & tightened
2-RE-90-1 Spent Fuel Pit Pmp area Rad Mon	11/25/95	12/6/95	11	N/A	WO 95-27183-00: Failed low, will not source check	Troubleshooting revealed no problems. OPS reported no problems, check source test responded properly
0-RR-90-102 spent Fuel Dit Area Pad Mon.	11/27/95	11/29/95	2	N/A	WO 95-27242-00: Repair door on recorder	Repaired door latch
0-LPR-90-102 Spent Fuel Pit Area Pad Mon	11/27/95	11/28/95	1	24	WO 95-26809-00: Loop will not respond to check source test	Replaced detector
1-LPR-90-112 cnc:Bldg Up.comp.PIG Bad Mon	11/27/95	12/13/95	16	N/A	WR C288349: Filter fail alarms once or more each day	WR cancelled, will be performed by WO 95-28136-00
0-RE-90-11 Cont Spray RHP Pmp Pm Area Pad Mon	11/28/95	12/8/95 CI status	10	240	WO 95-27251-00: Green operate light will no stay lit	Broken connector pin. Replaced cannon plug
1-LPR-90-292 ENE POST ACC Ares Red Mon	11/29/95	12/7/95	8	N/A	WO 95-27249-00: Green operate light will not stay lit	No problems found, operating properly.
1-LPR-90-106C Cnt Bldg Lo Comp PIG Rad Mon	12/1/95	12/11/95	10	240 (1-PE-90-106C only)	WO 95-25003-00: Ann window continuously alarming due to low counts	Replaced bridge rectifier & properly reconnected the detector connector
0-RI-90-212A Stat Sump Disc Lig Rad Mon	12/2/95	12/8/95 CI status	6	8	WO 95-27326-00: Ratemeter indicator would not calibrate, (sticking)	Ratemeter indicator replaced and calibrated
1-LPR-90-106C cnt Bldg Lo Comp PTO Rad Mon	12/3/95	12/7/95	4	N/A (005 by M0. 35-15002-00)	WO 95-27323-00: Following black-out test, iodine flow alarm would not clear	No problems found. Setpoints verified with no adjustments needed.
0-LPR-90-17 Safety Inj Pmp Area CAM	12/5/95	A status			WR C061974: Chronic filter fail alarm	



Monitor #	Date WR Initiated	Date WO Comp (CR)	Duration WO Open (Days)	Time Rad Mon Actually OOS (Hours)	Reason OOS	Corrective Action
0-LPR-90-15 Holdup Viv Gallery CAM	12/7/95	12/14/95	7	8	WR C318602: Flow alarm will not clear	WR cancelled to WO 95-28131-00 which was cancelled to WO 95-24558-00 which was completed 12/14/95 (TR#380424)
1-LPR-90-106 Cnt Bldg Lo Compt PIG Rad Mon	12/7/95	12/8/95	1	8 (1-RE-90-106C was OOS by HO 95-25003-00)	WO 95-27726-00: Corrective action following excessive vacuum	WBPER950650 Calibrated flow controllers & verified no leakage
1-LPR-90-112 Cnt Bldg Up Comp PIG Rad Mon	12/7/95	12/11/95	3	8	WO 95-27727-00: Corrective action following excessive vacuum	Performed inspection and verification of calibration. No problems found
0-RE-90-132 Ser Bldg Vent PIS Red Mon	12/8/95	12/12/95	4	N/A	WO 95-27907-00: Malfunction alarm comes in & out before OPS can investigate	WO cancelled: work to be performed by WO 95-27213-00
0-LPR-90-12 Spent Fuel Pit CAM	12/9/95	1/9/96 CE status	31	744	WO 95-27781-00: Local breaker trips immediately after being closed	
0-RM-90-212A Station Sump Disc Lig Rad	12/10/95	12/11/95	1	N/A	W0 95-27765-00: Troubleshoot to determine high alarm failure	Setpoint to low for plant conditions. Adjusted to new setpoint
Various	12/11/95	1/12/96 CI status	32	N/A	WO 95-27778-00: Remove Tech Spec name tags from 0-M-12 & 1-M-30 PNLs	Removed name tags
1-LPR-90-112 Cnt Bldg Up Comp PIG Red Non	12/13/95	12/18/95	5	N/A	WO 95-28136-00. Ratemeter reads 3000 CPM, background appears to be high. Verify calibration	WO cancelled, no problems found
0-RE-90-103 Spent Fuel Pit Area Rad Mon	12/13/95	12/20/95	7	N/A	WO 95-28173-00; Reading bottom of scale, can not verify Bkgnd per 1-51-0-2	WO cancelled. To be performed by WO 95-27205-00
0-LPR-90-118 Maste Disp Sys Gas Rad Mon	12/15/95	1/11/96 CI status	27	N/A	WO 95-28201-00: RR reads 6000 CMP while RM reads 2000 CPM	Loose connector. Cleaned RR mechanical components and calibrated.
Various	12/15/95	A status		N/A	WR C311067: Verify O-ring installation on particulate moving filter monitors	

# SYSTEM 90 OOS TREND (Starting Date 11/9/95)

Monitor #	Date WR Initiated	Date WO Comp (CR)	Duration WO Open (Days)	en Actually OOS		Corrective Action
1-RE-90-14 Hot Sample Pm CAM	12/18/95	1/9/96 CE status	22	528	WO 95-28212-00: No flow through CAM, monitor in Flow Alarm status	Broken belt. Replaced Pmp/Mtr belt
1-RE-90-119 Cond Vac Exh Gas Pad Mon	12/18/95	12/21/95 CX status	3	78	WO 95-28188-00: Flow element bypassed	WBPER950681 TR# 373886 1/10/96
1-RE-90-129 Cond Vac Exh Part & Iod Rad Mon	12/18/95	12/21/95	N/A	75	Monitor was isolated when 1-RE-90-119 was removed from service	
1-RE-90-404 Cond Vac Exh Mid/Hi Rng Gas Rad Mon	12/19/95	12/21/95	N/A	48	Monitor was isolated when 1-RE-90-119 was removed from service	WBPER950681
0-LPR-90-101 Aux Bldg Vent PIG Red Mon	12/20/95	12/22/95 CE status	2	48	WO 95-28425-00: Iodine pre-filter indicating back flow	WBPER950676 (See WO 95-28425-01)
1-RE-90-119 Cond Vac Exh Gas Pad Mon	12/24/95	1/21/96 CR status	28	672	WO 95-28701-00: Monitor appears to be to sensitive to electrical interference	DCN generated to replace present check source AC relay with a DC relay to reduce noise susceptibility.
0-LPR-90-101 Aux Bldg Vent PIG Red Hon	12/26/95	1/1/96 CI status	6	121	WO 95-28425-01: Iodine pre-filter indicating back flow	0-RE-90-101C pig door bent. Corrected deformation, revised plant instructions to STOP 0-PMP-90-300 before 0-RE-90-101 pump and START 0-RE-90-101 pump before 0-PMP-90-300
0-RE-90-13 Hasto Pkg Area CAM	12/26/95	1/11/96 CI status	16	384	WO 95-28732-00: continuous filter fail alarm	
1-LPR-90-120 Stm Gen Bldn Lig Red Mon	12/27/95	1/16/96 CR status	20	480	WO 95-28956-00: Low Flow & Hi Rad alarm will not clear	Noise problem. DCN W-38628 generated to install RC networks.
1-LPR-90-123 CCS Lig Pad Mon	12/27/95	AP status			W0 96-00446-00: Flow alarm will not clear	
0-RR-90-225 Cond Demin Lig Red Mon	12/28/95	12/29/95	1	N/A	WO 95-28973-00: Recorder does not advance	WO cancelled, chart paper advancing properly. No work performed
1-LPR-90-121 Stm Gen Bldn Lig Red Mon	12/29/95	1/16/96 CR status	18	432	WO 95-28956-00: Low Flow & Hi Rad alarm will not clear	

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Monitor #	Date WR Initiated	Date WO Comp (CR)	Duration WO Open (Days)	Time Rad Mon Actually OOS (Hours)	Reason OOS	Corrective Action
0-LPR-90-12 Spent Fuel Pit CAM	12/29/95	1/6/96 CI status	8	(005 by W0 95-27781-00)	WO 95-27781-01: Replace pump, found seized.	Replaced pump.
1-LPR-90-112 Cnt Bldg Up Comp PIG Rad Mon	12/30/95	1/8/96 CI status	9	216 (1-RE-90-112C only)	WO 95-28978-00: Inst. Malf. alarming periodically.	
1-LPR-90-106 Cnt Bidg Low Comp PIG Red Mon	12/30/95	1/1/96 CI status	2	48	WO 95-28980-00: Particulate alarm will not clear.	Filters clogged by boron leak. Calibrated flow controller.
0-RI-90-11 Cont Spray RHP Pmp Pm Area Rad Mon	11/2/95	1/17/96 CI status	46	16	WO 95-24966-00: During performance of 92 day COT, RI would not calibrate	Replaced indicator
0-FS-90-129 Cond Vac Exh Part & Iod Mon	1/4/96	1/9/96 CE status	5	120	WO 95-26681-01: Troubleshoot to correct problem found during WO 95-26681-00	
0-RR-90-102 Spent Fuel Pit Area Red Mon.	1/4/96	1/10/96 CE status	6	N/A	WO 95-27200-01: Found recorder inoperable during 92 day COT	
0-RR-90-126 MCP Inteke Gas Rod Mon	1/5/96	1/12/96 CI status	7	N/A	WO 96-00461-00: Recorder reading does not match ratemeter	
1-ISIV-90-120J Stm Gen Bldn Lig Red Mon	1/6/96	1/7/96 CX status	1	(005 by WO 95-28956-00)	WO 96-00579-00: Valve appears to be broken, stuck closed.	TR# 373885 1/9/96 -
0-LPR-90-101 Aux Bldg Vent PIG Rad Mon	1/11/96	1/15/96 CR status	4	8	WO 96-00905-00: Correct filter paper alignment problem.	
0-RM-90-212A Station Sump Disc Lig Rad Mon	1/13/96	AD status			WO 95-26231-00: Clogged rotameter	
0-RM-90-300 Aux Bldg Isokinetic Sample Mon	1/15/96	1/23/96 CR_status	8	192	WO 96-00935-00: Replace broken belt and frozen motor.	
0-RM-90-16 Decon Area CAM	1/17/96	CANCELLED			WO 96-01302-00: Inst Malf alarming sporadically	To be worked by WR 287210

Monitor #	Date WR Initiated	Date WO Comp (CR)	Duration WO Open (Days)	Time Rad Mon Actually OOS (Hours)	Reason OOS	Corrective Action		
0-RM-90-16 Decon Area CAM	1/17/96	AA status			WR 287210: Place O-rings on filter feed and take-up spool for listed RMs			
0-PMP-90-132 Serv Bldg Vent PIG Rad Mon	1/17/96	1/19/96 CI status	2	48	WO 96-01318-01: Replace pump motor.	Replaced motor		
1-LPR-90-450 Cond Voic Esth Wid Hi Com Mod	1/17/96	AE status		N/A	W0 96-01333-00: Recurring FAIL alarm	Background detector is failing because of low background (Loss Of Counts)		
0-RM-90-300 Aux Bldg Isokinetic Sample Mon	1/19/96	1/22/96 CR status	3	72	WO 95-27598-01: Troubleshoot 0-LPF-90-300 for CFV not responding during 0-ODI-90-300.	Cleaned card edge, cleared problem.		
1-TTIV-90-112 Cnt Bldg Up Comp PlG Pad Mon.	1/19/96	PL status		N/A	WO 96-01421-00: Valve will not allow adequate flow.			
1-LPR-90-62 Cnt Bldg Lew Comp Inst Rm Part Rad Mon	1/20/95	PG status			WO 96-01452-00: Low flow alarm did not respond when pump turned off.			
2-RE-90-1 Spent Fuel Pit Pmp Aree Red Mon	1/21/96	1/22/96 CR status	1	24	WO 95-27141-01: Troubleshoot to determine 2-RI-90-1 not responding during performance of IMI-90.015 (COT).			
1-RM-90-423 Main Steem Line Pad Mon	1/21/96	PL status		N/A	WR 287019: Green LED for 1-RM-90-423 not bright. Repair/Replace			

Attachment 2

Critical Spares Program BOMs

WBN Spare Parts Project

# System 90 Component Evaluations Complete and loaded into EMS Database

0-BKR-090-0101-A	AB VENT RAD MON (0-RE-90-101)	1005	EF3-B020	CAD521	BOM 1310 Rev 000
0-BKR-090-0125-A	MCR AIR INTAKE RAD MON (0-RE-90-125)	1005	EF3-B020	CAD521	BOM 1310 Rev 000
0-BKR-090-0126-B	MCR AIR INTAKE RAD MON (0-RE-90-126)	1005	ED63B020	CAD521	BOM 1310 Rev 000
0-BKR-090-0132-A	SB VENTILATION RAD MON (0-RE-90-132)	1005	ED63B020	BTN034	F BOM 585 Rev 000
0-BKR-090-0205-A	MCR EMERG AIR INTAKE RAD MON (0-RE-90-205)	1005	EF3-B020	CAD521	BOM 1310 Rev 000
0-BKR-090-0206-B	MCR EMERG AIR INTAKE RAD MON (0-RE-90-206)	1005	EF3-B020	CAD521	BOM 1310 Rev 000
0-BKR-090-L397-B	480V C&A VT BD 1B1-B BKR 12E1 RAD MONITOR	1005	EF3-B020	CAD521	BOM 1310 Rev 000
0-CKV-090-0101	0-RE-90-101 AIR CHECK	C339	N89-180	AVR777	BOM 497 Rev 000
0-CKV-090-0101A	AUX BLDG VENT RAD MON FAN A EXHAUST CHECK	C339	119T-6PP	BXM130	BOM 543 rev 0
0-CKV-090-0101B	AUX BLDG VENT RAD MON FAN B EXHAUST CHECK	C339	119T-6PP	BXM130	BOM 543 rev 0
0-CKV-090-0122	WASTE DISPOSAL SYS LIQ EFFLUENT MON DISCH CH	( C339	259T-8PP	BXM183	BOM 496 rev 0
0-CKV-090-0125	MCR AIR INTAKE RAD MONITOR CHECK	G063	119T-6PP	BXM130	BOM 543 rev 0
0-CKV-090-0126	MCR AIR INTAKE RAD MONITOR CHECK	G063	119T-6PP	BXM130	BOM 543 rev 0
0-CKV-090-0128	WDS GAS EFFLUENT SAMPLE CHECK	N425	SS-4CP2-1	AYM875	BOM 875 rev 0
0-CKV-090-0132A	SERV BLDG VENT RAD MON FAN A EXHAUST CHECK	C339	119T-6PP	BXM130	BOM 543 rev 0
0-CKV-090-0132B	SERV BLDG VENT RAD MON FAN B EXHAUST CHECK	C339	119T-6PP	BXM130	BOM 543 rev 0
0-CKV-090-0133	ERCW LIQUID RAD MON CHECK	G063	259T-8PP	BXM183	BOM 496 rev 0
0-CKV-090-0134	ERCW LIQUID RAD MON CHECK	G063	259T-8PP	BXM183	BOM 496 rev 0
0-CKV-090-0205	MCR EMERG AIR INTAKE RAD MONITOR CHECK	G063	119T-6PP	BXM130	BOM 543 rev 0
0-CKV-090-0206	MCR EMERG AIR INTAKE RAD MONITOR CHECK	G063 ·	119T-6PP	BXM130	BOM 543 rev 0
-CKV-090-0211	ABANDONED IN PLACE	C339	259T-8PP	BXM183	. BOM 496 rev 0
0-CKV-090-0212	STATION SUMP DISCHARGE RAD MONITOR CHECK	C339	259T-8PP	BXM183	BOM 496 rev 0
0-FC-090-0012	SPENT FUEL PIT PART MON FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FC-090-0013	WSTE PKG AREA PART MON FLOW CONT	B069	D2T-H18SS	BQT868	
0-FC-090-0015	HOLDUP VLV GALLERY PART MON FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FC-090-0016	DECONTAMINATION AREA PART MON FLOW CONT	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FC-090-0017	SAF INJ PMP AREA PART MON FLOW CONT	B069	D2T-H18SS		BOM 1003 Rev 000
0-FC-090-0101A	AUX BLDG VENT MON FAN A FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FC-090-0101B	AUX BLDG VENT MON FAN B FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FC-090-0105	MAIN CONT RM PART MON FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FC-090-0132A	SERV BLDG VENT MON PART-GAS FLOW CONT	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FC-090-0132B	SERV BLDG VENT MON IODINE FLOW CONT	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FC-090-0138	WASTE PKG AREA PART MON FLOW CONT	B074	D2T-H18SS		BOM 1003 Rev 000
0-FCV-090-0300	ISOKINETIC SAMP SYS FLOW CONT VLV	D006	58501-A25-B52	CAD935	BOM 1427 Rev 000
0-FI-090-0128	WDS GAS EFFLUENT PART-IODINE SAMP FLOW	D295	VFA-9-SSV		BOM 1684 rev 0
0-FI-090-0300/1A	ISOKINETIC SAMP SYS STACK VELOSITY (FPM)	D033	DM-4100L	BAR605	BOM 1426 rev 0000
0-FI-090-0300/1B	ISOKINETIC SAMP SYS STACK VOL (CFM)	D033	DM-4100L	BAR605	BOM 1426 rev 0000
0-FI-090-0300/2A	ISOKINETIC SAMP SYS NOZZLE WITHDRAWAL VEL	D033	DM4100L		BOM 1426 rev 0000
0-FI-090-0300/2B	ISOKINETIC SAMP SYS SAMP VOL (CFM)	D033	DM-4100L	BAR605	BOM 1426 rev 0000
0-FI-090-0320/1A	ISOKINETIC SAMP SYS SAMP VELOSITY (FPM)	D033	DM-4100L	BAR605	BOM 1426 rev 0000
0-FI-090-0320/1B	ISOKINETIC SAMP SYS STACK VOL (CFM)	D033	DM-4100L		BOM 1426 rev 0000
0-FI-090-0320/2A	ISOKINETIC SAMP SYS NOZZLE WITHDRAWAL VEL	D033	DM4100L		BOM 1426 rev 0000
0-FI-090-0320/2B	ISOKINETIC SAMP SYS SAMP VOL (CFM)	D033	DM4100L		BOM 1426 rev 0000
0-FS-090-0012	SPENT FUEL PIT PART MON LOW FLOW SW	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
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0-FS-090-0013	WSTE PKG AREA PART MON LOW FLOW SW	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0015	HOLDUP VLV GALLERY PART MON LOW FLOW SW	B069	D2T-H18SS	BQT868	
0-FS-090-0016	DECONTAMINATION AREA PART MON LOW FLOW SW	B069	D2T-H18SS	BQT868	BOM .1003 Rev 000
0-FS-090-0017	SAF INJ PMP AREA PART MON LOW FLOW SW	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0101A	AUX BLDG VENT MON PART-GAS LOW FLOW	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0105	MAIN CONT RM PART MON LOW FLOW	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0125-A	MAIN CONT RM INTAKE MON LOW FLOW	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0126-B	MAIN CONT RM INTAKE MON LOW FLOW	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0128	WDS GAS EFFLUENT PART- IODINE SAMP LOW FLOW	8069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0132A	SERV BLDG VENT MON PART LOW FLOW	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0138	WASTE PKG AREA PART MON LOW FLOW	B069	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0205-A	MAIN CONT RM EMER INTAKE MON LO FLOW	G063	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FS-090-0206-B	MAIN CONT RM EMER INTAKE MON LO FLOW	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
0-FSV-090-0101A	AUX BLDG VENT MON PART PURGE AIR	A610	8210C88	BYW929	BOM 878 Rev 000
0-FSV-090-0101B	AUX BLDG VENT MON PART PURGE AIR	A610	8210A38	BYX035	BOM 877 Rev 000
0-FSV-090-0132A	SERV BLDG VENT MON - PART PURGE AIR	A610	8210C88	BYW929	BOM 878 Rev 000
0-FSV-090-0132B	SERV BLDG VENT MON PART PURGE AIR	A610	8210A38	BYX035	BOM 877 Rev 000
0-HS-090-0125-A	MAIN CONT RM INTAKE MON FAN	G063	MBG-2	BPV719	BOM 1415 REV 0
0-HS-090-0126-B	MAIN CONT RM INTAKE MON FAN	S345	MBG-2	BPV719	BOM 1415 REV 0
0-HS-090-0205-A	MAIN CONT RM EMER INTAKE MON FAN	G063	MBG-2	BPV719.	BOM 1415 REV 0
-HS-090-0206-B	MAIN CONT RM EMER / INTAKE MON FAN	G063	MBG-2	BPV719	BOM 1415 REV 0
0-MTR-090-0012A	MOTOR FOR 0-PMP-90-12	G292	0281-5050-01	BXM141	BOM 387 Rev 000
0-MTR-090-0013A	MOTOR FOR 0-PMP-90-13	G292	0281-5050-01	BXM141	BOM 387 Rev 000
0-MTR-090-0015A	MOTOR FOR 1-PMP-90-15	G292	0281-5050-01	BXM141	BOM 387 Rev 000
0-MTR-090-0016A	MOTOR FOR 0-PMP-90-16	G292	0281-5050-01	BXM141	BOM 387 Rev 000
0-MTR-090-0017A	MOTOR FOR 0-PMP-90-17	G292	0281-5050-01	BXM141	BOM 387 Rev 000
0-MTR-090-0105A	MOTOR FOR 0-FCV-90-105	G292	0281-5050-01	BXM141	BOM 387 Rev 000
0-MTR-090-0138A	MOTOR FOR 0-PMP-90-138	<u> </u> <u></u>	0281-5050-01	BXM141	BOM 387 Rev 000
0-PCV-090-0300A	ISOKINETIC SAMP SYS SUPPLY AIR REGULATOR	N174	11-018	BAH135F	BOM 452 Rev 000
0-PMP-090-0105	MAIN CONTROL ROOM MON FAN	DR05	RAI	CAP056	
0-PX-090-0102T-A	ISOLATORS 12 & 48V DC POWER SUPPLIES	PW03	HC12-3.4-A	CAP539	BOM 1421 REV 0
0-PX-090-0103-B	FUEL POOL RADIATION MON POWER SUPPLY	S637	RP-23/0281-0600-0	CAP539	BOM 1421 REV 0
0-PX-090-0103T-B	ISOLATORS 12 & 48V DC POWER SUPPLIES	PW03	HC12-3.4-A	CAP539	BOM 1421 REV 0
0-RM-090-0102T-A	FUEL POOL MON ISOLATOR	EM03	175C-304		BOM 1403 rev 0000
0-RM-090-0103T-B	FUEL POOL MON ISOLATOR	EM03	A/N 175C304		BOM 1403 rev 0000
0-RM-090-0125T-A	MAIN CONT RM INTAKE MON ISOLATOR	EM03	175C304		BOM 1403 rev 0000
0-RM-090-0126T-B	MAIN CONT RM INTAKE MON ISOLATOR		A/N 175C304	BNQ423	BOM 1403 rev 0000
0-RM-090-0133T-A	ERCW LIQ MON ISOLATOR	EM03	175C304		BOM 1403 rev 0000
0-RM-090-0134T-B	ERCW LIQ MON ISOLATOR	EM03	A/N 175C304	BNQ423	BOM 1403 rev 0000
0-RM-090-0140T-A	ERCW LIQ MON ISOLATOR		175C304		BOM 1403 rev 0000
0-RM-090-0141T-B			175C304		BOM 1403 rev 0000
0-RM-090-0205T-A			175C304		BOM 1403 rev 0000
0-RM-090-0206T-B			A/N 175C304		BOM 1403 rev 0000
1-BKR-090-0106-A		1005	ED63B020		BOM 1310 Rev 000
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# System 90 Component Evaluations

Complete and loaded into EMS Database

	1-BKR-090-0112-B	CNTMT BLDG UPPER COMPT RAD MON (1-RE-90-112)	1005	ED63B020	CAD521	BOM 1310 Rev 000
	1-BKR-090-0119A-A	COND VAC PMP AIR EXH RAD MON (1-RE-90-119)	1005	EF3-B020	CAD521	BOM 1310 Rev 000
	1-BKR-090-0130-A	CNTMT PURGE AIR EXH RAD MON (1-RE-90-130)	1005	EF3-B020	CAD521	BOM 1310 Rev 000
	1-BKR-090-0131-B	CNTMT PURGE AIR EXH RAD MON (1-RE-90-131)	1005	EF3-B020	CAD521	BOM 1310 Rev 000
	1-BKR-090-0452-A	480V C&A VT BD 1A1A BKR12E1 SHLD BLDG FL MON	1005	EF3-B020	CAD521	BOM 1310 Rev 000
	1-CKV-090-0099	ABANDONED IN PLACE	C339	119T-6PP	BXM130	BOM 543 rev 0
	1-CKV-090-0106A	CNTMT BLDG LOWER COMPT RAD MON FAN A EXH	G063	119T-6PP	BXM130	BOM 543 rev 0
	1-CKV-090-0106B	CNTMT BLDG LOWER COMPT RAD MON FAN B EXH	G063	119T-6PP	BXM130	BOM 543 rev 0
	1-CKV-090-0112A	CNTMT BLDG UPPER COMPT RAD MON FAN A EXH	G063	119T-6PP	BXM130	BOM 543 rev 0
	1-CKV-090-0112B	CNTMT BLDG UPPER COMPT RAD MON FAN B EXH	G063	119T-6PP	BXM130	BOM 543 rev 0
	1-CKV-090-0119	COND VAC PMP AIR RAD MONITOR CHECK	C339	119T-6PP	BXM130	BOM 543 rev 0
	1-CKV-090-0120	STM GEN BLDN LIQ SAMPLERAD MONITOR CHECK	C339	259T-8PP	BXM183	BOM 496 rev 0
	1-CKV-090-0124.	STM GEN BLDN LIQ SAMPLERAD MON DISCH CHECK	C339	259T-8PP	BXM183	BOM 496 rev 0
	1-CKV-090-0129	CNDS VAC PMP AIR EXH RAD MONITOR CHECK	N425	SS-4CP2-1	AYM875	BOM 875 rev 0
	1-CKV-090-0130	CNTMT PURGE AIR EXH RAD MONITOR CHECK	G063	119T-6PP	BXM130	BOM 543 rev 0
	1-CKV-090-0131	CNTMT PURGE AIR EXH RAD MONITOR CHECK	G063	119T-6PP	BXM130	BOM 543 rev 0
	1-CKV-090-0452A	SHIELD BLDG VT MON SYS CHECK VLV	KÙ01	UN-3-150-C	BWV285	BOM 1540 Rev 000
	1-CKV-090-0452B	SHIELD BLDG VT MON SYS CHECK VLV	KU01	UN-3-150-C	BWV285	BOM 1540 Rev 000
	1-FC-090-0014	SAMPLE RM PART MON FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
-	1-FC-090-0062	LWR COMPT REAC BLDG PART MON FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
	FC-090-0106B-A	CNTMT BLDG LWR COMPT MON IODINE FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
	-FC-090-0112B-B	CNTMT BLDG UP COMPT MON IODINE FLOW CONT	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
	1-FC-090-0452	SHIELD BLDG VT MON SYS PRI SA FL CONTROLLER	KU01/*	4200	BYA227J	BOM 982 rev 0
	1-FCV-090-0107-A	CNTMT BLDG LOWER COMPT AIR RAD MON SUPPLY	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0108-B	CNTMT BLDG LOWER COMPT AIR RAD MON SUPPLY	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0109-B	CNTMT BLDG LOWER COMPT AIR RAD MON SUPPLY	K085	TV-D-9957X01AC		BOM 729 Rev 000
	1-FCV-090-0110-B	CNTMT BLDG LOWER COMPT AIR RAD MON RETURN	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0111-A	CNTMT BLDG LOWER COMPT AIR RAD MON RETURN	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0112A-B	CNTMT BLDG UPPER COMPT AIR RAD MON FAN A FLO	B074	D2T-H18SS	BQT868	BOM 1003 Rev 000
	1-FCV-090-0113-A	CNTMT BLDG UPPER COMPT AIR RAD MON SUPPLY	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0114-B	CNTMT BLDG UPPER COMPT AIR RAD MON SUPPLY	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0115-B	CNTMT BLDG UPPER COMPT AIR RAD MON SUPPLY	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0116-B	CNTMT BLDG UPPER COMPT AIR RAD MON RETURN	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0117-A	CNTMT BLDG UPPER COMPT AIR RAD MON RETURN	K085	TV-D-9957X01AC	AWG199	BOM 729 Rev 000
	1-FCV-090-0452	SHIELD BLDG VT MON SYS PRI SA FCV	KU01	1361D7008	BXT905L	BOM 1048 rev 0
	1-FE-090-0400A1	SHIELD BLDG VT MON SYS CNTMT PURGE A FL ELEM 1	KU01	KB12-316-HT-4-TSD	BXV600	BOM 1226 Rev 000
	1-FE-090-0400A2	SHIELD BLDG VT MON SYS CNTMT PURGE A FL ELEM 2	KU01	KB12-316-HT-4-TSD	BXV600	BOM 1226 Rev 000
	1-FE-090-0400A3	SHIELD BLDG VT MON SYS CNTMT PURGE A FL ELEM 3	KU01	KB12-316-HT-4-TSD	BXV600	BOM 1226 Rev 000
	1-FE-090-0400A4	SHIELD BLDG VT MON SYS CNTMT PURGE A FL ELEM 4	KU01	KB12-316-HT-4-TSD	BXV600	BOM 1226 Rev 000
	1-FE-090-0400B1	SHIELD BLDG VT MON SYS CNTMT PURGE'B FL ELEM 1	KU01	KB12-316-HT-4-TSD		BOM 1226 Rev 000
		SHIELD BLDG VT MON SYS CNTMT PURGE B FL ELEM 2		KB12-316-HT-4-TSD		BOM 1226 Rev 000
	1-FE-090-0400B3	SHIELD BLDG VT MON SYS CNTMT PURGE B FL ELEM 3	KU01	KB12-316-HT-4-TSD		BOM 1226 Rev 000
		SHIELD BLDG VT MON SYS CNTMT PURGE B FL ELEM 4		KB12-316-HT-4-TSD		BOM 1226 Rev 000
		SHIELD BLDG VT MON SYS ABGTS FLOW ELEMENT 1		KB12-316-HT-4-TSD		BOM 1225 Rev 000
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1-FE-090-0400C2	SHIELD BLDG VT MON SYS ABGTS FLOW ELEMENT 2	KU01	KB12-316-HT-4-TSD	BXV604X BOM 1225 Rev 001
1-FE-090-0400C3	SHIELD BLDG VT MON SYS ABGTS FLOW ELEMENT 3	KU01	KB12-316-HT-4-TSD	BXV604X BOM 1225 Rev 000
1-FE-090-0400C4	SHIELD BLDG VT MON SYS ABGTS FLOW ELEMENT 4	KU01	KB12-316-HT-4-TSD	BXV604X BOM 1225 Rev 000
1-FE-090-0400D1	SHIELD BLDG VT MON SYS EGTS FLOW ELEMENT 1	KU01		BXV598 BOM 1227 Rev 000
1-FE-090-0400D2	SHIELD BLDG VT MON SYS EGTS FLOW ELEMENT 2	KU01	KB12-316-HT-3-TSD	BXV598 BOM 1227 Rev 000
1-FE-090-0400D3	SHIELD BLDG VT MON SYS EGTS FLOW ELEMENT 3	KU01	KB12-316-HT-3-TSD	BXV598 BOM 1227 Rev 000
1-FI-090-0129	CNDS VAC PMP AIR EXH PART-IODINE SAMP	D295	VFA-9-SSV	AYM906 BOM 1684 rev 0
1-FI-090-0400A	SHIELD BLDG VT MON SYS LOW RANGE FLOW IND	B440	13012CL28A	BYB659F BOM 1767 rev 0
1-FI-090-0400B	SHIELD BLDG VT MON SYS MID/HIGH RANGE FLOW IN	D 8440	1355EA2DCJA1A	BRX592 BOM 1766 rev 0
1-FI-090-0404	COND VAC VT NOBLE GAS FLOW INDICATOR	D295	VFB-66-SS	BYA380 BOM 1685 rev 0
1-FM-090-0400A	SHIELD BLDG VT MON SYS FLOW CMPTR/MODIFIER	KU01	155	BYA182E BOM 1229 rev 0
1-FS-090-0014	SAMPLE RM PART MON LOW FLOW SW	B074	D2T-H18SS	BQT868 BOM 1003 Rev 000
1-FS-090-0062	LOWER COMPT REAC BLDG PART MON LOW FLOW	B074	D2T-H18SS	BQT868 BOM 1003 Rev 000
1-FS-090-0099	ABANDONED IN PLACE	B074	D2T-H18SS	BQT868 BOM 1003 Rev 000
1-FS-090-0106A-A	CNTMT BLDG LWR COMPT AIR MON PART LO FLOW	G063	D2T-H18SS	BQT868 BOM 1003 Rev 000
1-FS-090-0112A-B	CNTMT BLDG UP COMPT MON PART LOW FLOW	G063	SWITCH #D2T-H18SS	BQT868 BOM 1003 Rev 000
1-FS-090-0119	COND VAC PMP AIR EXH MON LOW FLOW	B074	D2T-H18SS	BQT868 BOM 1003 Rev 000
1-FS-090-0129	CNDS VAC PMP AIR EXH PART IODINE SAMP	B069	D2T-H18SS	BQT868 BOM 1003 Rev 000
1-FS-090-0130-A	CNTMT PURGE AIR EXH MON LOW FLOW SW	B074	D2T-H18SS	BQT868 BOM 1003 Rev 000
1-FS-090-0131-B	CNTMT PURGE AIR EXH MON LOW FLOW SW	B074	D2T-H18SS	BQT868 BOM 1003 Rev 000
-FS-090-0400	SHIELD BLDG VT MON SYS SAMPLE LOW FLOW SWITC	S637	03600895-001	BRY280 BOM 1768 rev 0
-FS-090-0404	COND VAC VT NOBLE GAS SAMPLE LOW FLOW SWITC		D420VXTA	CAP631 BOM 1425 REV 0
1-FSV-090-0400A	SHIELD BLDG VT MON SYS LOW RANGE FLOW SOL VL	A609	WPHTX8210B30EMB12	BRX620 BOM 1727 rev 0
1-FSV-090-0400B	SHIELD BLDG VT MON SYS MID/HIGH RNG FL SOL VLV		WPHB8262A152E	BRX610 BOM 1725 rev 0
1-FSV-090-0400C	SHIELD BLDG VT MON SYS LOW RNG AIR SUP FL SOL	A609	WPHB8218C87EMB	BRX405J BOM 1728 rev 0
1-FSV-090-0400D	SHIELD BLDG VT MON SYS MID/HI RNG AIR SUP FSV	A610	WPHB8262B230E	BRX394 BOM 1726 rev 0
1-FSV-090-0402A1	SHIELD BLDG VT MON SYS LOW RANGE SA FLTR A FS		WPHB8210C87EMB	BRX405J BOM 1728 rev 0
1-FSV-090-0402A2	SHIELD BLDG VT MON SYS LOW RANGE SA FLTR B FS		WPHB8210C87EMB	BRX405J BOM 1728 rev 0
1-FSV-090-0402A3	SHIELD BLDG VT MON SYS LOW RANGE GRAB SA 1 FS		WPHB8210C87EMB	BRX405J BOM 1728 rev 0
1-FSV-090-0402B1	SHIELD BLDG VT MON SYS MID/HI RANGE SA FLTR C	A610	WPHB8262B230E	BRX394 BOM 1726 rev 0
1-FSV-090-0402B2	SHIELD BLDG VT MON SYS MID/HI RANGE SA FLTR D	A610	WPHB8262B230E	BRX394 BOM 1726 rev 0
1-FSV-090-0402B3	SHIELD BLDG VT MON SYS MID/HI RANGE GRAB SA 2	A610	WPHB8262B230E	BRX394 BOM 1726 rev 0 BRX394 BOM 1726 rev 0
1-HS-090-0112A-B	CNTMT BLDG UP COMPT MONFAN A MTR CNTL ON/OF		CLASS 2510	BPV719 BOM 1415 rev 0000
1-HS-090-0112B-B	CNTMT BLDG UP COMPT MONFAN B MTR CNTL ON/OF		CLASS 2510	BPV719 BOM 1415 rev 0000
1-HS-090-0131-B	CNTMT PURGE AIR EXH MON PUMP	S345	CLASS 9001	BPV719 BOM 1415 REV 0
1-HS-090-0452A	SHIELD BLDG VT MON SYS PRI SA FL VAC PMP 1 HS	SI01	3SB02-3MKB	BXX604K BOM 984 Rev 000
1-HS-090-0452B	SHIELD BLDG VT MON SYS PRI SA FL VAC PMP 2 HS	SI01	3SB02-3MKB	BXX604K BOM 984 Rev 000
1-ISIV-090-0452A	SHIELD BLDG VT MON SYS VAC PMP 1 DISCH ISOL	KU01	96-4-RT-4-L	BXV574B BOM 1220 Rev 000
1-ISIV-090-0452B	SHIELD BLDG VT MON SYS VAC PMP 2 DISCH ISOL	KU01	96-4-RT-4-L	BXV574B BOM 1220 Rev 000 BXV574B BOM 1220 Rev 000
1-ISIV-090-0452C	SHIELD BLDG VT MON SYS PRI SA INLET ISOL VLV	KU01	96-4-RT-4-L	BXV574B BOM 1220 Rev 000 BXV574B BOM 1220 Rev 000
1-MTR-090-0014A	MOTOR FOR 1-PMP-90-14	G292	0281-5050-01	BXW3748 BOM 1220 Rev 000 BXM141 BOM 387 Rev 000
1-MTR-090-0062A	MOTOR FOR 1-PMP-90-62	B060	L1319TF374	
1-MTR-090-0099	ABANDONED IN PLACE	G292	ELB281-5050-3 ITE	BXM141 BOM 387 Rev 000
1-MTR-090-0119	MOTOR FOR 1-PMP-90-119	G292	ELB281-5050-3 ITE	BYY762L BOM 366 rev 0000 BYY762L BOM 366 rev 0000

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RE-90-112, A, C

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1-MTR-090-0404 MOTOR FOR 1-PMP-90-404 R165 28950 BXV745A BOM 1465 Rev 000 1-PI-090-0452A SHIELD BLDG VT MON SYS PRI SA FL PRESS IND 1 E010 271950 BXX613H BOM 1444 Rev 000 1-PI-090-0452B SHIELD BLDG VT MON SYS PRI SA FL PRESS IND 2 E010 271950 BXX613H BOM 1444 Rev 000 1-PLOT-090-0452 SHIELD BLDG VT MON SYS PRI SA FL PRINTER KU01 155 BXY089R BOM 1769 Rev 000 1-PMP-090-0452A SHIELD BLDG VT MON SYS PRI SA FL VAC PMP 1 **KU01** 036104 BXT903 BOM 1049 rev 0 1-PMP-090-0452B SHIELD BLDG VT MON SYS PRI SA FL VAC PMP 2 KU01 036104 BXT903 BOM 1049 rev 0 1-PS-090-0452A SHIELD BLDG VT MON SYS PRI SA FL PRESS SW 1 M235 AP-7021-153-33 BWJ246 BOM 1221 rev 0 1-PS-090-0452B SHIELD BLDG VT MON SYS PRI SA FL PRESS SW 2 M235 AP-7021-153-33 BWJ246 BOM 1221 rev 0 1-PX-090-0405 COND VAC VT NOBLE GAS POWER SUPPLY P015 PS-12360 CAP544 BOM 2344 REV 0 1-REEL-090-0450 TAKEUP REEL FOR 1-RR-090-0450 D033 APP-TR50 BKN624 BOM 2296 Rev 000 SHIELD BLDG VT MON SYS PRI SA FL VAC RELIEF 1-RFV-090-0452 **KU01** 4614K12 BXT904N BOM 1050 rev 0 1-RM-090-0106TA-A CNTMT BLDG LWR COMPT MON ISOLATOR (P) EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0106TB-A CNTMT BLDG LWR COMPT MON ISOLATOR (G) EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0106TC-A CNTMT BLDG LWR COMPT MON ISOLATOR (I) EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0112TA-B CNTMT BLDG UP COMPT MON ISOLATOR (P) EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0112TB-B CNTMT BLDG UP COMPT MON ISOLATOR (G) EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0112TC-B CNTMT BLDG UP COMPT MON ISOLATOR (I) EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0130T-A CNTMT PURGE AIR EXH MON ISOLATOR EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0131T-B CNTMT PURGE AIR EXH MON ISOLATOR EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0210B BACKUP SOURCE RNG CHANNEL DRAWER ASSY 6051D50G01 CAF180 BOM 920 rev 0000 RM-090-0271T-A UPR INS CNTMT POST ACD MON ISOLATOR EM03 175C304 BNQ423 BOM 1403 rev 0000 RM-090-0272T-B UPR INS CNTMT POST ACD MON ISOLATOR EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RM-090-0273T-A LWR INS CNTMT POST ACD MON ISOLATOR **FM03** 175C304 BOM 1403 rev 0000 BNQ423 1-RM-090-0274T-B LWR INS CNTMT POST ACD MON ISOLATOR EM03 175C304 BNQ423 BOM 1403 rev 0000 1-RR-090-0450 RAD MON CNTL RM PRINTER D033 APP-48A1 **CAE828** BOM 1416 Rev 000 1-ZS-090-0107-A CNTMT BLDG LOWER COMPT MON-ISV POS SW N007 EA180-12302 BOM 564 Rev 000 BVG941 1-ZS-090-0107B-A CNTMT BLDG LWR COMPT MON-ISOL VLV POS SW N007 EA18012302 BVG943 BOM 1044 REV 2 1-ZS-090-0108-B CNTMT BLDG LOWER COMPT MON-ISV POS SW N007 EA180-14302 BVG940 BOM 854 Rev 000 1-ZS-090-0109-B CNTMT BLDG LOWER COMPT MON-ISV POS SW N007 EA180-14302 BVG940 BOM 854 Rev 000 1-ZS-090-0110-B CNTMT BLDG LOWER COMPT MON-ISV POS SW N007 EA180-14302 BVG940 BOM 854 Rev 000 1-ZS-090-0111-A CNTMT BLDG LOWER COMPT MON-ISV POS SW N007 EA180-11302 **BVG943** BOM 1044 REV 2 1-ZS-090-0111B-A CNTMT BLDG LWR COMPT MON-ISOL VLV POS SW N007 EA18011302 BVG941 BOM 564 Rev 000 1-ZS-090-0113-A CNTMT BLDG UPPER COMPT MON-ISV POS SW N007 EA180-12302 BVG941 BOM 564 Rev 000 1-ZS-090-0113B-A CNTMT BLDG UP COMPT MON ISOL VLV POS SW N007 EA18012302 **BVG943** BOM 1044 REV 2 1-ZS-090-0114-B CNTMT BLDG UPPER COMPT MON-ISV POS SW N007 EA180-14302 **BVG940** BOM 854 Rev 000 1-ZS-090-0115-B CNTMT BLDG UPPER COMPT MON-ISV POS SW N007 EA180-14302 BVG940 BOM 854 Rev 000 1-ZS-090-0116-B CNTMT BLDG UPPER COMPT MON-ISV POS SW N007 EA180-14302 BOM 854 Rev 000 BVG940 1-ZS-090-0117-A CNTMT BLDG UPPER COMPT MON-ISV POS SW N007 EA180-11302 BVG943 BOM 1044 REV 2 CNTMT BLDG UP COMPT MON ISOL VLV POS SW 1-ZS-090-0117B-A N007 EA18011302 BVG941 BOM 564 Rev 000 2-FCV-090-0113-A CNTMT BLDG UP COMPT MON-ISOL VLV K085 TV-D-9957 AWG199 BOM 729 Rev 000 2-FCV-090-0114-B CNTMT BLDG UP COMPT MON-ISOL VLV K085 TV-D-9957 AWG199 BOM 729 Rev 000 2-FCV-090-0115-B CNTMT BLDG UP COMPT MON-ISOL VLV K085 TV-D-9957 AWG199 BOM 729 Rev 000 2-FCV-090-0116-B CNTMT BLDG UP COMPT MON-ISOL VLV K085 TV-D-9957 AWG199 BOM 729 Rev 000 2-FCV-090-0117-A CNTMT BLDG UP COMPT MON-ISOL VLV K085 TV-D-9957 AWG199, BOM 729 Rev 000

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