18 STA. #2

OCT 2 1 1996

ENGINEERING DATA TRANSMITTAL

Page 1 of _____

1. EDT 618166

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Capsule Management Team	Capsule Management Team	N/A
5. Proj./Prog./Dept./Div.:	**6. Design Authority/ Design Agent/Cog. Engr.:**	**7. Purchase Order No.:**
Capsule Management Team	Mario M. Pereira	N/A

8. Originator Remarks:
Transmittal and release of the supporting document which compiles documentation associated with the Waste Encapsulation and Storage Facility (WESF), facility preparation for receiving 25 capsules from the Applied Radiant Energy Corporation (ARECO).

9. Equip./Component No.: N/A

10. System/Bldg./Facility: N/A

11. Receiver Remarks: 11A. Design Baseline Document? [ ] Yes [X] No
Comments have been incorporated

12. Major Assm. Dwg. No.: N/A

13. Permit/Permit Application No.: N/A

14. Required Response Date: N/A

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-WM-RRR-010	N/A	0	WESF preparation for receiving 25 capsules from the ARECO.	N/A	1,2	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION
(See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature (M) MSIN	(L) Date	(G) Reason	(H) Disp.	(J) Name	(K) Signature (M) MSIN	(L) Date
2	1	Design Authority	M. M. Pereira	S6-51			Env.	NA	
2	1	Design Agent		10/17/96			Safety	NA	
		Cog.Eng.		10/17/96 S4-70					
		Cog. Mgr.	J. L. Pennock	10/17/96 S4-70					
		QA	NA						

18.	19.	20.	21. DOE APPROVAL (if required)
Signature of EDT Originator Date 10/17/96		10/17/96 J. L. Pennock	Ctrl. No.

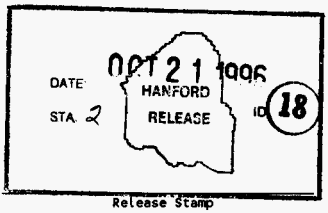
Documentation associated with the WESF preparation for receiving 25 cesium capsules from the Applied Radiant Energy Corporation (ARECO).

Michael W. Pawlak
B&W Hanford Company, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 618166 UC: 510
Org Code: 16E00 Charge Code: KW63F
B&R Code: EW3135090 Total Pages: 663

Key Words: Waste Encapsulation and Storage Facility (WESF), Applied Radiant Energy Corporation (ARECO), Beneficial Uses Shipping System (BUSS) cask, and Performance Indicators.

Abstract: The purpose of this report is to compile all documentation associated with facility preparation of WESF to receive 25 cesium capsules from ARECO. The WESF validated it's preparedness by completing a facility preparedness review using a performance indicator checklist.



Release Approval — Date: 10/21/96

Release Stamp

Approved for Public Release

Table of Contents

1.0 Introduction

The purpose of this report is to compile all the documentation necessary to document the Waste Encapsulation and Storage Facility (WESF) preparation for receiving and unloading the Beneficial Uses Shipping System (BUSS) cask. The WESF site, located at Hanford Washington (200 East area), was prepared by Westinghouse Hanford Company to receive the 25 cesium capsules, which are currently stored at the Applied Radiant Energy Corporation (ARECO) facility. The site proved its preparedness by completing a WESF preparedness review.

The preparedness review was conducted using a performance indicator checklist that was developed in December 1993, by engineering with close assistance from Operations.

2.0 Discussion

The removal of the cesium capsules from the ARECO facility was requested by the United States Department of Energy-Headquarters (DOE-HQ). The capsules are to be returned to WESF. An important aspect of the return program is the preparedness of the WESF site and staff to accept the capsules. The WESF site will have to complete a performance indicator review of the Cesium Return Program.

The WESF site had to prove its preparedness by passing their own Preparedness Review. This review is a checklist of performance indicators, which will demonstrate that WESF is prepared to receive the cesium capsules from ARECO. The checklist covers the areas of:

- Management Controls
- Administrative Controls
- Personnel Readiness
- Equipment and Systems
  Environmental, Safety, Health, and Quality Assurance

The basic elements of management controls are established to support capsule return to WESF. The management must show that: the organizational management position understood, self assessments practices have been established to identify program weaknesses as well as employee concerns, and they have established an effective channel of communications.

Administrative controls are employed for activities that affect safe, reliable, and environmental compliant operations. The administration must show that; an effective configuration management system has been implemented, activities are planned and are covered by the WESF FSAR, a document control system is used to assure availability of current required documents, required operating procedures are available and adequately provide direction for safe operation and capsule movement, compliance with safety and environmental requirements are maintained, and a procurement and materials management system is implemented.

A personnel program is in place to ensure sufficient qualified staff. Personnel readiness must show that; training records are being met, and sufficient staffing is available to meet safety and environmental requirements.

Verification has been obtained which assures that equipment, structures, and system functions in a safe and effective manner in accordance with functional and design requirements. Equipment and systems must have; an effective testing program has been established and implemented including definition of testing requirements and evaluation of the test data, completion of work packages required for cesium capsule receipt, and that plant systems and facilities supporting cesium capsule return program are all operational.

The environmental, safety, health, and quality assurance must show that, independent oversight by safety, environmental, health, and quality assurance programs for the activities associated with the receipt of cesium capsules have been completed.

The performance indicator checklist items were completed on August 14, 1996, reference letter 16E00-96-113 "Completion of Prepardness Review for Applied Radiant Energy Corporation Capsule Shipments." The B Plant manager has approved the checklist items stating that all of the documentation is in place. According to WESF's self assessment, WESF is prepared to resume capsule shipments.

3.0 Summary

The WESF site is prepared to receive the cesium capsules. The WESF performance indicator checklist has been approved by the B Plant manager identifying all completed activities associated with capsule return program. The facility and staff documented that WESF is prepared to receive and unload the BUSS cask.

Appendix Ai: Performance Indicator Review Checklist

Westinghouse Hanford Company | **Internal Memo**

From: Waste Encapsulation Storage Facility 16E00-96-113
Phone: 373-3752 S4-70
Date: August 14, 1996
Subject: COMPLETION OF PREPAREDNESS REVIEW FOR APPLIED RADIANT ENERGY CORPORATION CAPSULE SHIPMENTS

To: R. E. Heineman, Jr. S4-70

cc: L. D. Brist S6-51 M. M. Pereira S6-51
J. C. Midgett S6-51 P. T. Saueressig S6-51
M. W. Pawlak S6-51 JLP/LB

References: (1) Internal Memo, J. L. Pennock to B. M. Auckland, et al, "WESF Preparedness for Receiving Applied Radiant Energy Corporation Cesium Capsules," 16E20-96-105, Rev 1, dated July 25, 1996

(2) Internal Memo, J. L. Pennock to B. M. Auckland, et al, "WESF Preparedness for Receiving Applied Radiant Energy Corporation Cesium Capsules," 16E20-96-105, Rev 0, dated July 2, 1996.

Attached for your information is item 5.1.1 of WESF Preparedness Checklist. The Preparedness Checklist demonstrates WESF's readiness to receive cesium capsule shipments from the Applied Radiant Energy Corporation (ARECO). Checklist item 5.1.1 describes the remaining outstanding items/limitations and is being included as Attachment 1. Two items identified in Attachment 1 required completion prior to capsule loading at ARECO. These two required items were completed on August 8, 1996. The entire file of Checklist Items has been sent to M. W. Pawlak for compiling into a supporting document.

Based on the above review and the completion of facility review required in operating procedure EO-100-023 (Attachment 2), the shipment from ARECO is authorized.

If you have any questions, please contact P. T. Saueressig on 372-0071 or me on 373-3752.

J. L. Pennock
WESF Project Activity Manager

pan

Attachments (2)

WESF PREPAREDNESS FOR ARECO CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

5.1.1

Acceptance Criteria:

Review and approval of the performance indicators in this document for the receipt of cesium capsules as evidenced by signatures by the appropriate oversight organizations when the document is issued as a supporting document.

Discussion:

Each of the preparedness items were reviewed and any outstanding items or work which must be completed in the future (i.e., monthly PMs, calibrations) are on a attached punchlist.

Supporting Documentation:

Punchlist containing outstanding items/limitations for all WESF preparedness checklist items for ARECO cesium capsule return checklist items.

Outstanding Items/Limitations:

Two punchlist items (4.2.1.2 and 4.2.6.1) are required to be completed prior to loading the BUSS cask. The remaining punchlist items are performed during the shipping campaign and are on the list to ensure no delays are incurred during the unloading process.

Completion: L. D. Brist Date: 8/5/96

Concurrence: P. T. Saueressig Date: 8/5/96

Outstanding Items/Limitations for Checklist Item 5.1.1

Original Item	Description	Assignee	Required Completion	Actual Completion
2.4.1	Reissue per RWP request the RWP's (B-424,B-457) required for Buss Cask activities at WESF in August and September	K. Jamison	Departure of BUSS cask from ARECO and before arrival at WESF	
3.2.2	Verify non CMT craft members are utilized for cask unloading have complete Facility Emergency Checklist.	P. T. Saueressig	As required	
3.2.3	Verify assigned operators have reviewed and signed PCSSS sheets prior to work at WESF.	P. T. Saueressig	Between departure from ARECO and arrival at WESF	
4.1.1 4.1.2 4.2.1.2	Verification of calibrations and preventive maintenance after July 31, 1996 will be tracked and completed using the Job Control System and not as a special item(s) on this check list.	R. D. Warren	N/A	
4.2.1.2	2B-96-1245, 2C35014, Complete G Cell hoist Inspection	L. L. Nunn	8/15/96*	
4.2.6.1	G Cell: Smear G Cell Pass-through Truck Port: Move waste cask, smear and decon floor	G. L. Garman D. O. Dobson	8/15/96*	
4.2.6.1	Canyon: New Sisalcraft paper for cask laydown area (NOTE: this task is performed as cask is transferred into the canyon for ALARA reasons)	P. T. Saueressig	During BUSS cask transfer preparations into canyon	

* 8/15/96 implies prior to loading capsules at ARECO

PRESTART DATA SHEET
(Page 1 of 4)

Shipment No. WRM - 6032

3.3 [1] Quality Control shall verify that the **WESF 15-ton canyon crane** meets the requirements of DOE-RL-92-36 for the following criteria:

[a] QC shall verify that the crane yokes or certified rigging equipment are properly tagged and inspections are current.

DLH / 8-13-96
QC Initials / Date

[b] Periodic inspection performed at specified interval are current.

DLH / 8-13-96
QC Initials / Date

[b] Monthly wire rope inspection performed and current.

DLH / 8-13-96
QC Initials / Date

[b] 3rd party inspection performed at specified interval and current.

DLH / 8-13-96
QC Initials / Date

[b] Hook inspection performed at specified interval and current.

DLH / 8-13-96
QC Initials / Date

[c] The inspections performed in **[3.3] [1] [a] and [b]** do not expire within the next 30 days (with the exception of the monthly wire rope inspection).

DLH / 8-13-96
QC Initials / Date

Dennis L. Homan
QC (Print Name)

Dennis L Homan / 8-13-96
QC Signature / Date

PRESTART DATA SHEET
(Page 2 of 4)

Shipment No. WRM - 6032

3.3 [2] Quality Control shall verify that the **Aceco 25-ton crane** meets the requirements of DOE-RL-92-36 for the following criteria:

[a] QC shall verify that the crane yokes or certified rigging equipment are properly tagged and inspections are current.

DLH / 8-13-96
QC Initials / Date

[b] Periodic inspection performed at specified interval are current.

DLH / 8-13-96
QC Initials / Date

[b] Monthly wire rope inspection performed and current.

DLH / 8-13-96
QC Initials / Date

[b] 3rd party inspection performed at specified interval and current.

DLH / 8-13-96
QC Initials / Date

[b] Hook inspection performed at specified interval andcurrent.

DLH / 8-13-96
QC Initials / Date

[c] The inspections performed in **[3.3] [2] [a]** and **[b]** do not expire within the next 30 days (with the exception of the monthly wire rope inspection).

DLH / 8-13-96
QC Initials / Date

Dennis L. Homan
QC (Print Name)

Dennis L Homan / 8-13-96
QC Signature / Date

PRESTART DATA SHEET
(Page 3 of 4)

Shipment No. WRM - 6032

3.3 [3] Quality Control shall verify that the forklift meets the requirements of section 6 of DOE-RL-92-36 and will not expire within 30 days.

DLH / 8-13-96
QC Initials / Date

3.3 [4] Quality Control shall verify that operations has qualified personnel as follows:

[a] QC shall verify that the designated operator has been certified as a WESF byproducts cask handling operator per WHC Technical Training Course No. 400490. List operators qualified:

Wabaunsee, Jim — Print Name (Last, First)
Garman, Glenn — Print Name (Last, First)
Lanman, Lindy — Print Name (Last, First)
DLH / 8-13-96 — QC Initials / Date

[b] QC shall verify that the designated crane operator has been certified as a B Plant/WESF crane operator per (WHC Technical Training Courses # 401300 and # 402210). List operators qualified:

John Eberle — Print Name (Last, First)
N/A — Print Name (Last, First)
N/A — Print Name (Last, First)
DLH / 8-13-96 — QC Initials / Date
Dennis L. Homan — QC (Print Name)
Dennis L Homan / 8-13-96 — QC Signature / Date

3.3 [5] Operations facility readiness walkdown.

[a] Operations shall perform a facility walkdown and report to Engineering any abnormal conditions related to receipt of cask shipment.

[signature] / 8/13/96
Ops Supervision / Date

[b] Operations shall verify abnormal conditions reported in 3.3 [5] [a] are resolved for receipt of cask.

[signature] / 8/13/96
Ops Supervision / Date

PRESTART DATA SHEET
(Page 4 of 4)

Shipment No. WRM - 6032

3.3 [6] The WESF facility is prepared for receipt of the Beneficial Uses Shipping System (BUSS) Cask. The shipper is hereby authorized to load capsules on the specified date. Capsules will be unloaded by the 30th day following the placement of the cask lid on the cask body.

Paul T Sauerseig — 8/13/96
Operations Supervision/Signature — Date

[a] A copy of this data sheet has been faxed to the shipper.

0900 — 08/14/96 — Paul T Sauerseig / 8/14/96
Time — Date — Ops Supervision — Date

Shippers Name (Print) — Date of Initial Loading

Date of lid Installation — Date: 30th Day Requirement

3.3 Preconditions for unloading BUSS cask at WESF.

[7] A pre-job safety meeting was held per WHC-CM-5-6, section 5.20 and the agenda has been placed in file.

Ops Supervision / Date

[8] Verify items listed in section 3.2 are available. List any exceptions and justification if not available:

Ops Supervision / Date

Westinghouse Hanford Company | **Internal Memo**

From: WESF Capsule Management Team 16E20-96-105
Phone: 372-0071 S6-51
Date: July 2, 1996
Subject: WESF PREPAREDNESS FOR RECEIVING APPLIED RADIANT ENERGY CORPORATION CESIUM CAPSULES

To: R. E. Heineman, Jr. S6-60

cc:

B. M. Auckland	S6-62	D. M. Haggerty	S6-82
L. D. Brist	S6-51	M. W. Pawlak	S6-51
C. Clemmons	S6-70	J. L. Pennock	S4-70
L. I. Covey	S6-51	M. M. Pereira	S6-51
S. J. Davis	S6-51	P. T. Saueressig	S6-65
D. O. Dobson	S6-59	W. R. Shannon	S6-51
S. C. Froehlich	S6-60	M. K. Ullah	S6-69
T. Gainey	S6-51	R. D. Warren	S6-70
G. L. Garman	S4-70	JLP File/LB	S6-51

ACTION
DUE DATE: JULY 31, 1996

Attached is a checklist of performance indicators which will demonstrate that WESF is prepared to receive Applied Radiant Energy Corporation (ARECO) cesium capsules. The compilation of the required documentation must be completed to meet the required schedule for ARECO capsule shipments beginning in August. Please forward the completed checklist items with the required documentation to Larry Brist by the required completion date.

If you have any questions, do not hesitate to contact Paul Saueressig on 372-0071.

J. L. Pennock
Project Activity Manager WESF

jks

Attachment

WESF PREPAREDNESS REVIEW, CESIUM CAPSULE ACCEPTANCE
PERFORMANCE INDICATORS CHECK LIST REQUIREMENTS

1.0 MANAGEMENT CONTROLS

The basic elements of management controls are established to support capsule return to WESF.

1.1 The organizational structure is clearly defined with responsibilities and authorities of each position understood.

1.1.1 Acceptance Criteria: A meeting has been conducted to discuss specific responsibilities and authorities for receipt of cesium capsules.

Due date: 7/9/96

Completion: _____ Date: _____
P. T. Saueressig

Mgr. Approval: _____ Date: _____
J. L. Pennock

1.1.2 Acceptance Criteria: Evidence that personnel have reviewed the procedures and clearly understand their responsibilities and authorities and the roles of other interfacing organizational components directly involved with the receipt of cesium capsules.

Due date: 7/26/96

Completion: _____ Date: _____
P. T. Saueressig

Mgr. Approval: _____ Date: _____
J. L. Pennock

1.2 Self-assessment practices have been established to identify program weaknesses including response to employee concerns which may effect capsule return.

1.2.1 Acceptance Criteria: Evidence of actions addressing employee concerns in the area of safety, quality or environmental consequences as they relate to the cesium capsule return program.

Due date: 7/9/96

Completion: _____ Date: _____
P. T. Saueressig

Mgr. Approval: _____ Date: _____
J. L. Pennock

1.3 Management has established effective channels of communications.

1.3.1 Acceptance Criteria: Evidence of effective communication at all organizational interfaces, including matrixed organizations that are involved with the cesium capsule return program.

Due date: 7/15/96

Completion: _____ Date: _____
P. T. Saueressig

Mgr. Approval: _____ Date: _____
J. L. Pennock

2.0 **ADMINISTRATIVE CONTROLS**

Administrative controls are employed for activities that affect safe, reliable, and environmental compliant operation.

2.1 Planned activities are covered by the WESF Safety Basis.

2.1.1 Acceptance Criteria: Planned activities associated with receipt of cesium capsules are covered by the WESF Safety Basis with comments resolved.

Due date: 7/9/96

Completion: _____
L. I. Covey

Concurrence: _____ Date: _____
P. T. Saueressig

2.1.2 Acceptance Criteria: Affidavit stating the facility operating procedures and changes related to the cesium capsule return to WESF are reviewed and approved for compatibility with the WESF Safety Basis.

Due date: 7/29/96

Completion: _____ Date: _____
M. W. Pawlak

Concurrence: _____ Date: _____
P. T. Saueressig

2.1.3 Acceptance Criteria: Affidavit with Safety's concurrence stating that no open unreviewed safety questions exist involving the cesium capsule return.

Due date: 7/15/96

Completion: _____ Date: _____
L. I. Covey

Concurrence: _____ Date: _____
P. T. Saueressig

Safety Concurrence: _____ Date: _____
M. K. Ullah

2.2 A document control system is used to assure availability of current required documents.

2.2.1 Acceptance Criteria: Evidence that all required procedures involving WESF capsule return activities and Beneficial Uses Shipping System (BUSS) cask operations are upgraded, issued, and maintained to IP-1182.

Due date: 7/9/96

Completion: _____ Date: _____
M. W. Pawlak

Mgr. Approval: _____ Date: _____
J. L. Pennock

2.2.2 Acceptance Criteria: Evidence that no inadequacies (outstanding BP-2's) have been identified in procedures for WESF BUSS cask operations.

Due date: 7/10/96

Completion: _____ Date: _____
S. C. Froehlich

Concurrence: _____ Date: _____
P. T. Saueressig

2.3 Required operating procedures are available and adequately provide direction for safe operation and capsule movement.

2.3.1 Acceptance Criteria: Evidence that current procedures for the cesium capsule return activities are approved.

Due date: 7/15/96

Completion: _____ Date: _____
L. D. Brist

Concurrence: _____ Date: _____
P. T. Saueressig

2.4 Compliance with safety and environmental requirements is maintained.

2.4.1 Acceptance Criteria: Radiation Work Permits have been prepared and approved for the receipt of cesium capsules and are valid through the expected duration.

Due date: 7/15/96

Completion: _____ Date: _____
B. M. Auckland/L. L. Nunn

Concurrence: _____ Date: _____
P. T. Saueressig

3.0 PERSONNEL READINESS

A personnel program is in place to ensure sufficient qualified staff.

3.1 Required personnel are identified and available.

3.1.1 Acceptance Criteria: Documentation that identifies the number, discipline, qualification, and availability of the plant staff and matrix organizations required to assure readiness for cesium capsule return.

Due date: 7/9/96

Completion: _____ Date: _____
P. T. Saueressig

Mgr. Approval: _____ Date: _____
J. L. Pennock

3.2 Training requirements are being met.

3.2.1 Acceptance Criteria: Documentation that identifies the required training for the staff directly involved with the cesium capsule return activities (Operators, HPTs, and crane operators for the tasks).

Due date: 7/12/96

Completion: _____ Date: _____
D. M. Haggerty

Concurrence: _____ Date: _____
P. T. Saueressig

3.2.2 Acceptance Criteria: Training records are available showing each individual's training participation and performance for requirements are valid through the expected duration.

Due date: 7/26/96

Completion: _____ Date: _____
D. M. Haggerty

Concurrence: _____
P. T. Saueressig

3.2.3 Acceptance Criteria: Evidence that operating personnel have been trained to operating procedure updates or additions related to the return of cesium capsules.

Due date: 7/29/96

Completion: _____ Date: _____
L. D. Brist

Concurrence: _____ Date: _____
P. T. Saueressig

4.0 **EQUIPMENT AND SYSTEMS**

Verification has been obtained which assures that equipment, structures, and systems function in a safe and effective manner in accordance with functional and design requirements.

4.1 Completion of work packages required for cesium capsule receipt.

4.1.1 Acceptance Criteria: Documentation that shows outstanding WESF work packages, including those that require engineering, are evaluated to determine those that require completion prior to cesium capsule receipt. Management has concurred with the decisions on those packages that are not required for cesium capsule receipt.

Due date: 7/9/96

Completion: _____ Date: _____
R. D. Warren/C. Clemmons

Concurrence: _____ Date: _____
P. T. Saueressig

4.1.2 Acceptance Criteria: Documentation that shows all work packages identified in Section 4.1.1 have been completed.

Due date: 7/29/96

Completion: _____ Date: _____
R. D. Warren/C. Clemmons

Concurrence: _____
P. T. Saueressig

4.2 Plant systems and facilities supporting cesium capsule return program.

4.2.1 Mobile cranes, forklift, and hoist critical lifts

4.2.1.1 Acceptance Criteria: Documentation that shows cranes, hoists, and forklifts needed to receive the BUSS cask are available and will be committed to task during the windows planned to receive cesium capsules.

Due date: 7/8/96

Completion: _____ Date: _____
L. L. Nunn

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.1.2 Acceptance Criteria: Documentation that shows cranes, hoists, and forklifts to be used are current with all hoisting and rigging manual (successful completion of load tests, results of third party inspections, and performance of preventive maintenance).

Due date: 7/15/96

Completion: _____ Date: _____
L. L. Nunn

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.1.3 Acceptance Criteria: Documentation that shows all lifting yokes, shackles, and slings required for receiving cesium capsules, transported in the BUSS cask, have been identified and are compliant with the Hoisting and Rigging Manual requirements (inspections, load tests, and design safety factor) or discrepancies formally waived.

Due date: 7/15/96

Completion: _____ Date: _____
L. L. Nunn

Concurrence: _____ _____
P. T. Saueress

4.2.2 BUSS cask system

4.2.2.1 Acceptance Criteria: Documentation which demonstrates that the annual SARP-required testing program (PMs) has been completed.

Due date: 7/15/96

Completion: _____ Date: _____
M. M. Pereira/M. W. Pawlak

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.3 BUSS cask trailer

4.2.3.1 Acceptance Criteria: Documentation which demonstrates that the BUSS cask trailer is road worthy and ready for transport.

Due date: 7/15/96

Completion: _____ Date: _____
M. W. Pawlak

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.4 General support systems and facilities

4.2.4.1 Acceptance Criteria: Documentation that shows functional testing has been performed on the PAX phones, intercoms, compressed air supply, electrical outlets, radios, CCTV systems, emergency lighting, etc. that must be operational during the cesium capsule receipt activity.

Due date: 7/15/96

Completion: _____ Date: _____
S. J. Davis

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.4.2 Acceptance Criteria: Documentation showing completion of scheduled Preventive Maintenance for WESF equipment such as manipulators, cranes, etc. or justification why they will have no impact on the cesium recovery program.

Due date: 7/26/96

Completion: _____ Date: _____
L. D. Brist

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.5 Ancillary support equipment and materials

4.2.5.1 Acceptance Criteria: Documentation showing all ancillary equipment, tools, and materials defined by the procedures are available at WESF.

Due date: 7/12/96

Completion: _____ Date: _____
M. W. Pawlak

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.5.2 Acceptance Criteria: Documentation which demonstrates that instrumentation is calibrated and updated as required.

Due date: 7/26/96

Completion: _____ Date: _____
R. D. Warren/C. Clemmons

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.6 WESF

4.2.6.1 Acceptance Criteria: WESF housekeeping for areas affected by capsule return has been reviewed and found acceptable.

Due date: 7/15/96

Completion: _____ Date: _____
G. L. Garman/D. O. Dobson

Concurrence: _____ Date: _____
P. T. Saueressig

4.2.6.2 Acceptance Criteria: Project W-252 schedule, work scope and anticipated facility configuration (i.e, interim cooling, cleaning heat exchangers) has been reviewed to assure no impacts and/or interferences to capsule return activities.

Due date: 7/19/96

Completion: _____ Date: _____
W. R. Shannon

Concurrence: _____ Date: _____
P. T. Saueressig

5.0 ENVIRONMENTAL, SAFETY, HEALTH, AND QUALITY ASSURANCE

Safety, environmental, health, and quality assurance programs are established and effective.

5.1 Independent oversight by safety, environmental, health, and quality assurance programs for the activities associated with the receipt of cesium capsules have been completed.

5.1.1. Acceptance Criteria: Review and approval of the performance indicators in this document for the receipt of cesium capsules as evidenced by signatures by the appropriate oversight organizations when the document is issued as a supporting document.

Due date: 7/31/96

Completion: _____ Date:
L. D. Brist

Concurrence: _____
P. T. Saueressig

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

5.1.1

Acceptance Criteria:

Review and approval of the performance indicators in this document for the receipt of cesium capsules as evidenced by signatures by the appropriate oversight organizations when the document is issued as a supporting document.

Discussion:

Each of the preparedness items were reviewed and any outstanding items or work which must be completed in the future (i.e., monthly PMs, calibrations) are on a attached punchlist.

Supporting Documentation:

Punchlist containing outstanding items/limitations for all WESF preparedness checklist items for ARECO cesium capsule return checklist items.

Outstanding Items/Limitations:

Two punchlist items (4.2.1.2 and 4.2.6.1) are required to be completed prior to loading the BUSS cask. The remaining punchlist items are performed during the shipping campaign and are on the list to ensure no delays are incurred during the unloading process.

Completion: Larry Brist Date: 8/5/96
L. D. Brist

Concurrence: Paul T. Saueressig Date: 8/5/96
P. T. Saueressig

Outstanding Items/Limitations for Checklist Item 5.1.1

Original Item	Description	Assignee	Required Completion	Actual Completion
2.4.1	Reissue per RWP request the RWP's (B-424,B-457) required for Buss Cask activities at WESF in August and September	K. Jamison	Departure of BUSS cask from ARECO and before arrival at WESF	
3.2.2	Verify non CMT craft members are utilized for cask unloading have complete Facility Emergency Checklist.	P. T. Saueressig	As required	
3.2.3	Verify assigned operators have reviewed and signed PCSSS sheets prior to work at WESF.	P. T. Saueressig	Between departure from ARECO and arrival at WESF	
4.1.1 4.1.2 4.2.1.2	Verification of calibrations and preventive maintenance after July 31, 1996 will be tracked and completed using the Job Control System and not as a special item(s) on this check list.	R. D. Warren	N/A	
4.2.1.2	2B-96-1245, 2C35014, Complete G Cell hoist Inspection	L. L. Nunn	8/15/96*	8/8/96
4.2.6.1	G Cell: Smear G Cell Pass-through Truck Port: Move waste cask, smear and decon floor	G. L. Garman D. O. Dobson	8/15/96*	8/8/96
4.2.6.1	Canyon: New Sisalcraft paper for cask laydown area (NOTE: this task is performed as cask is transferred into the canyon for ALARA reasons)	P. T. Saueressig	During BUSS cask transfer preparations into canyon	

* 8/15/96 implies prior to loading capsules at ARECO

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

1.1.1

Acceptance Criteria:

A meeting has been conducted to discuss specific responsibilities and authorities for receipt of cesium capsules.

Discussion:

A meeting was held on July 8, 1996 to discuss the responsibilities and authorities for the receipt of cesium capsules from Applied Radiant Energy Corporation (ARECO). The Capsule Management Team has the responsibility and authority for the return of cesium capsules. The resources required to meet the schedule were discussed. Two critical resources are require from other teams or facilities (process crane operator and riggers). The critical resources will be schedule through the Near Term Planning Team with concurrence from the team coordinators to support the Capsule Management Team.

Supporting Documentation:

The following documentation is attached to support this affidavit:

The meeting minutes (July 8, 1996) Cesium Capsule Return from ARECO Responsibilities and Authorities.

The charter developed by the Capsule Management Team which defines the team responsibilities.

The organizational chart for the re-engineered teams which lists B Plant and WESF personnel under the new team structure.

Outstanding Items/Limitations:

None.

Completion: Paul T. Saueressig Date: 7/8/96
P. T. Saueressig

Mgr. Approval: J. L. Pennock Date: 7-9-96
J. L. Pennock

MEETING MINUTES

SUBJECT: Cesium capsule return from ARECO responsibilities and authorities

TO:	BUILDING
M. J. Eberle L. A. Klajeski R. G. Lee S. L. Payton J. L. Pennock E. D. Robbins * (Did not attend but discussed per telecon) P. T. Saueressig	271B, Conference Room B-103
FROM: Paul T. Saueressig	CHAIRMAN Paul T. Saueressig

DEPARTMENT-OPERATION-COMPONENT	AREA	SHIFT	DATE OF MEETING	NUMBER ATTENDING
Team Coordinator	200E	Days	07/08/96	6

The purpose of this meeting was to discuss the organization structure (Re-engineered teams) and clearly define the responsibilities and authorities of each position and/or person required to support the return of capsules from ARECO. The positions and/or persons required for capsule return activities have been well defined through the past history of the return of capsules from IOTECH. Checklist item 3.1.1 defines the plant staff requirements.

The Capsule Management Team (CMT) has the overall responsibility and authority for the unloading of the BUSS cask with capsules from ARECO. A copy of the organizational structure was reviewed and determined that all but two critical resources are maintained within the organizational structure of the CMT.

The two critical resources not contained in the CMT are the process crane operator (John Eberle) from the Canyon Deactivation and Decommissioning Team (DDT) and the riggers (Bruce Tank) from the Deactivation Support Team (DST). Two additional riggers will be required from outside sources (PUREX or the rigging loft).

The ARECO capsules return schedule was reviewed to determine the approximate time frame for the required support for the critical resources. The critical resources will be utilized from the Canyon DDT (process crane operator) for two days and from the DST (rigger) for two half days per shipment. Both Team Coordinators (DST and Canyon DDT) concurred that this could be scheduled through the Near Term Planning Team (NTPT) as the schedule became more defined but that the resources would be available. The NTPT requested diligent coordination from the CMT for scheduling of the critical resource but that there was no apparent problems. The unloading of the first shipment is scheduled for the end of August to the first week of September. The unloading of the second shipment is scheduled for the third week in September.

June 28, 1996

Capsule Management Team Charter

PURPOSE:

The Capsule Management Team supports the Waste Encapsulation and Storage Facility (WESF) mission by:

- Ensuring all systems are operated within the safety basis.
- Defining and implementing ways to achieve status as a showcase nuclear facility.
- Identifying and implementing operating methods to ensure WESF is the most cost-effective means to store capsules.

GROUND RULES:

Teams consists of the appropriate cross-representation of the entire Capsule Management Team members involved in a particular activity.

Team decisions will be made by consensus (general agreement). All decisions will be supported by all team members.

Team members are respected and differing views are valued. All other team members will listen when another member is speaking.

Team members will actively participate in the meetings and discussions.

Quorum for team decisions will be subject to approval by the team coordinator.

The team charter will be agreed to by all Capsule Management Team members. Any amendments must be agreed to by two thirds of the Capsule Management Team members.

The team will make every effort to resolve all conflicts and when all efforts have been exhausted without consensus the decision will be referred to the representative Project Management Team (PMT) member.

A facilitator will be responsible for enforcing the ground rules during meeting requiring facilitation.

TASKS:

Operate the facility systems (i.e, pool cell controls, waste handling, electrical, HVAC).

Implement and perform activities in accordance with the new work control system and Qualitative Job Hazards Analysis (QJHA).

Support the surveillance team.

Maintain and develop new facility procedures (i.e, operating, maintenance).

Perform corrective maintenance, preventative maintenance and calibrations on the facility equipment.

Perform capsules inspection, testing and verification (identification).

Perform facility upgrades.

Perform hot cell maintenance and cleanout.

Coordinate the working schedule with the Near Term Planning Team for shared resources.

Maintain required training current.

Procure, status, track and stage material for corrective maintenance of systems.

Maintain inventory of essential spare parts.

Establish and maintain Certified Vendor Information and/or vendor information documentation.

Develop plan and implementation to achieve a showcase nuclear facility.

Provide a liaison for programs which could impact capsule use or storage.

Support tours conducted at WESF.

Upgrade configuration control (as-build) of essential drawings.

BOUNDARIES:

Our authority is limited to accomplishing work within the bounds of the established baseline (scope, budget, schedule according to the MYPP). Issues and workscope outside of the baseline will be referred to and resolved by the PMT and requires consensus by the CMT. The facility is operated and maintained within the safety basis, applicable regulations and company procedures. Surveillance aspects of the upgraded systems will be transitioned to the Surveillance Team upon completion of the upgrade. System specific to capsule management operations will be maintained and operated by the Capsule Management Team.

The table lists customer and the product supplied from the Capsule Management Team:

Customer	Product
Surveillance Team	• System maintenance • Upgraded systems • Resources
Near Term Planning Team	Schedule input for shared resources
Deactivation Planning (Decoupling Activities)	System functions and requirements for system decoupling
WESF Baseline Control	• Workscope definition and status for WESF Baseline Control to maintain cost accounts • Upgrade system interface requirements

MEETINGS:

- All meetings will start on time.
- The required team members will make a commitment to attended the meeting or provide an empowered representative.
- Meetings will be standardized and held routinely at a set time and place, and for a set length of time. Daily work meeting will be held in the WESF lunchroom at 07:00 am and will not exceed a maximum of 20 minutes. The daily work meeting consists of the expected days workscope and status of the previous days activities. Monthly team meetings (entire Capsule Management Team) which will include a safety meeting will be held in MO-232 on the first monday of the month from 07:30 am to 08:30 am.
- The daily work and the monthly team meetings will be led by the team coordinator or designee.
- Meetings will have an agenda and every meeting will include time to establish an agenda for the next meeting. New agenda items will be added to the agenda for the next scheduled meeting, as opposed to being discussed at the meeting in which they are first brought up, to allow member to prepare for discussion.
- Special meetings will be arrange as needed to address urgent needs that cannot wait for the next regularly scheduled meeting.
- All key decisions and actions will be recorded and verified (read back) at the end of the meeting.

MEASURES OF A TEAM SUCCESS:

Meet all milestones (DOE-HQ, DOE-RL, WHC) and Performance Based Fees (PBF) committed to by the Capsule Management Team. Develop of few critical performance indicators on key activities which will be placed in the display case located outside of WESF.

SIGNATURES:

B. A. Anderson	_____	A. B. Monteith	_____
B. M. Auckland	_____	L. E. Newquist	_____
S. O. Berg	_____	L. L. Nunn	_____
L. D. Brist	_____	M. W. Pawlak	_____
D. C. Bushey	_____	M. M. Pereira	_____
C. Clemmons	_____	J. H. Rasmussen	_____
W. B. Cook	_____	V. L. Richardson	_____
S. J. Davis	_____	J. A. Robinson	_____
T. Gainey	_____	A. D. Sanders	_____
G. L. Garman	_____	P. T. Saueressig	_____
R. Hernandez	_____	W. R. Shannon	_____
G. E. Hutchins	_____	R. A. Shepard	_____
K. D. Jamison	_____	J. E. Wabaunsee	_____
D. A. Lanman	_____	R. D. Warren	_____
L. L. Lanman	_____		

Appendix A: Short-term Tasks

Return cesium capsules from offsite commercial irradiators.

Characterize and provide recommendation for cleanout of the K-3 Duct.

Support development and implementation of the safety basis (ISB/FSAR).

Support development and implementation of B Plant/WESF decoupling activities.

Support development and implementation of surveillance plan.

Support development and implementation of steam elimination.

Perform air compressor replacement, relocation and B Plant tie-in.

Support upgrade of operating and maintenance procedures.

Pam

B Plant/WESF Transition Project

CONTRACTION LOAN

PR Cooper - Bob Gray
CM Haag - Terry Main
MC Hatch - Bob Gray
ME Jones - Terry Main
D Pearson - Gail Rensink
FM Simmons - Bill Holstein

BJ Gray - Coach
WA Holstein - AE Const Liaison
SE Killoy - Regulatory Compliance
GL Rensink - Coach
MK Ullen - Safety Compliance

Director, B Plant/WESF Transition Project
Chris Midgett
Director, B Plant/WESF Complex
Bob Heineman
16000

Sue Steen, Sec
Geri Cummings, Sec

B Plant Deactivation Planning 16C00 Steve Godfrey, PAM

Janet Sleater, Sec

Patty Bailey
Bill Chen
Steve Giamberardini
Jaimie Ryan
Paal Ryan
Ron Schumacher
Ben Schwehr
Lou Stefanski

B Plant Surveillance & Canyon Deactivation & Decon 16D00 Kent Smith, PAM

Toni Gehman, Sec

B Plant Surveillance — Tom Brown, TC

Tammy Doty, Clerk
Loise Arnold
Karen Ashley
Ron Bacon
Dono Balero
John Boulon
Kathy Coffland
Newell Crary
Mike Crockett
Rick Daugnety
Charlene Deboise
Dan Kroll
Tim Gosney
Mike Guinn
Mark Haxum
Frank Hoverson
Cliff Jones
Lois Lampman
Scott Mallory
Mike Messinger
Debbie Older
Jim Pinkal
Randy Robinson
Kelly Schmidt
Ross Schultz
Ken Smith
Ben Wallace
Kathy Warren
Mark Watkins
Wade Wingfield
Matt Young

B Plant Canyon D&D — Dewey Robbins, TC

Ted Bienerth
John Eberle
Steve Friar
Al Friglund
Mike Gunderson
Evan Hafla
John Hasson
Bryan Jackson
Duane Kutsch
Troy Taylor
Karolin Veloz
Isaac Villarreal
Lee Wilkerson

Waste Encapsulation & Storage Facility 16E00 Jan Pennock, PAM

Peggy Nelson, Sec
Kathy Burton

WESF Surveillance — Dave Dobson, TC

Shirley Hagan, Clerk
Dan Barnett
Steve Beightol
Steve Froenlich
Gary Johnson
Tony Marsh
Penny Purdy
John Townley

WESF Capsule Management — Paul Saueressig, TC

Anita Monteith, Clerk
Bobbie Anderson
Brett Auckland
Sam Berg
Larry Brist
Dean Busney
Chuck Clemmons
Bill Cook
Scott Davis
Tom Gainey
Glenn Garman
Ray Hernandez
Gary Hutchins
Kevin Jamison
Lindy Lanman
Duane Lanman
Larry Newquist
Larry Nunn
Mike Pawlak
Mario Pereira
Juergen Rasmussen
Vern Richardson
Jim Robinson
Al Sanders
Wayne Shannon
Roy Sheppard
Jim Wabaunsee
Bob Warren

WESF Baseline Control — Dwayne Speer, TC

Juliann Anderson, Clerk
Kay Barron
Lori Covey
Kris Hedquist
Kathleen Jennings-Mills
Paul Stone
Steve Tritt

Radiological Control 15H00 Doug Craig, Mgr

Janelle Hamm, Sec

Dan Beers
Steve Hathaway
Bonnie Judy
Ray Williams

B Plant: Baseline Control 16G00 Terry Main, Mgr

Larry Callahan
Liesa Kinsey
Norma Jean LaRock
Jeff Pappan
Tim Richardson

Technical Support 16F00 Dennis Wilson, Mgr

Pam Laughery, Sec

Tom Beam
Karen Bender
Ranee Call
Doinna Haggerty
Cynthia Hightower
Mike Hill
Dennis Homan
Lynn Nye
Tina Ridge
Peg Robinson
Paul Roege
Monica Sarkowski
Steve Stark
Ken Way
Rebecca Wilson
Bill Witherell
Jeanette Yarger
Patti Yourdan

B Plant Gallery, Outdoor & Deactivation Support 16A00 Bernie Lueck, PAM

Linda Coffman, Sec

Gallery Deactivation — Keith Keever, TC

Serah Larrinaga, Clerk
Whitney Baker
Gary Clark
Victor Cruz
Mike Dawson
Ed Gonsalves
John Marty
Dave Meyer
Jim Millbauer
Rod Nelson
Jessie Weathers

Outdoor Deactivation — Richard Smith, TC

Mitch Baron
Lawrence Groce
Dave Harrold
Butch Judycki
Nancy Lenhart
Marv Steel
Ron Weissenfels

Deactivation Support — Randy Lee, TC

Ella Noland, Clerk
Jen Swanson, Clerk
Jim Acquavella
Rich Alamos
Bill Anderson
Ray Andrews
Doug Bromley
Bob Brown
Ron Brown
Bill Burden
Rich Cooper
Bob Crawford
Steve Demeyers
Bob Derting
Marie DeSoto
Jerry Entrop
Rick Eslick
Bob Farthing
Hank Finch
Verl Goodwin
Gene Green
Rod Greene
Bill Greger
Sue Hammer
Eric Hudspeth
Ray Jamison
Mike Jungers
Ken knight
Jim Lowery
Jim Lynch
Kari McDaniel
Dave Mertz
Frank Miksch
Tom Nicholas
Linda Phillips
Rodney Pickett
Jess Rumsey
Jerry Shaw
Darrell Shreve
Rocky Stoddard
Mike Storm
Bruce Tank
Tony Thomas
John Walkup
Steve Williams
John Williams
Jim Williams
Vivian Wyant

NEAR TERM PLANNING TEAM

Marion Kirby, Clerk - BHL
Sten Jones - BHL
Lee Klejeski - BHL
Steve Payton - BHL
Ken Strong - DKS

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

1.1.2

Acceptance Criteria:

Evidence that personnel have reviewed the procedures and clearly understand their responsibilities and authorities and the roles of other interfacing organizational components directly involved with the receipt of cesium capsules.

Discussion:

This checklist item was based on the IOTECH Preparedness review when the process for utilizing the Beneficial Uses Shipping System (BUSS) cask was being developed. Twenty two shipping campaigns have been completed utilizing the BUSS cask since March of 1994.

Re-engineering has established field work teams for the B Plant/WESF complex. WESF was formed into two field work teams (Surveillance Team and Capsule Management Team). The Capsule Management Team (CMT) was identified with the responsibility for corrective maintenance, preventative maintenance and non-surveillance operational activities. The return of cesium capsules from the Applied Radiant Energy Corporation (ARECO) work scope was identified by the re-engineering lab team as workscope under the CMT area of responsibility.

The CMT developed a team charter to define the key aspects (purpose, tasks, etc.) required to maintain and operate WESF. The members of the CMT developed and approved the team charter. The return of cesium capsules from ARECO was listed as one of the major tasks within the responsibility of the CMT.

The concept of re-engineering into the field work teams was to provide the teams with the resources to accomplish between 85-90 percent of the required tasks with team personnel. This is true for the capsule return task with the except of a few critical shared resources (i.e, crane operator, rigger).

Checklist item 1.3.1 listed the non-CMT personnel required to unload the BUSS cask with capsule received from ARECO and also contained a Memorandum Of Agreement with the field team to supply the critical resources. The personnel responsible for unloading the BUSS cask during the ARECO capsule return campaign are listed in checklist item 3.1.1.

Attached is a listing of the qualified CMT personnel which are available for unloading the capsules returned from ARECO. Contained in the attached list is the experience level for the CMT with BUSS cask unloading campaigns. All the CMT personnel have been involved in the unloading of cesium capsules from IOTECH (May 1994 through June 1995) and Pacific Northwest National Laboratories (September 1995 through April 1996). The operating procedures were recently changed to reflect the administrative changes as a result of re-engineering. Procedure use expectation is clearly defined in the issued Standing Order and IP-1182. In addition, the pre-job safety briefing covers in detail (procedural steps) the critical activities to be performed. Therefore, additional review of the procedures are not required.

Supporting Documentation:

The Capsule Management Team charter. (Contained in checklist item 1.1.1)

Standing Order "Procedure Use Expectation".

List of CMT personnel available for the return of capsules from ARECO with past BUSS cask unloading experience.

Outstanding Items/Limitations:

None.

Completion: Paul T. Saueressig P. T. Saueressig Date: 8/7/96

Mgr. Approval: J. L. Pennock J. L. Pennock Date: 8-7-96

Personnel	Number of Unloading Campaigns
Millwrights:	
Duane Lanman	22
Al Sanders	12
Operators:	
Jim Wabaunsee	22
Roy Shepard	22
Bill Cook	22
Lindy Lanman	22
Glen Garman	22
Crane Operator:	
John Eberle	22
Rigger:	
Bruce Tank	18
Radiation Control Technicians:	
Brett Auckland	19
Kevin Jameson	6
Power Operator:	
Vern Richarson	6
Dean Bushey	2
Engineers:	
Paul Saueressig	22
Mario Pereira	22
Mike Pawlak	22

Type:

_____Preliminary

__X__Final

Checklist Item:

1.2.1

Acceptance Criteria:

Evidence of actions addressing employee concerns in the area of safety, quality or environmental consequences as they relate to the cesium capsule return program.

Discussion:

The B Plant/WESF employee concern program has two outstanding concerns associated with WESF. The two outstanding concerns are long term (programmic) which were identified prior to the return of capsule from IOTECH in 1994. The first concern is the build up of waste in the hot cells. The second concern is the system and/or equipment problems encountered with the WESF ventilation system.

The first concern does not directly effect the return of capsules from the Applied Radiant Energy Corporation (ARECO) because the build up of waste is contained within Cells A, B and C and to a more minor extent Cells D and E. Capsule return activities are performed in G Cell only and G Cell does not contain any accumulated waste. The concern is a valid but the removal of waste is not require prior to capsule return.

The second concern was first identified prior to the WESF Readiness Review for the return of capsules from IOTECH in 1994. As stated in the previous evaluation the WESF ventilation problems do not create an immediate safety threat.

Overall system interaction was evaluated by an independent review team (Negin, Ghosh, Gregonis, Ullah) which identified both near and long term recommendations. The path forward has been defined by the system engineer for baseline modifications and implementing the review teams suggested system modifications. This recommended resolution will improve plant reliability and operability, but is not required to be completed prior to capsule return.

Checklist item 4.1.1 identifies outstanding work packages which require completion prior to cesium capsule receipt. Three work packages were identified which are related to the WESF ventilation system. The three items are:

- K3-7-1 actuator replacement.
- Hot cell Dp controller repairs (inlet damper actuators).
- K1-6-1 supply fan motor replacement.

Supporting Documentation:

WESF ventilation system independent review. (ATTACHED)

WESF system engineer recommendation for path forward. (ATTACHED) LB 8/6/96

Outstanding Items/Limitations:

None.

Completion: Pennock for P. T. Sauereissig Date: 7-10-96

Mgr. Approval: Pennock J. L. Pennock Date: 7-10-96

Contents

1. Executive Summary

This reports an independent technical review of the WESF ventilation system. The review addressed near term issues with respect to system upsets and long term issues with respect to system design for the long-term WESF mission. The primary focus of the review is operation and design. A few safety issues have been addressed only because they relate to system operation or design.

1.1 Near-Term

The only systematic cause of several of the upsets in the past several years is related to transition to and from cold weather seasons when substantial manual operation of the steam system is required.

Regardless of the number of events reported in 1994 - 1996, we believe there has not been fundamental changes in the system or people associated with it. That is, similar events probably happened in the past, but were not warranted to be reportable at that time. These events have not been operationally significant and the elimination of the OSR related to canyon to operating gallery differential pressure should provide some relief.

The configuration and controls design for the system, including the interlocks, makes it extremely susceptible to upsets and difficulty in recovery from upsets. Given the changing mission for WESF, some recommendations are made for relieving this situation.

Several minor, but no major, changes are recommended associated with personnel or mode of operation under the current configuration.

1.2 Long-Term

Reviews were conducted of currently planned modifications. We believe additional justification or planning is needed before proceeding on some of them.

In particular, upgrade of the system controls is important. The current plans basically replace what exists. However, before that can be done, we feel it is mandatory that a system baseline balance be conducted, decisions made with regard to future operating modes and configuration, and the feasibility of these decisions be verified by in-plant flow measurement with temporary setups. Only then should the controls upgrade be designed and implemented. Because these steps must occur in series, management should fast-track the system balance and these decisions.

Several suggestions have been made that will result in an overall reduction in system air flow rate and less frequent operation of some equipment. These should be considered as the ventilation system configuration is revised for the long-term mission.

2. Introduction/Purpose

The B-Plant/WESF facility manager requested that an independent review be conducted to evaluate the WESF ventilation system.

The aim of the review is to develop practical recommendations related to management, engineering, operations, and design. Recommendations are to be technically focused and as specific as possible given the limited time for review. Recommendations are developed for the near term with respect to events and upsets of the past few years and for the long term with respect to WESF mission.

2.1 Background

The WESF Ventilation system is relatively old. The system has experienced several upsets in the past few years. There is a concern as to whether they will continue and become: a) a threat to safety and operational stability, and/or b) a chronic demand on management attention.

The system must operate many more years until the WESF capsules can be moved; current planning is tentatively established 2011 as the beginning of a two year capsule disposition program after which the facility can be deactivated. Thus, at least 15 more years of capsule storage is envisioned. Other functions in addition to capsule storage that affect ventilation include shipping and receiving of capsules and other equipment.

Other facility functions of chemical conversion and encapsulation of cesium and strontium is not anticipated. This eliminates the operational need for most of the hot cells.

2.2 Method/Approach

The review was performed using a team approach. Team members are:

- Chuck Negin - Oak Technologies - EM-60 Independent Technical Expert & Team Leader
- Deep Ghosh - Southern Company Services - Nuclear Plant and Industrial HVAC expert
- Bob Gregonis - WHC /PUREX - HVAC expert
- Kaleem Ullah - WHC B-Plant/WESF Safety Team Leader - has an extensive background in HVAC

The review used existing documents and interviews with individuals who manage and operate the system.

3. Near Term Issues

The purpose of this section is to address the reportable upsets of the recent past. The basic question addressed was whether there was a systematic root cause related to hardware, people, or "paper" (procedures, etc.).

We find it is most likely that the system controls have never worked as originally designed (that is, automatic flow control of supply as well as exhaust pressure control). Therefore, before replacing controls, it is necessary to understand the actual operating parameters and response.

System perturbations should not be treated as unusual events. In fact we have recommended occasional shutdown and re-start of the system for operator training which will generate alarms and interlocks actuation.

A list of fifteen events reported for the WESF Ventilation system was reviewed. WESF management had performed root cause analysis of the events; this analysis was also reviewed. In general we agree with the management conclusions regarding the root causes of the various events.

3.1 Hardware

One instrument failure occurred and is judged to be random. As the instruments are aging, more of this type occurrence may occur, but not necessarily. There was no indication of pervasive aging of instruments.

A substantial number of events are associated with the low temperature trips of the supply fans. Elimination of tripping of the supply units due to low temperature is discussed later.

3.2 People

Most of the occurrences were due to the personnel error of which several occurred during system recovery following system trip. The events that occurred during system recovery are attributable to the pressure sensitivity of the ventilation system and the complexity of controls and interlocks. This factor can be reduced by more frequent training on the system and sharing of lesson learned type of knowledge among the power operators (see discussion below under training).

Other personnel causes seem to be random.

3.2.1 Operations

Training Notes: Aside from operating procedures, for both current and future power operators, we recommend assembling operator insights about various system operating modes and idiosyncrasies and create a set of operational training notes. An accompanying videotape could be useful for this purpose.

Practical factors: Each power operator should conduct HVAC system shutdowns and startups periodically - more frequently in the beginning and less often once familiarization is achieved.

This will result in system upsets and alarms, however, that is the best way to learn the system and procedures.

3.2.2 System Engineers

The two engineers assigned to the system are qualified and competent. Importantly, Mr. Gainey is well respected by the operators (Question was not asked regarding Ms. McDaniel because she has only been here for a few months).

We note that all their training has been on the job. There does not seem to have been much interaction with professionals or with formal training in HVAC. This can be compensated in two ways:

- Establishing a Mentor - There are individuals within WHC who have considerable HVAC expertise. (Mr. Gregonis who participated in this study is one example.) Such an individual should be made available to the system engineers on an ad-hoc basis as an "in-house" consultant when specific questions and issues arise that require additional professional expertise.
- On-site networking - we observe that there are monthly meetings of on-site individuals from various facilities in topical areas such as industrial safety, fire protection, industrial hygiene, and nuclear safety. We recommend that similar networking of HVAC engineers will greatly benefit the Hanford site in sharing experience and addressing the common issues related to facility ventilation operation. Establishing such a network should be promoted by management. There is a local ASHRAE chapter that meets, however, this is not likely to focus on facility operational problems.

Based on conversations, we estimate that 40% to 60% of the engineers' time is taken up with tasks that do not focus directly on resolving issues associated with the system. This includes activities such as dealing with reportable events (this should now be reduced with the elimination of the OSR), re-engineering the organization, audits and reviews such as for DNFSB and EH audits and reviews, and other administrative requirements. Management should attempt to reverse this fraction. That is, at least 60 to 80% should be spent directly on system issues.

Engineer's training - familiarization of new engineers with the system should be more systematic with some specific assignments and lesson plans (e.g., walk down and sketch the system in each room, fill out a question and answer sheet related to the system design basis, history of modifications, etc.). The system design document (PFD-E-060-00001, WESF HVAC system flowsheet, R. F. Carlstrom) should be a key element of engineer training for future assignees as well as other technical documentation.

Professional enhancement of the system engineers' HVAC knowledge should be conducted, either through short courses or topical conferences; such as the DOE/NRC sponsored Air Cleaning Conference in Portland this July.

3.3 "Paper"

3.3.1 Review of Operation Procedures

HVAC procedures have been reviewed for adequacy. In general, the HVAC operating procedures are adequate for a trained operator familiar with the facility and equipment nomenclature. Persons unfamiliar with the HVAC systems would have a difficult time operating the system directly from the procedures. In many cases, the system's operating sensitivity will not allow time for one to conduct the procedure step by step and operate the systems successfully.

The procedures can be simplified by eliminating the redundant notes and warnings. In addition, a simplified flow diagram as an attachment to the procedure showing equipment and instruments being operated would improve the understanding of the operations being performed.

3.3.2 Work Management

The current work control system did not contribute to these events. However, management should make sure that craft and I&C personnel routinely notify the shift supervisor when conducting work on the system.

3.3.3 Inconsistencies

3.3.3.1 Equipment/Instrument Labeling

Inadequate and/or incorrect equipment and instrument labeling was observed in walk through of the facility. This appeared to have caused some confusion with the cognizant engineer's knowledge of the system.

Equipment and instrument labeling should be checked and corrected to match those listed in the essential drawings.

3.3.3.2 Drawing Discrepancies

Essential drawings do not correctly reflect "as built". There are discrepancies between essential drawings, i.e., Air Flow Diagram and HVAC Control Drawings. Equipment shown is not installed, or shown incorrectly.

We also note that there are minor errors in the interlock presentation provided to us (DNFSB viewgraphs - Hernandez) and connections in the block diagram of the systems used for an overview. These should be corrected if they are to be used again. Also, Section 7 of the SAR has errors (for example, it says K2 exhaust is filtered; it credits Project B-493 which was not implemented).

4. Long-Term Considerations - Issues

The fission product encapsulation process which this ventilation system was originally designed to support has been terminated and will not be resumed. The WESF is currently functioning as storage facility with minimal movement of capsules. The ventilation design objectives, operating modes, and performance parameters can be modified to support the more limited mission of the facility.

4.1 Balancing the WESF Ventilation System

Review of the documents suggests that the ventilation system at WESF has not been balanced since commissioning of the system in 1973. Interviews indicate that the balance may have been modified during the aborted I&C replacement 10 years ago and never restored to original. With this and the observations that the control system is operated quite differently than originally intended, the possibility exists that operation of the system in its current configuration deviates widely from the original design. (This is not necessarily bad since there have been no major problems with ventilation flows.)

In order to proceed forward with the ventilation system, it is necessary to establish the actual operating characteristics and air flow balance. The basic system design calculations are available. They should be used, along with measurements, to establish a new baseline system operation. For the baseline measurements, it will be necessary to determine system air flows and pressures in the various areas while maintaining the system in a manual mode. The baseline data should be used to regenerate a modified design calculation to support system changes.

When a system balance is conducted, the opportunity should be taken to determine the feasibility of alternate configurations being considered for the long term by establishing the alternates and measuring the resulting air flow and pressure distribution after first demonstrating that each configuration is stable.

4.2 Elimination of Steam

4.2.1 Heating

We have been told that there is insufficient electrical feeder/MCC capacity to replace the steam heat with electrical heaters and that the current thoughts are to use a package boiler to do so. Elsewhere we have suggested some ideas for reducing overall ventilation flows and for eliminating some supply units. If in fact it proves feasible to reduce the overall flow rates by a substantial fraction (say, 50%), the need for heating will also be reduced. This may improve the feasibility for electric heating. In addition, since the WESF operations will be considerably fewer than in the past, it may be acceptable to allow lower than standard room temperatures for short periods of extreme outside cold.

4.2.2 K3 Exhaust Steam Jet

The K3 exhaust system has two 100% redundant exhaust fans and HEPA filters. The steam jet is used during emergency operation as a back-up system to the K3 exhaust system. If the primary exhaust fan fails, the standby exhaust fan is automatically started. During this switch over from

the primary to the standby exhaust fan, a drop of pressure below the set negative pressure in the K3 exhaust duct automatically starts the steam jet to augment the exhaust flow of fans by 1,000 cfm. There is a built-in start up delay resulting in about a 12 to 15 second delay for the standby exhaust fan. In the event of a power loss in which the emergency diesel is automatically started, the steam jet provides this supplemental exhaust flow for 10 seconds of time delay.

Given the current/future mission of the facility and knowing that no process operations are being carried out in the facility, concern of loosing control of differential pressure between the operating gallery and the canyon is reduced significantly. Accident analysis which is currently being developed indicates that several hours of loss of K3 exhaust fans can be tolerated in emergency conditions without exceeding personnel and environmental acceptable limits of exposure or release. We therefore believe eliminating the steam jet backup for the K3 exhaust can be justified.

4.3 Hydrogen in Capsule Storage Area

The issue has been raised regarding hydrogen concentration in the capsule storage area with the pool cell cover blocks removed. In our opinion, this is a non-problem. We recommend against any attempts to resolve this issue with hardware approaches.

A comparable situation exists at power plants with spent fuel pool storage pools where the curie loadings are comparable to or greater than at WESF and there is a relatively large air space above the pool. To our knowledge, there is no concern regarding hydrogen in these situations.

It has been indicated to us that an OSR (11.4.3 - "Hydrogen Concentration in the Pool Cells") requires K1 exhaust duct operable - the K1 exhaust high pressure trip is based on this issue - that is, the trip is required to warn of loss of flow through the storage area. If the hydrogen can be relegated to an issue of no consequence, then a rationale will exist for eliminating the OSR requirement related to K1 exhaust ventilation.

The current analysis shows that under conservative assumptions of hydrogen release, no ventilation, and worst case conditions of room sealing, it will take of the order of 10 days to reach 4% hydrogen. Further, our experience is that even without active ventilation there should be sufficient infiltration and exfiltration to prevent hydrogen buildup. It is therefore recommended that this issue be addressed with an administrative requirement that if active ventilation flow through the capsule storage area is lost for more than 5 days, that a door be opened to allow ventilation. Since portable hydrogen measuring instruments are readily available (for example, via GE Instrument Rental service), one additional action might be to start hydrogen monitoring should such a loss of ventilation occur.

5. Comment on Currently Proposed Modifications

Four of the more significant proposed modifications for the WESF are addressed with comments as follows:

5.1 Replacement of the K1 exhaust fans

The K1 exhaust fans are listed for replacement. The reason is not clear. We speculate the proposed replacement may be due to concern of high vibrations on those fans. Review of initial test and balancing report (Vitro Engineering Report -1973) suggests that these fans have had high vibrations, but as of this date no documented failures have been attributed to high vibration. If these fans have operated without any bearing failure for the past 23 years, then premature bearing failures should not occur. Inboard and outboard bearing replacement may be sufficient to overcome the high vibration concern in lieu of the complete fan replacement.

5.2 Control System Upgrade (Project W450)

A planned upgrade to the controls several years ago was not implemented (Project 493).

Upgrade of the system controls is important to support an additional 15 years of WESF operation. The current upgrade specification (Project 450) essentially replaces what exists. However, before that is pursued further, we feel it is mandatory that 1) a system baseline balance be conducted, 2) decisions made with regard to future operating modes and configuration, and 3) the feasibility of these decisions be verified by in-plant flow measurement with temporary setups. Only then should the controls upgrade be designed and implemented. Because these steps must be done in series, management should fast-track the system balance and decisions on configuration for the long term. It is recommended that the controls design changes be put on hold until this information is available.

In any event, it is noted elsewhere that the inlet fan flow controls have probably been operated in a remote manual mode since the beginning, regardless of the fact that the design intent was for automatic control. There is no apparent reason for attempting to implement fully automatic inlet flow control at this time. This should be considered in designing the controls upgrade.

Note: Mention has been made of tasking Kaiser for the balance measurements. If so, this should be done by having the assigned engineer work in the cognizant engineers' trailer at WESF so that there can be frequent planning interaction.

5.3 Damper Addition Between Operating Gallery and HVAC Room (ECN 625012)

We suggest deleting the WESF ventilation system operation dependency on the Operating Gallery/Canyon differential pressure limit. This is an alarm function, and was previously used as an OSR limit.

If the proposed system changes in Section 6 are accepted by the WESF management, then implementation of the ECN will not be required. More specifically, the differential pressure between the Operating Gallery and the Hot Cell may be used to monitor the effectiveness of the K1 system. By eliminating the Operating Gallery/Canyon differential pressure limit as a

requirement, there should not be a need to install a damper between the operating gallery and the HVAC room.

5.4 Cell Inlet Damper Actuator Replacement

Consolidation of Cells A through E is discussed in Section 6. This may eliminate the need for replacing the actuators on the inlet dampers.

6. Suggested System Changes

In the course of our review, several potential system changes seemed reasonable in light of the changing WESF mission. These are described. However, be advised that these are a result of a relatively cursory review and must be validated before further consideration.

6.1 Consolidate Hot Cells A through E

Currently, process work in Cells A through E has ceased and the cells have no further mission other than to be cleaned up and to be decontaminated. Consider interconnecting the A through E Cells by opening the interconnecting cell doors. This will reduce the need to replace defective damper actuators in the event one fails or has problem. The cell with damper actuator problem may be manually isolated by shutting off its affected inlet or outlet damper. The new design basis should establish the minimum number of inlet or outlet cell dampers which need to be open.

Note: The AMU transmitter room ventilation can also be reduced, or possibly eliminated, if positive isolation of the transmitters is established with blank flanges or hard plugs.

6.2 K3 Inlet Normally Off

Consolidation of cells can result in a reduction of the K3 exhaust air flow rate which in turn may allow shutting off the K3 supply, making it a draw-through system. Determine if the supply fan, K3-6-1, can be shut off during normal plant operation. This would require reduction of the airflow of the K3 exhaust fan. Since the exhaust fan is furnished with inlet vanes and automatic pressure control feature, it will necessary to determine if the air flow of the K3 exhaust fan can be reduced to the required minimum flow.

6.3 Capsule Storage Flow Reduction and Inlet Elimination

Determine if the air flow to the capsule pool area can be reduced (to around 2500 cfm). Consideration should be made for the heat load for the area as this may increase the ambient temperature. This consideration may help eliminate the need to operate the K4 supply fan during normal plant operation. This in turn will eliminate the need for K4 inlet heaters and low temperature trips. As previously stated, hydrogen should not be an issue here.
The K4 supply fan be operated as needed.

6.4 Eliminate Differential Pressure Alarm - WESF Canyon to Operating Gallery

Existence of this limit is excessively restrictive for the operation of the K1 and K3 systems. The ease at which this limit can be exceeded during the day to day operation of the plant results in excessive concern where there is little risk. The consequences resulting from exceeding this limit presents essentially no practical potential for contamination spread from the canyon to the operating gallery. Two air locks separate the operating gallery from the Canyon. The process cell to operating gallery differential pressure is more of a concern for contamination of the operating gallery. Contamination from the canyon would have to pass first through the AMU before it reaches the operating gallery. The ventilation for the AMU is by the K2 system which exhausts directly (unfiltered) to the atmosphere.

Because the potential for contamination of the operating gallery through a breech of a manipulator boot is of greater concern, an alarm for Cell to Operating Gallery differential pressure would be more appropriate than Canyon to Operating Gallery.

The operating pressure differential between the A-E cell and the operating gallery may be relaxed from -3" wg to -1.5" wg because process work is no longer conducted in those cells.

6.5 Cold Inlet Temperature Interlocks

To prevent freezing steam coils, interlocks have been installed to shut off ventilation systems based on a down stream coil temperature of 35 °F. Problems have occurred in late Fall and early Spring when steam is not required during the day but is required at night. Manually valving in the steam at night requires steam to be turned on ahead of time to avoid the low temperature trip. If the steam to the coils is not turned on early enough, the steam condensate generated exceeds the capacity of the traps and coils fill with water preventing the required heating to allow the low temperature sensor to trip the system off line.

Removing the low temperature interlocks that trip the ventilation supply and replacement with low temperature alarms that require operator response is prudent to avoid supply fan trips.

We also recommend a re-check of steam trap sizing and installing different steam traps if appropriate. Coil capacity and temperature control interaction between pre- and post-heating coils should be reviewed.

6.6 Snow/Ice Plugging of Supply Prefilter

Heating units have been installed in the supply inlets to preheat the incoming air and prevent premature plugging of the prefilters with snow and/or ice. The heaters as installed do not provide uniform heating of the air entering the supply plenums.

Redesign the heaters to provide adequate heater capacity and uniformly heat the air to melt the snow and prevent ice formation on the prefilters.

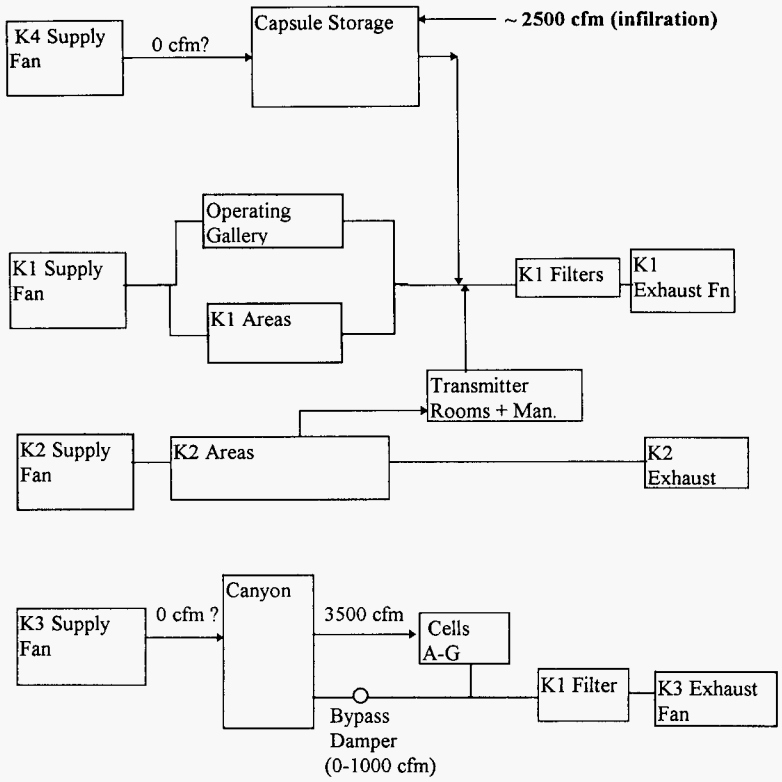
6.7 Redundant HVAC Controls

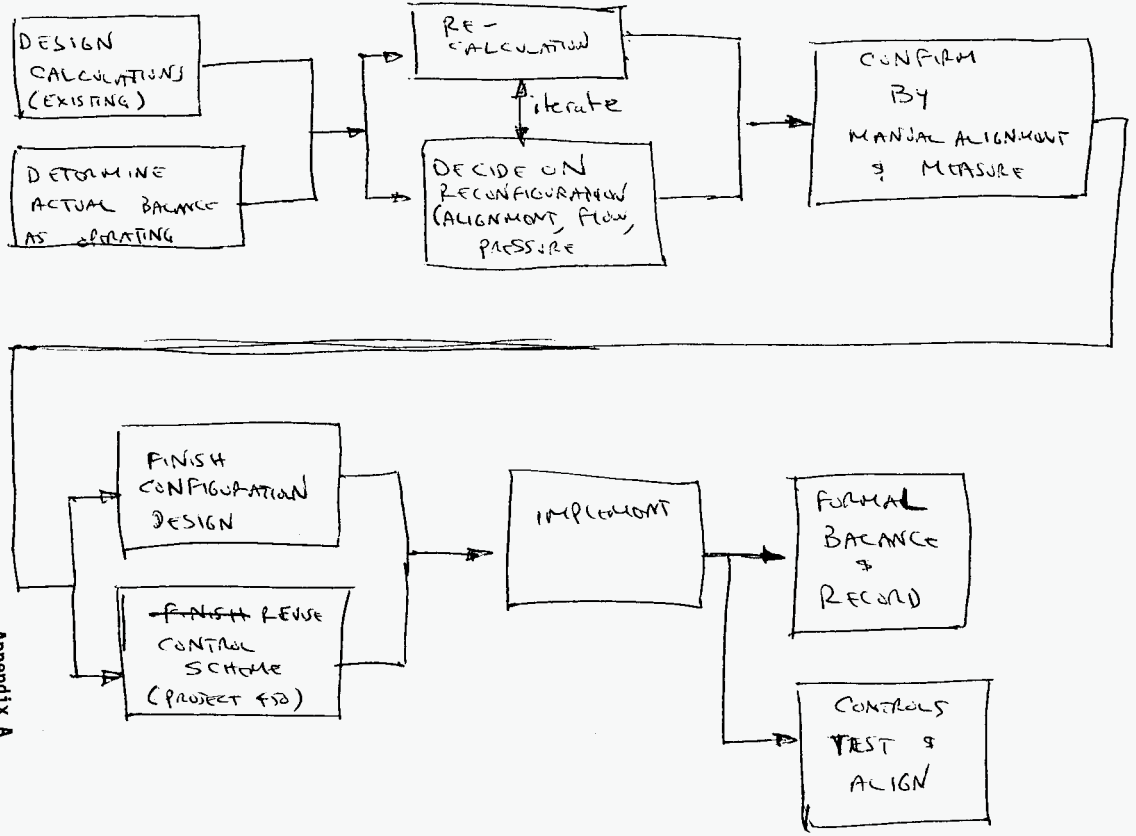
One or two of the Foxboro recorder duplicates the original control functions, some of which are in place and operable. Instruments controlling the same function add an additional level complication to the system operation and greater potential for operator error, and as a minimum can be confusing to new operators or those who do not frequently operate the system. In the short term, efforts should be considered to consolidate the two control mechanisms and select one as the primary by repairing or replacing controllers as needed.

In the longer term, redundant control function should be eliminated when the instrumentation upgrade (Project 450, as modified) is designed.

6.8 Overview of Reconfiguration

The diagram that follows summarizes the suggestions in this report that affect flow and configuration.


K4 Supply Fan
0 cfm?
Capsule Storage
~2500 cfm (infilration)
Operating Gallery
K1 Supply Fan
K1 Areas
K1 Filters
K1 Exhaust Fn
Transmitter Rooms + Man.
K2 Supply Fan
K2 Areas
K2 Exhaust
K3 Supply Fan
0 cfm ?
Canyon
3500 cfm
Cells A-G
K1 Filter
K3 Exhaust Fan
Bypass Damper (0-1000 cfm)



STEPS — VENTILATION BALANCE ⟶ CONTROL

From: WESF Engineering 16E20-96-095
Phone: 372-0101 S4-70
Date: June 14, 1996
Subject: RESPONSE TO HVAC INDEPENDENT TECHNICAL REVIEW OF WESF VENTILATION SYSTEMS

To: R. E. Heineman, Jr. S6-60

cc:

R. J. Bliss	B3-04	J. L. Pennock	S4-70
B. L. Charboneau	R3-78	R. D. Pickett	S4-70
L. I. Covey	S6-51	E. D. Robbins	S4-66
N. L. Crary	S6-59	P. E. Roege	S4-66
D. T. Evans	R3-79	P. K. Ryan	S6-81
T. Gainey	S6-51	D. K. Smith	S6-60
B. A. Gilkeson	S4-66	M. K. Ullah	S6-69
G. L. Greene	S6-70	D. W. Wilson	S4-66
W. A. Holstein	S4-66	KAJM File/LB	
R. A. Kropp	S6-81		
J. C. Midgett	S6-65		

Reference: Letter, C. Negin, Oak Technologies, to R. Heineman, WHC, and R. Silva, EM-65, "WESF Ventilation Independent Review," dated April 25, 1996.

This memorandum provides a plan and status of the WESF Engineering actions which are currently underway or planned in order to respond to recommendations made in the April 25, 1996 Final Report for the Independent Technical Review of WESF ventilation systems. The Final Report was the result of a week long study of WESF Ventilation Systems which was performed by four individuals with extensive experience in nuclear and industrial HVAC systems.

WESF Engineering will be preparing a detailed schedule for completion of these and other HVAC tasks. Completion of this schedule will be accomplished after the impacts of re-engineering become clearer.

Response to Recommendations for Near Term Improvements:

The Independent Review Team recommended a number of near term improvements aimed at alleviating contributing factors to recent recordable ventilation system events.

RECOMMENDATION	WESF FOLLOW THROUGH
Eliminate tripping supply fan units due to low temperature freeze protection switches.	WESF Engineering concurs with recommendation. Low temperature interlocks to be replaced with low temperature alarms.

RECOMMENDATION	WESF FOLLOW THROUGH
Training: ○ Conduct routine shutdown and startup of ventilation systems to improve operator response following upset. ○ Develop Operational Training notes. ○ Improve sitewide mentoring/ networking for Engineering. ○ Reduce time on audit response & increase time on System Engineering. ○ Formal System Training for engineers. ○ Promote professional development.	Under the operating environment currently in place at WESF we cannot advocate routine shutdown and startup of the ventilation system. Engineering is working with Training and operators to improve the Power Operator Training. The Review Team recommendation to develop operational training notes will not be implemented at this time. It is anticipated that upgrades to the HVAC Operating Procedure will provide a similar benefit. Other Review Team recommendations related to System Engineer Training are being aggressively pursued on an informal and individual basis.
WESF Showcase Issues: ○ Simplify HVAC Operating Procedure. ○ Field re-labeling of instruments and equipment. ○ As-built HVAC Essential Drawings to incorporate outstanding modifications.	Work Package 2B-96-661/M (ECN 629634) is being developed to correct duplicate and missing identification numbers for HVAC instrumentation in the field, on the HVAC Essential Drawings, and, in the HVAC Operating and Surveillance Procedure EO-060-002. Additional drawing as-built and field relabeling will be required to support facility air balance efforts. Additional upgrade to EO-060-002 is planned.

Response to Recommendations for Long Term Improvements:

The Independent Review Team provided a number of recommendations for consideration as the ventilation system configuration is revised to support the facility mission of capsule management and long term capsule storage. The majority of the review team suggestions are aimed at reducing overall system air flow rates and reducing the operating requirements of aging WESF equipment rather than performing extensive equipment upgrades.

RECOMMENDATION	WESF FOLLOW THROUGH
Ventilation System Air Balance: ○ Measure existing facility air flows. ○ Establish new baseline for system operation and required air flows. ○ Field test alternative facility air flow configurations.	WESF Engineering concurs with Review Team recommendation and will develop and perform a work procedure to measure existing facility airflows. In parallel with determining existing facility airflows, WESF Engineering will analyze and revise design basis requirements for the ventilation system. Support for performing a final facility air balance will be analyzed and budgeted for FY1997.
Steam Elimination: ○ Investigate reducing electrical heating requirements by reducing overall ventilation flows. ○ Eliminate steam jet backup for K3 exhaust.	Overall reduction of facility flowrates to be analyzed following determination of facility as-found flows, and documentation of new HVAC design basis requirements. WESF Engineering is in the process of developing a USQ Screening for DOE approval to eliminate steam jet backup for K3 exhaust. Use of steam jet is anticipated to be discontinued upon removal of utility steam service.
Capsule Storage Hydrogen: ○ Eliminate OSR requirement for K1 exhaust ventilation. ○ Control hydrogen buildup via administrative controls (ie., open door for infiltration, and monitor area with portable hydrogen monitor)	Updated facility requirements to control capsule storage hydrogen are being developed as part of the WESF Interim Safety Basis.

RECOMMENDATION	WESF FOLLOW THROUGH
Re-Scope pending facility upgrades: 1) Cancel project to replace K1 exhaust fans. 2) Re-evaluate ventilation control system upgrade (Project W-450). 3) Cancel project to install wall damper between Operating Gallery and HVAC Equipment Room. 4) Re-evaluate replacement of cell inlet damper actuators and controls.	WESF Engineering concurs with Review Team recommendation. WESF Engineering has de-scoped ICF KH design projects per Letter of Instruction LOI-020-001 (Internal Letter: 16E20-96-093). This LOI cancels all of the ICF KH activities except for replacement of the K5 water expansion tanks (engineering work only).
Investigate controlling A-E cells as a common air space, and eliminate need to replace defective cell inlet damper actuators.	Recommendation is improbable due to individual cell inventories. Recent accident scenarios developed for the WESF Interim Safety Basis, and for the WESF Fire Hazard Analysis preclude controlling the cells as a common air space.
Investigate eliminating contamination potential of Transmitter Rooms and reducing ventilation control requirements.	Recommendation to be analyzed following determination of facility as-found flows, and documentation of new HVAC design basis requirements.
Investigate shutting down K3 supply flow and reducing K3 exhaust flow.	Recommendation to be analyzed following determination of facility as-found flows, and documentation of new HVAC design basis requirements.
Investigate eliminating Canyon to Operating Gallery differential pressure alarm. Install Cell to Operating Gallery differential pressure alarm.	WESF Engineering concurs with Review Team recommendation. Implementation planned following documentation of new HVAC design basis requirements.
Reduce differential pressure limits for A-E Cell to Operating Gallery from -3" wg to -1.5" wg.	Recommendation to be analyzed following determination of facility as-found flows, and documentation of new HVAC design basis requirements.
Re-analyze steam trap sizes to eliminate manual operation of steam coils to prevent freezing.	Steam traps are to be replaced with larger traps.

RECOMMENDATION	WESF FOLLOW THROUGH
Re-design supply fan freeze protection heaters to prevent pre-filter freezing.	WESF Engineering concurs with Review Team recommendation. Re-design and installation to be performed prior to fall of 1996.
Eliminate redundant Foxboro/Fairchild Controls.	WESF Engineering concurs with Review Team recommendation.

Please contact myself or Tom Gainey (373-0964) if you would like additional information on any of the above recommendations or intended WESF actions.

Kathle A Jennings-Mills 6/14/96

K. A. Jennings-Mills, Manager
WESF Engineering

abm

CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

1.3.1

Acceptance Criteria:

Evidence of effective communication at all organizational interfaces, including matrixed organizations that are involved with the cesium capsule return program.

Discussion:

The program schedule reflecting the resources required to complete the major activities for Applied Radiant Energy Corporation (ARECO) cesium capsule return was provided to the Near Term Planning Team. A two week schedule with specific activities requiring the Capsule Management Team resources is provided to the Near Term Planning Team. The two week schedule is updated weekly and transmitted to the Near Term Planning Team.

A Memorandum Of Agreement (MOA) between the field teams and the Capsule Management Team for critical resources was developed to assure that the unloading of the BUSS cask can be performed expeditiously.

Supporting Documentation:

The updated program schedule for the activities of ARECO cesium capsules return. (Attached) as part of checklist item 4.2.6.2. PTS 8/1/96

Internal letter 16E00-96-108 discussed above. (Attached)

Outstanding Items/Limitations:

None.

Completion: Paul T. Saueressig P. T. Saueressig Date: 7/22/96

Mgr. Approval: J. L. Pennock J. L. Pennock Date: 7-23-96

Westinghouse Hanford Company | **Internal Memo**

From: WESF Capsule Management Team 16E00-96-108
Phone: 372-0071 S6-65
Date: July 18, 1996
Subject: COMMUNICATIONS OF CESIUM CAPSULE RETURN PROGRAM SCHEDULE

To: B. H. Lueck, Jr. S6-70
J. L. Pennock S4-70
D. K. Smith S6-60

cc: D. O. Dobson S4-70
S. E. Jones S6-61
R. G. Lee S6-60
S. L. Payton S6-59
E. D. Robbins S4-66
PTS File/LB

References: 1) Letter, 16E20-96-105, "WESF Preparedness For Receiving Applied Radiant Energy Corporation Cesium Capsules", dated July 2, 1996.

2) Meeting minutes, Cesium Capsule Return From ARECO Responsibilities and Authorities, dated July 8, 1996.

This letter documents communication between the organizational interfaces including matrixed organizations as required in Reference 1. In addition, this letter establishes a Memorandum Of Agreement (MOA) with WESF Surveillance Team, Deactivation Support Team and Canyon Deactivation, and Decommission Team with the Capsule Management Team.

BACKGROUND:

WHC received direction from U.S. Department of Energy-Headquarters and U.S. Department of Energy, Richland Operations Office on June 19, 1996 to complete the expedited return of cesium capsules from the Applied Radiant Energy Corporation (ARECO) facility by September 1996. The program schedule was established and requires WHC to unload and initiate the return the empty shipment of the Beneficial Uses Shipping System (BUSS) cask within 3 working days.

RESPONSE:

The program schedule with activities defining WHC resources was transmitted to the Near Term Planning Team. This schedule identified critical resources outside authority of the Capsule Management Team and B Plant/WESF facilities. A meeting (Reference 2) was held to discuss required support for the critical resources (Crane Operator and Riggers) from other field teams. The Canyon Deactivation and Decommission Team and Deactivation Support Team agreed to provide the crane operator and rigger, respectively. The Near Term Planning Team contacted PUREX and the rigging loft and obtained a commitment to supply the two additional riggers for the activities with the condition that four days notice was given. The WESF

Surveillance Team was notified and agreed to support the Capsule Management Team with operating personnel and exempt staff during the critical unloading period.

The concurrence signatures obtained below acknowledge the MOA contained within this internal letter. If you require additional information, please give me a call on 372-0071.

Paul T Saueressig

P. T. Saueressig, Team Coordinator
Capsule Management Team
pan

CONCURRENCES:

E. D. Robbins, Team Coordinator
Canyon Deactivation and Decommission Team

R. G. Lee, Team Coordinator
Deactivation Support Team

D. O. Dobson, Team Coordinator
WESF Surveillance Team

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

2.1.1 - July 9, 1996

Acceptance Criteria:

Planned activities associated with receipt of cesium capsules are covered by the WESF Safety Basis with comments resolved.

Discussion:

Section 9.21 of the WESF Safety Analysis Report, WHC-SD-WM-SAR-005 Rev 12C, describes the receipt of cesium capsules from offsite facilities. This section specifically includes analyses of the hazards and potential accidents associated with use of the BUSS cask. There have been no changes or discoveries which would require revision of the SAR prior to capsule receipt.

All planned activities associated with the receipt of cesium capsules in the BUSS cask are covered by the existing WESF safety basis.

Supporting Documentation:

WHC-SD-WM-SAR-005 Rev 12C

Outstanding Items/Limitations:

None

Completion: _____ Date: 7/12/96
L. I. Covey

Concurrence: _____ Date: 7/12/96
P. T. Saueressig

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

x_____Final

Checklist Item:

2.1.2

Acceptance Criteria:

Affidavit stating the facility operating procedures and changes related to the cesium capsule return to WESF are reviewed and approved for compatibility with the WESF Safety Basis.

Discussion:

An audit of the historical files for the procedures listed in the table was performed to ensure an Uresolved Safety Question screening had been performed on each of the procedures during its upgrade to IP-1182 or during its last revisions. It was also checked that an auditble copy of the USQ screening was available in the historical file and that no USQ was declared during the review of the procedures. The table contains a reference number of the associated USQ screening.

Supporting Documentation:

Procedure No.	Title	USQ Screen #
EO-100-012	Operate Go-No-Go Gage and Examine Capsules	WESF-96-026
EO-100-023	Unloade the Benefical Uses Shipping System (BUSS) Cask	WESF-95-331
EO-906-003	Transfer and Storage of Capsules	WESF-96-064
EO-909-001	Operate 15 Ton Canyon Crane	WESF-95-341
EO-909-003	Operate In Cell Hoist	WESF-96-120
EO-909-009	Remove and Install Truck Port, G Cell and Pool Cell Coverblocks	WESF-96-084
EO-909-011	Operate 25 Ton Crane	WESF-96-121
EO-912-006	Enter G Cell	WESF-96-176*

~~*New USQ screening available in WESF SAR Cog Files~~

NOTE: ABOVE USQ SCREENING WAS SIGNED AND NOW EXISTS IN USQ FILE. LB 8/6/96

Outstanding Items/Limitations:

None

Completion: M. W. Pawlak Date: 7-31-96

Concurrence: P. T. Saueressig Date: 7/31/96

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

2.1.3 - July 15, 1996

Acceptance Criteria:

Affidavit with Safety's concurrence stating that no open unreviewed safety questions exist involving the cesium capsule return.

Discussion:

At this time there is only one open Unreviewed Safety Question (USQ) at WESF: the WESF Safety Analysis Report, WHC-SD-WM-SAR-005 rev 12C does not clearly analyze the potential consequences of a hydrogen explosion in the pool cell area. A Justification for Continued Operation (JCO) has been approved by RL. This JCO does not prevent the normal operations associated with receipt of cesium capsules in the BUSS cask.

There are no known potential USQs or safety bases issues at this time which could affect the capsule return.

Supporting Documentation:

WESF Safety Analysis Report, WHC-SD-WM-SAR-005 Rev 12C

USQ Evaluation WESF-96-075 "Hydrogen Buildup in Pool Cell Building" (Attached)

External Letter, J. C. Midgett, WHC, to J. E. Mecca, RL, "Unreviewed Safety Question on Waste Encapsulation and Storage Facility Hydrogen Buildup in Pool Cell Area - Justification for Continued Operation," 9651207, dated March 15, 1996. (Attached)

External Letter, J. E. Wagoner, RL, to A. L. Trego, WHC, "Unreviewed Safety Question on Waste Encapsulation and Storage Facility Hydrogen Buildup in Pool Cell Area - Justification for Continued Operation," 96-BPLANT-011, dated May 16, 1996. (Attached)

Outstanding Items/Limitations:

None

Completion: L. I. Covey Date: 7/12/96

Concurrence: P. T. Saueressig Date: 7/12/96

Safety Concurrence: M. K. Ullah Date: 7/12/96

MEETING MINUTES

Subject: PRC Meeting - Review of WESF Pool Cell Hydrogen Issues USQ Evalaution

TO: DISTRIBUTION DATE: 3/19/96 BUILDING: MO400

FROM: L. I. Covey CHAIRMAN: J. C. Midgett

Dept-Operation-Component	Area	Shift	Meeting Date	Number Attending
B Plant/WESF PRC	200E	Day	3/06/96	17

Distribution:

D. D. Beers*	S6-70	J. C. Midgett*	S6-65
L. I. Covey	S6-70	W. P. Nelson**	S6-21
L. D. Brist	S6-70	W. R. Shannon	S6-81
S. J. Davis	S6-81	D. K. Smith*	S6-60
B. J. Gray	S6-81	M. K. Ullah	L6-57
R. E. Heineman, Jr.	S6-65	R. W. Williams	S6-62
M. A. Hill*	S4-69	D. W. Wilson*	S6-70
K. A. Jennings-Mills*	S6-70	B. L. Charboneau(RL)	R3-78
S. E. Killoy*	S6-70	R. J. Townley	S6-51
R. A. Kropp	S6-81	USQ File	

*Attending PRC Members
**PRC Alternates

Background:

W. R. Shannon presented USQ Evaluation WESF-96-075 to the Plant Review Committee (PRC).

Before addressing the individual questions from the USQ evaluation, the evaluators explained their interpretation of the questions to avoid different interpretations by the PRC when reviewing the answers. The condition being evaluated was the existence of a NEW accident, hydrogen deflagration/explosion in the pool cell area, not an increase in the consequences of a previously analyzed accident, hydrogen explosion under the coverblocks.

USQ Evaluation (WESF-96-075):

The USQ evaluators answered Questions 1 and 2 on the USQ evaluation form as NO. The condition being evaluated is a new type of accident which does not affect the existing analyses.

The USQ evaluators answered Question 3 on the USQ evaluation form as YES/MAYBE. The evaluators believed that the WESF structure could be affected by this new hydrogen deflagration/explosion accident and may therefore affect the previous analyses on the structure.

The USQ evaluators answered Question 4 on the USQ evaluation form as NO. The condition being evaluated is a new type of accident which does not affect the existing analyses for consequences of a malfunction of equipment.

The USQ evaluators answered Question 5 on the USQ evaluation form as YES/MAYBE. A hydrogen deflagration/explosion in the pool cell area with coverblocks removed has not been documented in the WESF SAR.

Nuclear Safety disagrees with a YES/MAYBE to any of the USQ evaluation questions. Nuclear Safety questions the validity of the preliminary hydrogen analysis report from Pacific Northwest National Laboratories and the preliminary results from the Fire Hazards Analysis which were used in support of the USQ screening and evaluation to demonstrate an unanalyzed hazard exists. These reports need to be verified, reviewed and released. In addition, the Hydrogen Accumulation in the Pool Cell Operational Safety Requirement does address hydrogen control for the pool cell area.

Due to several questions being raised, the PRC agreed that it would reconvene in one week to allow the evaluators and Nuclear Safety time to research past analyses to determine if this accident, hydrogen deflagration/explosion in the pool cell area, had been previously analyzed. Operating controls and timely orders are in place to ensure the facility is in a safe condition pending resolution of this potential USQ.

The PRC Chairperson also noted to the PRC members that the potential of something being unreviewed should be identified and addressed as a USQ until resolution - even if the resolution only involves researching past analyses.

MEETING MINUTES

Subject: PRC Meeting - Review of WESF Pool Cell Hydrogen Issues USQ Evaluation

TO: DISTRIBUTION DATE: 3/20/96 BUILDING: MO400

FROM: L. I. Covey CHAIRMAN: R. E. Heineman, Jr

Dept-Operation-Component	Area	Shift	Meeting Date	Number Attending
B Plant/WESF PRC	200E	Day	3/13/96	15

Distribution:

D. D. Beers*	S6-70	J. C. Midgett	S6-65
L. I. Covey	S6-70	W. P. Nelson**	S6-21
L. D. Brist	S6-70	W. R. Shannon	S6-81
S. J. Davis	S6-81	D. K. Smith*	S6-60
B. J. Gray	S6-81	M. K. Ullah	L6-57
R. E. Heineman, Jr.*	S6-65	R. W. Williams	S6-62
M. A. Hill*	S4-69	D. W. Wilson*	S6-70
K. A. Jennings-Mills*	S6-70	B. L. Charboneau(RL)	R3-78
S. E. Killoy*	S6-70	R. J. Townley	S6-51
R. A. Kropp	S6-81	USQ File	

*Attending PRC Members
**PRC Alternates

[NOTE: D. D. Beers was not present at the meeting, but his concurrence with the PRC conclusions was received prior to these meeting minutes being issued.]

Background: (Continued from 3/6/96 meeting)

The hydrogen accumulation report from Pacific Northwest National Laboratories (PNNL) was finalized and the time to accumulate hydrogen to 4% volume in the pool cell area takes a minimum of 240 hours. Nuclear Safety believes that to lose ventilation for 240 hours with no intervention is incredible and a USQ does not exist. The existing Hydrogen Concentration in the Pool Cells OSR addresses hydrogen accumulation in the pool cell area and therefore the safety basis recognized and accounted for possible hydrogen buildup in the pool cell area. In addition, ignition sources in the pool cell area do not have enough energy to ignite hydrogen at 4% volume.

One of the USQ evaluators explains that the WESF Safety Analysis Report (SAR) accident analysis assumes coverblocks are over the pool cells and only addresses an explosion under the coverblocks. From the existing information in the SAR and Operation Safety Requirements (OSRs) it could be inferred that an explosion in the pool cell area was incredible and therefore only the under coverblock explosion was analyzed. However, this is not clearly stated in the SAR.

It was proposed that the issue is not how long it takes to reach 4% hydrogen by volume, but whether or not 4% can be reached. The PRC agreed that on the basis of the existing data, it may be possible to reach 4% hydrogen by volume in the pool cell area.

The PRC then discusses whether or not the plant has a risk that is not understood and accepted by the Department of Energy. The accident analysis does not clearly address a otential hydrogen explosion above the pool cell coverblocks; but the Hydrogen

Concentration in the Pool Cells OSR has hydrogen concentration limits and recovery actions for the pool cell area above the coverblocks.

The PRC Chairperson requested that the PRC review each question on the USQ evaluation.

USQ Evaluation (WESF-96-075):

Question 1 was answered NO by the evaluators and the PRC unanimously agreed.

Question 2 was answered NO by the evaluators and the PRC unanimously agreed.

Question 3 was originally answered YES/MAYBE by the evaluators, but after discussions resulting in the PRC meeting, the evaluators changed the answer to NO. This was due to the interpretation of the condition being analyzed. As stated in the meeting minutes for March 6, 1996 the condition being analyzed is for a new type of accident and not an increase in the consequences of a previously analyzed accident (hydrogen explosion under the coverblocks). Therefore, the answer to this question should be NO. The PRC unanimously agreed.

Question 4 was answered NO by the evaluators and the PRC unanimously agreed.

Question 5 was answered YES/MAYBE by the evaluators and the PRC agreed. This decision was not unanimous, Nuclear Safety disagreed with the YES/MAYBE.

Question 6 was answered YES/MAYBE by the evaluators and the PRC agreed. This decision was not unanimous, Nuclear Safety disagreed with the YES/MAYBE.

Question 7 was answered NO by the evaluators and the PRC unanimously agreed.

Question 8 was answered YES/MAYBE by the evaluators and the PRC unanimously disagreed. The PRC did not agree that a new/revised would be required with the new accident analyses. The existing OSR addresses hydrogen control limits for the pool cell area.

Due to YES/MAYBE answers to Questions 5 and 6, the PRC declared a USQ. WESF Engineering will prepare the Justification for Continued Operation (JCO) to be approved by DOE and the WESF Facility Manager will update the occurrence report.

The PRC then determined there were adequate controls for the facility with this USQ until the JCO is approve by DOE.

- There is an existing emergency procedure, EO-001-006, to respond to loss of ventilation in the pool cell area. The procedure requires the facility to start de-energizing equipment if the ventilation system has been down for 32 hours and attempts at restarting the system have failed.

- Standing Order to contact management and cognizant engineers if the facility loses a K-1 exhaust fan and recovery efforts are not underway within one hour for longer than one hour.

- OSR 11.4.3.3 address control of hydrogen in the WESF pool cell area.

- It conservatively takes 240 hours to accumulate 4% hydrogen by volume in the pool cell area without ventilation.

B Plant/WESF Safety Review of Occurrence

REFERENCE ITEM #: ECN 617211	USQ LOG #: WESF-96-075

TITLE:

Hydrogen Buildup in Pool Cell Building

QUESTIONS:

1.	Does the occurrence have any potential for impacting the safety basis?	N/A___	NO___	YES/MAYBE X
2.	Does the occurrence possibly call into question any information explicitly or implicitly relied upon in the safety basis?	N/A___	NO___	YES/MAYBE X
3.	Does the occurrence introduce any possibility that the margin of safety defined in the TSRs (OSRs) may be reduced?	N/A___	NO___	YES/MAYBE X

BASIS:
(Supporting information is required for each answer; attach additional pages as necessary.)

Background:

Following meetings on a draft analysis report on Hydrogen concentration in the WESF Pool Cell building being performed by Pacific Northwest National Laboratories (PNNL), WESF Engineering began a review of the WESF Safety Basis documentation to evaluate if a discovery might exist. This led to a review of the Safety Evaluation performed when the coverblocks were removed from the active pool cells, ECN 617211, USQ Log # WESF-94-120.

See attachment for continuation.

USQE #1:

☐ Not a discovery
☒ Requires evaluation

Wayne R. Shannon
R. John Townley, II
(PRINT NAME) Wayne R. Shannon 3-1-96

John Townley 3-1-96
(SIGNATURE) (DATE)

USQE #2:

☒ Agree
☐ Disagree (Requires explanation; attach additional pages as necessary.)

HARRY BRIST
(PRINT NAME)

Harry Brist 3/1/96
(SIGNATURE) (DATE)

USQ Log Number: WESF-96-075

BASIS:

Background:
The Pacific Northwest National Laboratory analysis of H_2 in the pool cell area substantiated the lack of control to mitigate the build up of H_2 in the pool cell area during extended loss of ventilation. This analysis prompted a safety review of H_2 build up conditions in the existing WESF safety basis.

LB 3/4/96
WES 3/4/96
JG 3/4/96
During the review, it has been determined by WESF Engineering that previous safety evaluations for hydrogen scenarios are in error. The reference is USQ-94-120 for Engineering Change Notice (ECN) 617211. The basis for the answers to questions in the evaluation relied upon the same consequence of H_2 explosion as in the SAR, WHC-SD-SAR-005, Rev 9, Section 19.13. The errors of USQ-94-120 are as follows:

- This existing analysis in section 9.13 of the WESF safety basis analyzed for an explosion of H_2 in a volume beneath the coverblocks. Without coverblocks the volume of explosion is over 2 orders of magnitude greater and the resultant consequence would be different.

- The analysis in USQ-04-120 did not fully evaluate removal of the recovery from LCO statement referring to locking out all electrical equipment under the coverblocks. In the pool cell area, there are many potential sources of ignition.

ANSWERS TO QUESTIONS 1 - 3

1) Does the occurrence have any potential for impacting the safety basis?

   Answer: Yes/Maybe

   The accident analysis in WHC-SD-SAR-005 (SAR), Section 9.13.2 describes an accident that is an explosion of H_2 below the coverblocks in a pool cell. The safety evaluation referenced above USQ Log # WESF-94-120 did not recognize the difference between the an explosion beneath the cover blocks and an explosion involving the entire volume of the pool cell area. A different consequence can be expected from a volume of H_2 detonated in a building the size of the pool cell building as opposed to under one pool cell's coverblocks by 2 orders of magnitude.

2) Does the occurrence possibly call into question any information explicitly or implicitly relied upon in the safety basis?

   Answer: Yes/Maybe

   The information relied upon in the accident analysis was that the coverblocks are in place over active pool cells and that in the event of loss of ventilation, all electrical equipment will be locked out immediately. With the coverblocks removed, the basis for the explosion is the entire pool cell area and many ignition source exist. Therefore the magnitude of the explosion is much larger and increase the probability of ignition. —?

USQ Log Number: WESF-96-075

3) Does the occurrence introduce any possibility that the margin of safety defined in the TSRs (OSRs) may be reduced?

Answer: Yes/Maybe

The OSR section 11.4.3, "Pool Cell Hydrogen Explosion" was revised by ECN 617211 and a safety evaluation was performed to remove coverblocks. When the recovery statement was removed stating that "any electrical equipment determined to be installed beneath the coverblocks of an active pool cell shall be locked out immediately". The analysis should have then considered that there are numerous sources of ignition in the general pool cell area and the OSR recovery statement should have been modified to lock out any electrical equipment in the pool cell area.

LD 3/4/96 WS 3/4/96 [illegible] 3/4/96.

The OSR section 11.4.3, "Pool Cell Hydrogen Explosion," does not provide mitigating recovery actions for the full pool cell volume H_2 accumulation and potential explosion.

TRP/BP-5.43-2(11-94)

Identification Number: WESF-96-075	USQ EVALUATION	Page 1 of 3

Title: Hydrogen Buildup in Pool Cell Building

BACKGROUND:

On March 4, 1996, the B Plant/WESF Plant Review Committee agreed with WESF engineering that a DISCOVERY exists which could potentially place the operations of the WESF facility outside the AUTHORIZATION BASIS. The DISCOVERY (USQ Log number WESF-96-075) identifies that previous safety evaluations for hydrogen scenarios are in error. For complete background information see USQ Safety Review (WESF-96-075).

The WESF SAR describes hydrogen explosions in process cells, process vessels and under the pool cell cover blocks (Section 9.13). However, the SAR does *not* consider an explosion involving the entire air volume of the capsule storage area.

The pool cell hydrogen explosion accident described in the SAR considered the potential for radiolytically produced hydrogen to accumulate under the cover blocks. For each cell, the air volume under the cover blocks was approximately 6 cubic meters, or 240 cubic feet. The concern was that, if ventilation were interrupted, hydrogen could build up to explosive levels over a relatively short period of time.

The pool cell cover blocks were removed in late 1994 (reference ECN 617211; USQ Log # WESF-94-120). With the cover blocks removed, hydrogen would no longer be trapped under the coverblocks. The accident analysis in section 9.13.2 does not consider a potential accident involving an accumulation of hydrogen above the Lower Flammability Limit (4.0 vol%) in the entire pool cell airspace, with subsequent explosion.

Pacific Northwest National Laboratories study WESF-001, dated 3/4/96, concludes that the hydrogen concentration may exceed the Lower Flammability Level in 54.84 hours, if ventilation is interrupted. In this case there could be the potential for a hydrogen explosion involving the entire pool cell area air space. Such an explosion could involve more potential energy than an explosion confined to the space under the cover blocks.

1. Does the PROPOSED CHANGE, test, experiment or DISCOVERY increase the probability of occurrence of an accident previously evaluated in the AUTHORIZATION BASIS documentation?

   [X] No [] Yes/Maybe

   BASIS:

The WESF AUTHORIZATION BASIS accident scenarios in WESF Safety Analysis Report (SAR) Chapter 9 do not evaluate an accident scenario involving the entire pool cell airspace developing a concentration of hydrogen above the Lower Flammability Level. The scenario in SAR Section 9.13.2, "Explosion in Pool Cell" only evaluates an accident involving the accumulation of hydrogen under the pool cell coverblocks. Therefore, the Discovery does not increase the probability of occurrence of an accident previously evaluated in the AUTHORIZATION BASIS.

2. Does the PROPOSED CHANGE, test, experiment or DISCOVERY increase the consequences of an accident previously evaluated in the AUTHORIZATION BASIS documentation?
[X] No [] Yes/Maybe

BASIS:

As stated in the response to question number 1, the accident scenarios in the WESF AUTHORIZATION BASIS do not address an accident involving the conditions covered by this DISCOVERY. Therefore, the DISCOVERY does not increase the consequences of an accident previously evaluated in the AUTHORIZATION BASIS documentation.

3. Does the PROPOSED CHANGE, test, experiment or DISCOVERY increase the probability of occurrence of a malfunction of EQUIPMENT IMPORTANT TO SAFETY (ITS EQUIPMENT) previously evaluated in the AUTHORIZATION BASIS documentation?
[X] No [] Yes/Maybe

BASIS:

The DISCOVERY is for conditions at WESF which have not been previously evaluated in the accident scenarios of the WESF AUTHORIZATION BASIS. Therefore, the DISCOVERY does not increase the probability of occurrence of a malfunction of EQUIPMENT IMPORTANT TO SAFETY (ITS EQUIPMENT) previously evaluated in the AUTHORIZATION BASIS documentation.

4. Does the PROPOSED CHANGE, test, experiment or DISCOVERY increase the consequences of a malfunction of ITS EQUIPMENT previously evaluated in the AUTHORIZATION BASIS documentation?
[X] No [] Yes/Maybe

BASIS:

As stated in Response #1, the WESF AUTHORIZATION BASIS did not consider the accident related to this DISCOVERY. Therefore, the DISCOVERY does not increase the consequences of a malfunction of ITS EQUIPMENT previously evaluated in the AUTHORIZATION BASIS documentation.

5. Does the PROPOSED CHANGE, test, experiment or DISCOVERY create the possibility of an accident of a different type than any previously evaluated in the AUTHORIZATION BASIS documentation?
[] No [X] Yes/Maybe

BASIS:

The WESF SAR describes hydrogen explosions in process cells, process vessels and under the pool cell cover blocks (Section 9.13). However, the SAR does *not* consider an explosion involving the entire air volume of the capsule storage area.

Therefore, this DISCOVERY does create the possibility of an accident of a different type than any previously evaluated in the AUTHORIZATION BASIS documentation.

Title: Hydrogen Buildup in Pool Cell Building

6. Does the PROPOSED CHANGE, test, experiment or DISCOVERY create the possibility of a malfunction of ITS EQUIPMENT of a different type than any previously evaluated in the AUTHORIZATION BASIS documentation?
[ ] No [X] Yes/Maybe

BASIS:

Forces consequent to a hydrogen explosion may be large enough to cause damage to breach the pool cell storage structure. This could lead to another accident, "Rapid Loss of Pool Cell Shielding Water.", described in SAR Section 9.18. The possibility of such damage due to a hydrogen explosion was not considered in the WESF AUTHORIZATION BASIS. Therefore, this DISCOVERY may create the possibility of a malfunction of the pool cell structure (ITS EQUIPMENT) of a different type than any previously evaluated.

7. Does the PROPOSED CHANGE, test, experiment or DISCOVERY reduce the margin of safety as defined in the basis for any Technical Safety Requirement?
[X] No [ ] Yes/Maybe

BASIS:

The margin of safety as described in the WESF SAR, WHC-SD-SAR-005, rev. 12 is the maintenance of hydrogen concentration in the pool cell area air spaces below the lower flammability limit. The OSR limit is 4.0 volume percent hydrogen (Safety Limit); the Limiting Control Setting is 3.0 volume percent. Planned outages of the ventilation system are allowed through calculations presented in Section 11.4.3.4. These calculations ensure that hydrogen will not build up to the OSR limits.

The basis of the OSR provides an equation for hydrogen generation rate, and specifies a conservative value of 4.0 volume percent for lower flammability limit. Neither of these is affected by the DISCOVERY. Therefore, this DISCOVERY does not reduce the margin of safety as defined in the basis for the OSRs.

8. Does the PROPOSED CHANGE, test, experiment or DISCOVERY require a new or revised Technical Safety Requirement?
[ ] No [X] Yes/Maybe

BASIS:

Based on the potential consequences determined by an analysis of the new postulated accident, revisions to OSR 11.4.3 may be warranted. Therefore, the DISCOVERY may require a new or revised OSR.

USQE #1 Wayne R Shannon (Print Name)

Wayne R Shannon Signature Date: 3/13/96

USQE #2 R. J. Townley, II (Print Name)

R. J. Townley, II Signature Date: 3/13/96

PRC REVIEW (If Required)

Meeting No.: _____ Date _____

PRC Chairman Concurrence: R K Heineman Signature Date: 3/14/96

MEETING MINUTES

Subject: PRC Meeting - Review of WESF Pool Cell Hydrogen Issues USQ Screening

TO: DISTRIBUTION DATE: 3/19/96 BUILDING: MO400

FROM: L. I. Covey CHAIRMAN: J. C. Midgett

Dept-Operation-Component	Area	Shift	Meeting Date	Number Attending
B Plant/WESF PRC	200E	Day	3/04/96	18

Distribution:

D. D. Beers	S6-70	J. C. Midgett*	S6-65
L. I. Covey	S6-70	W. P. Nelson**	S6-21
L. D. Brist	S6-70	W. R. Shannon	S6-81
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M. A. Hill*	S4-69	D. W. Wilson*	S6-70
K. A. Jennings-Mills*	S6-70	B. L. Charboneau(RL)	R3-78
S. E. Killoy*	S6-70	R. J. Townley	S6-51
R. A. Kropp	S6-81	USQ File	

*Attending PRC Members
**PRC Alternates

Background:

R. J. Townley and W. R. Shannon presented the background associated with USQ Screening WESF-96-075 to the Plant Review Committee (PRC).

The Unreviewed Safety Question (USQ) evaluators believed the previous evaluation (WESF-94-120) for the pool cell coverblock removal from the Safety Analysis Report (SAR) was incomplete. It did not fully evaluate the affect of removing the coverblocks on the accident analyses contained in the SAR.

Preliminary analysis results from Pacific Northwest National Laboratories indicated that given a sufficient amount of time the pool cell area could accumulate hydrogen to 4% by volume (current safety limit) thus reaching the lower flammability limit. Therefore, the evaluators believed the accident analyses should have addressed a pool cell area explosion as well as an under-coverblock explosion.

Preliminary analysis performed for the WESF Fire Hazards Analysis (FHA) indicated that an explosion in the pool cell area with 10% hydrogen by volume may damage the WESF structure and or the pool cell structure. The existing WESF accident analyses states the an under-coverblock explosion would not damage the capsule or cause a significant loss of water.

USQ Screening (WESF-96-075):

The USQ evaluators answered Question 1 on the USQ screening form as YES/MAYBE. Section 9.13.2 of the WESF SAR only addresses under-coverblock explosion. An explosion involving the pool cell area would involve a much larger volume.

The PRC agreed with the answer to Question 1.

The USQ evaluators answered Question 2 on the USQ screening form as YES/MAYBE. The safety basis relies on the electrical equipment being locked out during a loss of ventilation. Sources of ignition above the pool cell coverblocks were previously ignored in the safety basis. The PRC wanted to note that the last sentence from the basis provided for question 2, "Therefore the magnitude of the explosion is much larger and increase the probability of ignition" may be inaccurate since the consequences and probability of an explosion are not known at this time.

The PRC agreed with the answer to Question 2.

The USQ evaluators answered Question 3 on the USQ screening form as YES/MAYBE. There are ignition sources in the pool cell area which were not accounted for, and the revision to the SAR to remove references to coverblocks removed the statement to lock out electrical equipment below the coverblocks. The evaluators believe that OSR 11.4.3 does not provide mitigating recovery actions for the full pool cell volume hydrogen accumulation and potential explosion.

The PRC agreed with the answer to Question 3.

PRC Vote:

The PRC unanimously voted that a Discovery exists. The PRC Chairperson directs the evaluators to perform a USQ evaluation.

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
W. R. Shannon, 372-0273	J. E. Mecca, RL	9651207

Subject: UNREVIEWED SAFETY QUESTION ON WASTE ENCAPSULATION AND STORAGE FACILITY, HYDROGEN BUILD-UP IN POOL CELL AREA-JUSTIFICATION FOR CONTINUED OPERATION

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		R. J. Bliss	B3-04	
		L. I. Covey	S6-51	X
		R. E. Heineman, Jr.	S6-60	X
	3/15/96 KAJM	K. A. Jennings-Mills	S4-70	X
		A. D. Lowe	S6-70	
		J. C. Midgett	S6-65	X
	3-15-96 JP	J. L. Pennock	S4-70	X
	3-15-96 WRS	W. R. Shannon	S6-81	X
		D. K. Smith	S6-60	X
		R. J. Townley	S6-51	X
		D. W. Wilson	S4-66	
		JCM:WRS LB		X

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

March 15, 1996 9651207

Mr. J. E. Mecca, Director
Transition Program Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Mecca:

UNREVIEWED SAFETY QUESTION ON WASTE ENCAPSULATION AND STORAGE FACILITY, HYDROGEN BUILD-UP IN POOL CELL AREA-JUSTIFICATION FOR CONTINUED OPERATION

References: 1) RL--WHC-WESF-1996-0009, "Unreviewed Safety Question (USQ) Identified Regarding Hydrogen Generation and Possible Build-up In the WESF Pool Cell Area," dated March 4, 1996.

2) USQ Log #: WESF-96-075, "Hydrogen Buildup in Pool Cell Building," dated March 4, 1996.

3) WHC-SD-WM-SAR-005, Rev 12, "Waste Encapsulation and Storage Facility Safety Analysis Report."

This letter transmits, for approval, the Justification for Continued Operation (JCO) for Waste Encapsulation and Storage Facility (WESF) operations. The JCO follows the declaration of an Unreviewed Safety Question (USQ) associated with the potential for hydrogen accumulation in the general pool cell area at WESF. The USQ is considered an administrative concern, with no safety significance, which results from the interaction between new information, a preliminary Pacific Northwest National Laboratory (PNNL) review of hydrogen build-up in the pool cell area, and inadequate detail in the WHC-SD-WM-SAR-005, Rev 12, "Waste Encapsulation and Storage Facility Safety Analysis Report" (WESF SAR).

The originally reported Off-Normal condition, RL--WHC-WESF-1996-0009, "Unreviewed Safety Question (USQ) Identified Regarding Hydrogen Generation and Possible Build-up In the WESF Pool Cell Area," dated March 4, 1996, was upgraded to an Unusual Occurrence on March 13, 1996.

In Reference 3, Section 9.13.2 of the "Accident/Systems Safety Analysis" an accident scenario involving a full pool cell area hydrogen event is not specifically evaluated. The declared USQ results from the possibility of an accident of a different type than any previously evaluated in the AUTHORIZATION BASIS documentation. The WESF Plant Review Committee has agreed with this finding.

The most conservative estimate by PNNL, that hydrogen concentrations would not reach the Lower Flammability Limit in the pool cell area for at least 10 days after loss of ventilation, provides sufficient time for detecting and initiating mitigating controls already specified in the WESF SAR. Specifically, OSR 11.4.3 requires immediate notification of WESF management who will determine appropriate corrective action, and all nonessential processing shall be shut down. In addition OSR Section 11.2.6.2 requires a recovery plan be initiated and implemented by WESF management.

The attached JCO concludes that appropriate controls are already in place at WESF to mitigate any unacceptable safety consequences resulting from the postulated accident in PNNL's draft report. Therefore, no additional operational restrictions or controls are necessary to protect the public, the environment, or onsite/offsite workers.

If you have any questions, please contact me on 376-9522 or K. A. Jennings-Mills on 372-0101.

Very truly yours,

for J. C. Midgett, Director
B Plant/WESF Transition Project
Transition Projects

sms

Attachment

RL - K. A. Benguiat
B. L. Charboneau
D. T. Evans
A. H. Wirkkala (w/o attachment)

MacTec - R. A. Kropp

JUSTIFICATION FOR CONTINUED OPERATION

A. INTRODUCTION

This Justification for Continued Operations (JCO) is submitted in support of continued operations, surveillance, and maintenance activities at the Waste Encapsulation and Storage Facility (WESF). These activities, in support of operation of the WESF, will not be restricted due to the declaration of the Unreviewed Safety Question (USQ).

In summary, a draft Pacific Northwest National Laboratory (PNNL) report concluded that during a pool cell area loss of ventilation the possibility of attaining a hydrogen concentration above the Lower Flammability Limit (LFL) 4 vol% exists. In this case, there could be the potential for a hydrogen explosion involving the entire pool cell area air space.

The WESF Safety Analysis Report (SAR) describes hydrogen explosions in process cells, process vessels, and under the pool cell cover blocks (Section 9.13). However, the WESF SAR does *not* consider an explosion involving the entire air volume of the capsule storage area.

The pool cell hydrogen explosion accident described in the SAR considered the potential for hydrogen to accumulate under the cover blocks. For each cell, the air volume under the cover blocks was approximately 6 cubic meters (240 cubic feet). The concern was that, if ventilation were interrupted, hydrogen could build up to the LFL over a relatively short period of time.

The pool cell cover blocks were removed in late 1994 (Reference ECN 617211; USQ Log # WESF-94-120). With the cover blocks removed, hydrogen would no longer be trapped under the cover blocks. The accident analysis in Section 9.13.2 does not consider a potential accident involving an accumulation of hydrogen above the LFL in the entire pool cell airspace, with subsequent explosion.

B. DISCOVERY

During the review of the PNNL study on hydrogen (H_2) build-up in the WESF pool cell area, it was determined by WESF Engineering that previous safety evaluations for hydrogen scenarios may be in error. The basis for answers to questions in the safety evaluation for the removal of cover blocks, USQ-94-120, relied on the same consequence of the H_2 explosion as in Chapter 9, Section 9.13.2 of the WESF SAR (Reference 3). The problems found were:

- The existing analysis in Section 9.13.2 of the WESF safety basis analyzed for an explosion of H_2 in a volume beneath the cover

blocks. Without cover blocks, and during a ventilation outage, the hydrogen will collect in the entire pool cell area, allowing a significantly larger quantity of hydrogen to accumulate. The resultant consequence of this larger volume explosion could therefore be postulated to be different than previously analyzed.

- The analysis in USQ-94-120 did not fully evaluate removal of the recovery from Limiting Conditions for Operation (LCO) statement referring to deenergizing all electrical equipment under the cover blocks. In the pool cell area, there are many potential sources of ignition.

C. TECHNICAL BASIS FOR JCO

The WESF SAR (Reference 3), as described above, does not explicitly consider a full pool cell air volume explosion in the accident/system safety analysis section. In the absence of the safety analysis of this potential different type accident, it has been concluded by the USQ evaluation team and concurred with by the Plant Review Committee, that controls already in place at WESF adequately mitigate any consequences for the worst case conclusion which may result from completion of the PNNL review. The controls in place are:

- LCO as defined in the WESF SAR, WHC-SD-WM-SAR-005 Rev. 12, Section 11.4.3.3.3.
- LCO Recovery statements as defined in the WESF SAR, Section 11.4.3.5.
- Emergency Plant Operating Procedure EO-001-006, "Respond to Pool Cell Emergencies," Section F, "Loss of Ventilation."
- WESF Facility Manager Standing Order SO-96-016 dated March 1, 1996.

Following is a more detailed description of each control and how it supports the JCO.

1. LCO as defined in the SAR, Section 11.4.3.3.3.

During normal operation, ventilation of the pool cell area is provided by operation of the K-1 exhaust and K-4 supply systems. The K-1 exhaust fan has an installed backup. The normal ventilation systems provide air dilution of the hydrogen produced in the storage pools.

The WESF SAR, Section 11.4.3.3.3 "Limiting Conditions for Operations" states: "Dilution air flow rates shall provide a minimum flow necessary to maintain hydrogen concentrations below

the safety limit." The calculated minimum and measured normal dilution air flow rates for the pool cell area were documented in WHC-SD-WM-TD-009, as 58 cubic feet per minute (CFM) and 5,500 CFM, respectively.

The LCO further states "Assurance of adequate air flow shall be provided in the following manner:

1. In the event of failure of the K1 duct low vacuum alarm, physical surveillance of dilution air flow measurement instrumentation shall be conducted per operating procedure.

2. Normal hydrogen dilution air flows will be provided by pool exhaust flow.

   - The high-pressure alarm installed in the K1 duct to indicate loss of ventilation shall be maintained operable.

   - Instrumentation for the measurement of total hydrogen dilution air flow installed in the pool-cell area, pool cell exhaust (K1) ventilation duct, shall be maintained operable."

The LCO ensures that loss of ventilation in the pool cell area will be discovered. This assurance of discovery supports the JCO.

2. LCO Recovery statement summation from Section 11.4.3.5.

In the event that the ventilation system fails to provide adequate air dilution in the pool cell area, entry into an LCO will be declared by Operations management. Recovery statements provided in the Operational Safety Requirements (OSRs), Sections 11.4.3.5, and 11.2.6.2 require actions. These require immediate actions to be directed by a recovery plan approved by Westinghouse Hanford Company (WHC) management.

3. Emergency Plant Operating Procedure EO-001-006, "Respond to Pool Cell Emergencies," Section F, "Loss of Ventilation."

One of the controls already in place is the emergency response procedure for the pool cell area. In the event of a loss of ventilation, the section on "Loss of Ventilation" will be immediately performed. The procedure requires an immediate action to try and restore the ventilation system. In the event that ventilation cannot be restored, further actions are to de-energize all electrical equipment in the pool cell area. This action occurs 32 hours after loss of ventilation. A time of 36

hours would be required, per the OSR, to reach the Limiting Control Settings (LCS) limit of 3 vol%. This procedure, in parallel with the management recovery plan required in the LCO recovery statement, will mitigate hydrogen build-up in the pool cell area in support of this JCO.

4. WESF Facility Manager Standing Order SO-96-016.

A standing order was issued March 1, 1996, when the screening of the hydrogen issue was initiated, as a best management practice. The standing order states:

"Due to potential concerns regarding hydrogen generation and possible build-up in the WESF pool cell area, if K-1 exhaust fan is lost and controlled recovery efforts are not underway within one hour, contact the following people: J. L. Pennock, J. C. Midgett, K. A. Jennings-Mills, W. R. Shannon, T. Gainey."

Management can then expedite repairs and provide engineering resources well in advance of accumulation of hydrogen concentrations approaching the OSR limits. The draft PNNL report shows that the hydrogen concentration in the pool cell area can be controlled below the LCS limits by opening one pool cell outer door. This standing order will remain in place to allow for initiation of opening the door and will remain in place to support this JCO.

D. RESOLUTION OF THE UNREVIEWED SAFETY QUESTION (USQ)

The USQ can be resolved by successful completion of any one of the following steps.

1) Completion of the PNNL review, or subsequent evaluation by WHC, indicating that air dilution factors inherent in the pool cell area design/construction are adequate to prevent accumulation above 4%.

2) Modification of the current WESF SAR, with or without a supplemental safety evaluation as needed based on whatever is already in the WESF accident analysis file, to specifically address the pool cell area hydrogen scenario.

3) DOE approval of the WESF Interim Safety Basis.

cc: JLP
KRAML
LLC (Actin
DWW
0-T6/24

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. D. Wagoner/RL	President/WHC	Incoming: 9601273 WHC CC Recd: 05/24/96 am

Subject: UNREVIEWED SAFETY QUESTION OF WASTE ENCAPSULATION AND STORAGE FACILITY (WESF) HYDROGEN BUILD-UP IN POOL CELL AREA - JUSTIFICATION FOR CONTINUED OPERATION

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		President's Office	B3-01	
		R. J. Bliss (Sr. Staff/Assignee)	B3-04	X
		D. B. Cartmell	R3-50	X
		R. E. Heineman, Jr.	S6-60	X
		J. C. Midgett	S6-65	X*
		S. R. Moreno	B3-06	

*Received enclosure from RL.

For corrections contact:
Doris Hartley (376-8111), WHC Incoming Correspondence
Chris Hough (372-3931), WHC Outgoing Correspondence

9601273
WHC CC Recd: 05/24/96 am

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

96-BPlant-011

MAY 16 1996

Dr. A. L. Trego, President
Westinghouse Hanford Company
Richland, Washington

Dear Dr. Trego:

UNREVIEWED SAFETY QUESTION ON WASTE ENCAPSULATION AND STORAGE FACILITY (WESF) HYDROGEN BUILD-UP IN POOL CELL AREA - JUSTIFICATION FOR CONTINUED OPERATION

WHC letter, J. C. Midgett to J. E. Mecca, same subject, dated March 15, 1996, and the Justification for Continued Operation (JCO) attached to that letter, have been reviewed by RL staff and are approved. The enclosed comments (Enclosure 1) on the subject JCO are provided to document clarifications reached between your staff and mine.

The Safety Evaluation Report (SER) (Enclosure 2) documents RL's review of the JCO. Operations at the WESF are authorized on an interim basis subject to the controls noted in the JCO. It is expected that the USQ will be resolved in a timely manner and as outlined in the JCO. The JCO and SER hereby become part of the Authorization Basis for WESF. This change to the Authorization Basis will remain in place pending issuance and approval by DOE of either the WESF Basis of Interim Operation or an update to the WESF Safety Analysis Report. WHC is directed to request approval of closure of the USQ and approval of the revised Authorization Basis when this issue has been resolved.

If you have any questions, please call me or your staff may call David T. Evans, B Plant/WESF Program Manager, on 373-9387.

Sincerely,

John D. Wagoner
Manager

TPD:DTE

Enclosures

cc w/encl:
J. C. Midgett, WHC
J. L. Pennock, WHC
R. A. Kropp, MACTEC

TPD Comments
WESF Pool Cell Hydrogen Justification for Continued Operation

1. Attachment, Section C - TECHNICAL BASIS FOR JCO

The statement "...controls already in place at WESF adequately mitigate any consequences for the worst case..." may not be correct. The consequences of a hydrogen deflagration/explosion are not yet quantified. However, the interim controls put into place provide assurance that the probability of the event has been minimized and is therefore acceptable.

2. Attachment, Section C1, second paragraph

WHC-SD-WM-TD-009 states that 58 cubic feet per minute (cfm) of dilution air is required to mitigate the evolution of hydrogen in the WESF Pool Cells. This value is based on a hydrogen generation rate noted in the WESF SAR. PNNL has reevaluated the hydrogen generation rates and has determined that the generation rates are considerably less than the values noted in the SAR and that the required dilution rate is on the order of 20 cfm. For the record, it is noted that the value stated in both the WHC-SD-WM-TD-009 and the SAR differ from the current PNNL calculated value.

3. Attachment, Section C3

The JCO notes that the WESF OSR/LCS states that the minimum duration required to reach 3% for the pool cell area is 36 hours. This duration is based on the generation rate noted in the WESF SAR. As noted above, PNNL has reevaluated the generation rate. PNNL now believes that duration required to reach 3% hydrogen is on the order of one week (i.e., 10 days to achieve 4%). For the record, it is noted that the value stated in the WESF SAR differ from the current PNNL calculated value.

David T. Evans
David T. Evans
TPD/B Plant-WESF Program Manager

3/25/96
Date

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

SAFETY EVALUATION REPORT

for the

JUSTIFICATION FOR CONTINUING OPERATION

WESF POOL CELL HYDROGEN USQ

Rev 0

WHC LETTER 9651207
WESF USQ LOG # WESF-96-075
PNL-WESF-001 Rev. 2

HANFORD RESERVATION/RICHLAND OPERATIONS

WESTINGHOUSE HANFORD COMPANY - CONTRACT DE-AC06-87RL10930

May 7, 1996

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

APPROVAL
JUSTIFICATION FOR CONTINUING OPERATION

_____ _____

John D. Wagoner
Manager

Date

TABLE OF CONTENTS

WESF - JUSTIFICATION FOR CONTINUING OPERATION REVIEW TEAM

David T. Evans
David T. Evans PE, Member
DOE-RL/TPD

Ronald A. Kropp
Ronald A. Kropp PE, Member
GSSC, DOE-RL/TPD

1.0 INTRODUCTION

This Safety Evaluation Report (SER) presents the results of a Department of Energy, Richland Office (DOE-RL) review of the proposed Justification for Continuing Operation (JCO) for the Waste Encapsulation and Storage Facility (WESF). The SER was developed per DOE-STD-1104-96, Review and Approval of Nonreactor Nuclear Facility Safety Analysis Reports. The JCO was developed in response to DOE Order 5480.23, section 9c, which requires DOE approval of Unreviewed Safety Questions. DOE Order 5480.21, section 10d, requires Westinghouse Hanford Company (WHC) to notify DOE via the USQ process whenever WHC identifies information that indicates a potential inadequacy of previous safety analyses. On March 14, 1996, WHC reported that a potential existed for a hydrogen deflagration in the Waste Encapsulation and Storage Facility (WESF) pool cell area. This event had not been previously analyzed in the WESF Safety Analysis Report (SAR), WHC-SD-WM-SAR-005, Rev 12.

The DOE-RL review was conducted by a team of technical specialists, identified elsewhere in this SER. This SER provides the basis for DOE-RL approval of the JCO.

2.0 EXECUTIVE SUMMARY

2.1 Facility Identification/Description

This SER relates to the WESF in the 200 East area of the Hanford Reservation.

WESF was constructed in the early 1970's and was activated in 1974. The waste management mission of WESF was the concentration, solidification and encapsulation of high level radioactive waste, e.g., cesium and strontium. WESF received purified high heat content fission products from B Plant. The cesium and strontium had been separated from Tank Farm Waste and PUREX waste to reduce the heat load of these elements in the underground storage tanks at Hanford. This mission was called Fractionization.

WESF (building 225-B) is attached physically to the west end of the B Plant canyon, 221-B. WESF consists of 7 hot cells, an aqueous make-up area, a storage pool area and a truck port. Radiological confinement features were incorporated in the various facilities and support systems to prevent exposure of plant personnel and the general public to excessive radiation. The 225-B Canyon structure separates clean working areas from highly-contaminated process areas with heavy concrete shielding. Capsules containing Cs^{137} and Sr^{90} are stored in water filled pool cells. The pool cells were originally covered with heavy shielding coverblocks. The cover blocks were removed in 1994.

2.0 EXECUTIVE SUMMARY (cont.)

2.1 Facility Identification/Description (cont.)

WESF includes the following engineered systems:

- Confinement system
- Ventilation system/HEPA filter system
- Auxiliary structures, utilities and fire protection system

2.2 Facility Mission/Scope of Operation

The mission of WESF is to retrieve leased capsules from the commercial sector; to store and maintain 73 million curies of encapsulated cesium chloride and strontium fluoride in a safe and environmentally sound manner; and to surveill and monitor the capsules stored at WESF.

2.3 Summary of Hazards/Accident Scenarios

Section 9.13 of the WESF SAR discusses the potential accident scenario involving loss of ventilation in the pool cell area and subsequent buildup of hydrogen under the pool cell coverblocks. Hydrogen concentrations in excess of 4% were postulated under the coverblock whenever ventilation was secured for more than 9.2 hours. This level of hydrogen concentration was sufficient for a deflagration (i.e., rapid burning without detonation). Operational Safety Requirement (OSR) 11.4.3 required that ventilation be maintained in the pool cell area to remove the hydrogen generated via radiolytic decomposition of water. The SAR analysis only considered a deflagration below the coverblocks and did not consider the possibility that the entire pool cell area (≈31,000 cubic feet) could also experience hydrogen concentrations above 4%. The coverblocks over active pool cells were removed in 1994 to preclude the possibility of dropping a coverblock into a pool cell.

WESF engineering and management, in response to various plant events and as an integral part of the development of the WESF Basis of Interim Operation (BIO), has been evaluating the evolution of hydrogen by the WESF Pool cells. WHC has determined that:

- Hydrogen generation rates used in the development of the WESF SAR were conservative (by a factor of least 3).

- Hydrogen concentrations in the pool cell area could exceed 4% or higher if ventilation was secured for extended periods of time, assuming minimal diffusion and air in-leakage.

NOTE

The WESF BIO is scheduled for submittal to DOE in September 1996.

2.0 EXECUTIVE SUMMARY (cont.)

2.3 Summary of Hazards/Accident Scenarios

With the possibility that the whole pool cell area could attain hydrogen concentrations in excess of 4%, WHC determined that it had identified a new accident scenario not previously evaluated and that the existing WESF safety analyses may be potentially inadequate.

2.4 Exemptions/TPA Impacts

No exemptions requested. No TPA impacts.

2.5 Major Mission Impacts

No major mission impacts are created because of the USQ or the JCO.

2.6 Conditions of Approval

There are no special conditions of approval for this JCO.

3.0 REVIEW PROCESS

3.1 Basic Premise of Review

A detailed review of the JCO and WESF USQ Log # WESF-96-075 was performed. Included in the review was an evaluation of Pacific Northwest National Laboratory (PNNL) document PNL-WESF-001, Rev 2 Title: "An Analysis to Determine the Upper Bound on the Hydrogen Mole Fraction in the Pool Area of WESF", dated April 1996.

3.2 Summation of Review

The review determined:

- If pool cell ventilation is maintained at nominal values (≈ 5500 cfm), hydrogen buildup to deflagration levels will not occur.
- When ventilation is secured and without any mitigating features, hydrogen concentration will exceed 4% hydrogen.
- The time required to reach 4% hydrogen is in excess of 200 hours.
- If the doorway on the north wall of WESF is propped open, pool cell hydrogen concentration cannot exceed ≈1.4%.

4.0 BASE INFORMATION

4.1 Facility Hazard Categorization

WESF is a Category 2 facility. This JCO and SER do not change the hazard categorization of WESF.

4.0 BASE INFORMATION (cont.)

4.2 Source Terms

The WESF source term remains unchanged; e.g., 50 Megacuries of Cs^{137} and 23 Megacuries of Sr^{90}.

4.3 Hazards Identification

The specific hazard being evaluated is the generation of hydrogen due to radiolytic decomposition of water and the possibility of the ignition of the hydrogen.

4.4 Defense in Depth/Worker Safety

No changes will occur in the engineered barriers at WESF and therefore, the defense in depth at WESF remains unchanged. Worker safety is being maintained at the current acceptable level by the imposition of controls to prevent a hydrogen deflagration.

4.5 Accident Analyses

4.5.1 Beyond Design Basis Accident (BDBA)

No changes are proposed in the BDBA.

4.5.2 Design Basis Events (DBE)

No changes are proposed in the DBE.

4.5.3 Other Accidents

The pool cell hydrogen deflagration accident is being evaluated as part of the development of the WESF BIO. The BIO is scheduled to be submitted to DOE in September 1996. In the interim, the JCO issued by WHC will address the controls needed to minimize the probability of this accident occurring.

5.0 SAFETY STRUCTURES, SYSTEMS, AND COMPONENTS (SSC)

The only SSC affected by this JCO is the WESF pool cell structure.

6.0 DERIVATION OF TECHNICAL SAFETY REQUIREMENTS

OSR 11.4.3 addressed this event by requiring that ventilation be maintained at all times in the pool cell area. No additional OSR/TSRs are required.

7.0 PROGRAMMATIC CONTROLS

The JCO has been issued to address the possibility of hydrogen buildup at WESF in the event that ventilation is lost for extended periods of time. In the JCO, WHC noted existing controls and has implemented an additional interim control to minimize the probability of a hydrogen deflagration. Existing controls include:

- LCO 11.4.3.3.3 which requires the operability and operation of ventilation fans and a low duct pressure alarm.
- LCO 11.4.3.5 (Recovery Actions) which requires hydrogen concentrations to be maintained below 3%. Additionally the recovery actions require the cessation of plant processes and initiation of immediate corrective action to alleviate the hydrogen buildup.
- Emergency Procedure EO-001-006 which requires the evacuation of nonessential personnel and restricts entry into the pool cell area during the event. The procedure also requires that all electrical equipment in the pool cell area be secured within 36 hours. At 36 hours, the hydrogen concentration is less than 1% hydrogen.

WESF Operations has supplemented the above controls with Standing Order SO-96-016. This order requires notification of WESF engineering and facility management within one hour of loss of ventilation (if ventilation cannot be restored within one hour).

These controls provide an adequate temporary remedy. Long term solution will require a complete analysis of this event (to be documented in the WESF BIO) and the imposition of procedures, engineered controls, and/or TSRs to mitigate this hazard.

WHC has committed in the JCO to resolve the JCO in one of three manners, to wit:

- Complete PNNL review and demonstrate that normal air infiltration is sufficient to mitigate hydrogen buildup, or
- Update the WESF SAR to address the accident scenario, including the addition of licensing or engineering controls, or
- DOE approval of the WESF BIO, which will include the full analysis of this event.

The above alternatives are deemed acceptable.

8.0 RECORDS

The records associated with this SER are:

- WESF JCO and WHC LETTER 9651207
- WESF USQ Log # WESF 96-075
- PNNL document PNL-WESF-001, Rev. 2 Title: "An Analysis to Determine the Upper Bound on the Hydrogen Mole Fraction in the Pool Area of WESF", dated April 1996.

This SER, when approved, and the JCO become part of the WESF Authorization Basis.

9.0 CONCLUSIONS

9.1 Conclusions

The description of the operation of WESF with respect to hydrogen buildup and loss of ventilation is adequate. The JCO presents an adequate analysis of the event at WESF to allow interim operation of the facility. The WESF SAR indicates the probability of loss of all ventilation when coupled with the probability that the loss of ventilation will not be detected within a reasonable time frame is almost incredible.

The time frame required to build up hydrogen to a 4% level is in excess of 200 hours. The controls noted above are adequate to minimize the probability of a deflagration. Additionally, the PNNL report notes that simply opening the door on the north wall of WESF will effectively mitigate the hydrogen buildup.

The Review Team concludes that interim operation of WESF, as described in the JCO presents acceptable risk to the public, the environment, and onsite workers.

9.2 Recommendations

The Review Team recommends that the RL Manager approve the WESF JCO.

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary
__X__Final

Checklist Item:

2.2.1 - July 9, 1996

Acceptance Criteria:

Evidence that all required procedures involving WESF capsule return activities and Beneficial Uses Shipping System (BUSS) cask operations are upgraded, issued, and maintained to IP-1182.

Discussion:

- Completed, Reference checklist item No. 2.2.2

Supporting Documentation:

- NA

Outstanding Items/Limitations:

- NA

Completion: M. W. Pawlak Date: 7/24/96

Mgr. Approval: J. L. Pennock Date: 7/24/96

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__✓__Final

Checklist Item:

2.2.2 - August 2, 1996

Acceptance Criteria:

Evidence that no inadequacies (outstanding BP-2's) have been identified in procedures for WESF BUSS cask operations.

Discussion:

The Capsule Management Team identified 8 Operating Procedures (see attached Plant Operating Document Data System -- PODDS report) that will be required to support the ARECO Cesium Capsule Return. Each of the identified procedures has been revised as part of the B Plant/WESF procedure upgrade project within the last year. In addition, the procedures have been editorially updated to reflect B Plant/WESF re-engineering organization changes. No technical inadequacies (outstanding BP-2's) are identified.

Supporting Documentation:

PODDS report showing procedure revision status as of 08/02/96 (attached).

Approval documentation for current revision of each listed procedure (attached).

Outstanding Items/Limitations:

None

Completion: _____ Date: 08/02/96
S. C. Froehlich

Concurrence: _____ Date: 8/2/96
P. T. Saueressig

QUESTIONS/COMMENTS: 372-0072

PLANT OPERATING DOCUMENTS DATA SYSTEM (PODDS) -- STATUS OF PROCEDURES REQUIRED FOR ARECO RECEIPT (8-2-96)
- ACTIVE PROCEDURES & PROCEDURE CHANGE AUTHORIZATIONS -

8/02/96

PROCEDURE NUMBER	REV NO.	DESCRIPTION/TITLE	RELEASE DATE	PCA NUMBER	TYPE	PCA ISSUED	POINT OF CONTACT	BOOK NUMBER(S)
EO-100-012	C-1	OPERATE GO-NO-GO GAGE AND EXAMINE CAPSULES	7/15/96				P.T. SAUERESSIG	
EO-100-023	B-1	UNLOAD THE BENEFICIAL USES SHIPPING SYSTEM (BUSS) CASK	7/10/96	96-277	PERM	7/31/96	P.T. SAUERESSIG	
EO-906-003	F-1	TRANSFER AND STORAGE OF CAPSULES	7/15/96				L.D. BRIST	
EO-909-001	D-1	OPERATE 15-TON CANYON CRANE	7/15/96				K.A. HEDQUIST	
EO-909-003	E-1	OPERATE IN-CELL HOIST	7/15/96				T.A. GAINEY	
EO-909-009	D-1	REMOVE AND INSTALL TRUCK PORT, G-CELL AND POOL CELL COVER BLOCKS	7/15/96				P.T. SAUERESSIG	
EO-909-011	C-1	OPERATE 25-TON CRANE	7/15/96				T.A. GAINEY	
EO-912-006	E-0	ENTER G CELL	8/01/96				P.T. SAUERESSIG	

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. BP2-96-223

Procedure No.: EO-912-006 Rev: E Chg: 0 Bldg.: 2256 Date Issued: 7-8-96

Title: ENTER G-CELL

Initiator: DR PEARSON Phone: 372-0140 MSIN: Bldg: MO-029 Date

Tech Authority (print): S. J. DAVIS Phone: 372-0473 MSIN: Bldg: MO-029

Organization Name: CAPSULE MANAGEMENT TEAM Org Code: J4E20000 TPCN/WO

TS/OSR Related? [X]No [ ]Yes Ref.: Procedure Approval Designator: [ ]D [ ]E [X]Q [X]R [X]S [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA #

[X] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[X] Rewrite (complete revision) (Rev # increment)

OR:

[ ] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review .

DESIRED VALIDATION METHOD: [X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [X] retype or field change, [ ] Other List Reason:

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # BP/WESF-96-152, ECS - Yes [X] No [ ] # 96-163,

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

Provide provisions for entering G-Cell to perform maintenance on RAMP-CELL-G. Allows for entering G-Cell if RAMP-CELL-G is inoperable. Requires use of a temporary radiation monitoring system with alarm capabilities during all entries. INCORPORATE ALL OUTSTANDING FIELD CHANGES (PCAs & BP2s) EO-0557, EO-0565, EO-0570, EO-0571. INCORPORATE RE-ENGINEERING TITLE CHANGES (REPLACE OLD TITLES AND ORGANIZATIONS WITH FUNCTIONAL DESCRIPTIONS).

APPROVAL/CONCURRENCE SIGNATURES.

• Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name		Signature	MSIN	Date
Tech. Auth.:	S. J. Davis			56-57	7/30/96
TA Mgr.:	N/A	*	See BP-3s		
Ops/Validation:	N/A	*			
QA:	N/A	*•			
HSA:	N/A	*•			
EA:	N/A	*•			
Other:	N/A	*•			
RELEASE AUTHORITY:	J. L. Pennock			56-57	8/1/96

S Date: 7-8-96

Assigned Author: Pearson

Electronic Copy Date: 8-1-96

By:

UNREVIEWED SAFETY QUESTION (USQ) SCREENING AND EVALUATION

1. Identification Number: WESF-96-176	USQ SCREENING	Page 1 of 1

2. Title: Enter G Cell Procedure (EO-912-006)

INSTRUCTIONS: Respond to each question and provide justification for each response. A restatement of the question does not constitute a satisfactory justification or basis. An adequate justification provides sufficient explanation such that an independent reviewer could reach the same conclusion based on the information provided [DOE 5480.21, 10.e.1].

QUESTIONS

1. Does the proposed change or occurrence represent a change to the facility or procedures as described in the Authorization Basis?
   [ ] N/A [X] No [ ] Yes/Maybe

   BASIS: The description of the G Cell is found in the WESF Safety Analysis Report (WHC-SD-WM-SAR-005) section 5.2.2.2.1, 5.3.1.6, 5.3.2.6. Operations performed in G Cell are described in 6.5.2, and 6.8.1.4. The hazards associated with capsule return are identified on table 9-16 in section 9.21.1 "Abnormal Conditions". No conditions are examined in Chapter 11 Operational Safety Requirements. This sections have been reviewed and will not be impacted from the changes being made in the procedure.

2. Does the proposed change or occurrence represent conditions that have not been analyzed in the Authorization Basis?
   [ ] N/A [X] No [ ] Yes/Maybe

   BASIS: This change in procedures does not represent conditions that have not been analyzed in the safety basis. The sections reference in question 1 identify sections that exist and address conditions in G Cell.

3. Does the proposed change represent a test or experiment NOT described in the Authorization Basis that may affect the safe operation of the facility?
   [X] N/A [ ] No [ ] Yes/Maybe

   BASIS: This change does not represent either a change nor experiment identified by the safety Basis.

4. Does the proposed change or occurrence represent a change to the Technical Safety Requirements or a reduction in the margin of safety defined in the Technical Safety Requirements?
   [ ] N/A [X] No [ ] Yes/Maybe

   BASIS: No changes are represented by this change that will require a change in the safety basis as represented by the SAR or OSR.

USQE #1 Scott J. Davis (Print Name)

Signature Date: 7/30/96

USQE #2 Larry Nunn (Print Name)

Signature Date: 7/31/96

If there is a YES/MAYBE response to questions 1, 2, 3, or 4, then a USQ Evaluation must be completed.

The following guidance should be considered when completing this screening. This guidance should not be considered all-inclusive; additional factors may need to be considered depending on the nature of the proposed change.

Does the proposed change:

1) Modify, add, or delete a safety class function of a structure, system or component stated in the authorization basis?
2) Alter the design of a structure, system or component as described in the authorization basis?
3) Modify, add, or delete the description of operation, operating environment, or analyses of any system or component described in the authorization basis?
4) Modify, add, delete or conflict with any of the design bases stated in the authorization basis?
5) Conflict with the principle or general design criteria stated in the authorization basis?
6) Modify, add, or delete any plant design features described in the authorization basis?
7) Modify, add, or delete a flow diagram or facility drawing provided in the authorization basis?
8) Create the potential for new system or component interactions (e.g., seismic, electrical breaker coordination)?

ENVIRONMENTAL COMPLIANCE SCREENING

1. Title: Enter G Cell Procedure	2. Date: July 30, 1996
3. Reference No.: EO-912-006	4. ECS No.: 96-201
5. Estimated Start Date: July 31, 1996	6. Estimated Completion Date:

7. Description of Work: The procedure identifies the steps required for normal and emergency entries to the WESF G Cell.

QUESTION	NO	YES/ MAYBE
8. Is this activity a new (two years or greater since the activity occurred at this location) procedure, process, source, or newly installed equipment (e.g. fuel-burning source) that could result in ANY or potential increase in emissions (with or without emission control devices)?	X	
9. Will activity involve modification, calibration, or installation of an effluent control or monitoring device?	X	
10. Will activity involve a physical or operational change (temporary or permanent) to an existing effluent (e.g. structure, equipment configuration, flow, chemical composition, or temperature, etc.)?	X	
11. Will activity involve any open burning?	X	
12. Will activity involve any excavation, grading, regrading, or other land disturbance?	X	
13. Will activity involve discharge of effluent or other liquid to the B Plant Chemical Sewer (BCE), B Plant Cooling Water (CBC), ground or to an annual or seasonal stream, pond, crib, french drain, ditch, trench, river, or other body of water?	X	
14. Will activity include generation of dangerous, radioactive, or asbestos-containing wastes, and/or treatment, storage, and/or disposal of waste?	X	
15. Does the activity involve the use of a chemical not already approved for onsite use?	X	
16. Will activity involve construction, expansion, renovation or demolition of a building, facility, tank, or other structure (e.g. signs, fences, lights, trailers, not just buildings)?	X	
17. Will activity involve transfer or transport of dangerous or radioactive waste?	X	
18. Is waste generated by an activity not described in the facility permits?	X	
19. Is the activity not covered by a National Environmental Policy Act (NEPA) categorical exclusion?	X	

20. Submitted by: SCOTT J. DAVIS _____ 7/30/96
Signature Date

21. If any answer is "yes/maybe", submit for regulatory compliance review

22. Regulatory Compliance Review: _____ _____
Signature Date

23. Environmental Compliance Concern:
☐ Air ☐ Liquid ☐ Solid Waste ☐ None

24. Required Actions:

25. Verification of completed action items.

a. Submitted by: _____ _____
Signature Date

b. Regulatory Compliance Review: _____ _____
Signature Date

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.:

Title: ENTER G-CELL

Facility: WESF Approval Des.: Q,R,S

Date issued for review: 07/15/96 Date returned:

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D. R. Pearson	Author		I		Safety		A
S. J. Davis	Tech. Authority		A		Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A		Quality		

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	Revision D/O contained a prohibition to opening G-Cell entry door if RAMP-CELL-G indicated 10^{-11} amps which was equivelant to 30 mR/hr. What was the basis for the 30 mR/hr, and does it effect the procedure? Rad Con or Technical Authority please answer.	No Basis for 30 mR/Hr

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 07/19/96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

S J Davis / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

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Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.:

Title: ENTER G-CELL

Facility: WESF Approval Des.: Q,R,S

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S. J. Davis	Tech. Authority		A		Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A		Quality		

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PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
3 3/4/ 3.3	Revision D/O contained a prohibition to opening G-Cell entry door if RAMP-CELL-G indicated 10^{-11} amps which was equivelant to 30 mR/hr. What was the basis for the 30 mR/hr, and does it effect the procedure? Rad Con or Technical Authority please answer.	
3 3/4/ 3.3	Re-arrange steps to eliminate one signature.	Done
7/12	Add Note to any action can be completed anytime prior to step [16]	Added

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 07/19/96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Paul Saueressig / 372-0071
Print Reviewer Name / Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

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Paul Saueressig / 7/30/96
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BP-3 **ROUTING, REVIEW, AND APPROVAL RECORD**
(Continuation Page)

Procedure: EO-912-006
(Number or Title)

Reviewer:

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
9/[27]	Add 111 G-bell	Added
11/[43]	Add 111 step [62]	Added
13	Remove extra signature	Done.

Appendix A
Page 101
WHC-SD-WM-RRR-010 Rev. 0

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.: 8-12-76

Title: ENTER G-CELL

Facility: WESF Approval Des.: Q,R,S

Date issued for review: 07/15/96 Date returned:

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D. R. Pearson	Author		I		Safety		A
S. J. Davis	Tech. Authority		A		Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A		Quality		

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NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	Revision D/0 contained a prohibition to opening G-Cell entry door if RAMP-CELL-G indicated 10^{-11} amps which was equivelant to 30 mR/hr. What was the basis for the 30 mR/hr, and does it effect the procedure? Rad Con or Technical Authority please answer.	

Appendix A
Page 102
WHC-SD-WM-RRR-010 Rev. 0

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JE ~~Wells~~ Wybaensee / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

_____ / 8-1-96
Approval Signature Date

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BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.: 8

Title: ENTER G-CELL

Facility: WESF Approval Des.: Q,R,S

Date issued for review: 07/15/96 Date returned:

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D. R. Pearson	Author		I		Safety		A
S. J. Davis	Tech. Authority		A		Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A		Quality		

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PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	Revision D/0 contained a prohibition to opening G-Cell entry door if RAMP-CELL-G indicated 10^{-11} amps which was equivelant to 30 mR/hr. What was the basis for the 30 mR/hr, and does it effect the procedure? Rad Con or Technical Authority please answer.	
ALL —	Editorial recommendations as marked.	**Appendix A Page 103 WHC-SD-WM-RRR-010 Rev. 0**

Use continuation sheet(s) if more space is required.

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S C Froelich / _____

Print Reviewer Name Phone Number

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Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.:

Title: ENTER G-CELL

Facility: WESF Approval Des.: Q,R,S

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D. R. Pearson	Author		I	R. A. Wilson	Safety	S6-69	A
S. J. Davis	Tech. Authority		A		Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A		Quality		

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[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

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PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	Revision D/O contained a prohibition to opening G-Cell entry door if RAMP-CELL-G indicated 10^{-11} amps which was equivelant to 30 mR/hr. What was the basis for the 30 mR/hr, and does it effect the procedure? Rad Con or Technical Authority please answer.	**Appendix A Page 104 WHC-SD-WM-RRR-010 Rev. 0**

Use continuation sheet(s) if more space is required.

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R. Wilson / _____

Print Reviewer Name Phone Number

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Rebecca Wilson / 7/18/96

Approval Signature Date

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3P-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.: _____

Title: ENTER G-CELL

Facility: WESF Approval Des.: Q,R,S

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D. R. Pearson	Author		I		Safety		A
S. J. Davis	Tech. Authority		A	D. D. Beers	Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A		Quality		

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NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
General	Revision D/O contained a prohibition to opening G-Cell entry door if RAMP-CELL-G indicated 10^{-11} amps which was equivelant to 30 mR/hr. What was the basis for the 30 mR/hr, and does it effect the procedure? Rad Con or Technical Authority please answer. Where is QISA?	The Approval Designator provides equivilant review.
General	Should this procedure really be a Work Package.	No. The actual entry process should be procedurialized to ensure consistency.

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 07/19/96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

D Beers / _____
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D D Beers / 08/01/96
Approval Signature Date

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BP-3 ROUTING, REVIEW, AND APPROVAL RECORD
(Continuation Page)

Procedure: EO-912-006
(Number or Title)

Reviewer:

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
3/3.2	Add expected dose rate <45 R/hr	Done
4/Prestart Cond.	Add: 1. Verify RAMP-CELL-G "in" Operation	Done.
	2. Verify no capsule movement are planned in F-Cell during manned entry to G-Cell	Done
	3. Lock and Tag F-Cell Manipulators	~~Tag only moved to step prior to entry Section 5.1[3]~~ Denied by P.T. [illegible]
	4. Add ACT Hold Point for verification of ~~lock &~~ tag	No Tag instructions and procedure compliance are sufficient
5/4.3	Add: Perform light test on Panel G-15	Added to 5.6[6]
	Add management rep present in operating gallery	No: COG & Team coordinator feel unnecessary.
	Do not enter G-Cell if capsule movements are planned during G-Cell entry	Added
6/[1]	Add "in a storage configuration"	Added
	Add QC Hold point	~~Added independent verification~~ - Denied P.T. [illegible]
6/[2]	Add QC Hold Point	~~Added independent verification~~ Denied PT [illegible]
7/5.1[8]	Added Section for additional ~~Rad~~ Con requirements for Entry ~~[illegible]~~ if RAMP-CELL-G Inoperable.	Added ACT requirement to step ~~[illegible]~~ [18]

PROCINFO X:\P-FORMS\BP-3.frm (06/24/96)

WHC-IP-1182 Sec. 16.1 Att. 2 Equivalent

(Continuation Page)

Procedure: EO-912-006
(Number or Title)

Reviewer:

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
8/Warning	Add warning to stand out of door swing arc.	Done
9/[18]	Add RCT HP and action to update Radiological Postings as required.	Done.
9/[21]	Add RCT HP	Done,
10/[24]	Add Personnel in G-Cell SHALL IMMEDIATELY	Done
12/[9]	Add verify and	Done
12/	Add New section for restoration Verify all personnel out of G-Cell	No Need ~~Done~~ Done in 5.3[9]
	Add Remove Tag from F-Cell Manipulators	~~Done as Delivered part of PT Summary section 5.3~~

PROCINFO X:\P-FORMS\BP-3.frm (06/24/96)

WHC-IP-1182 Sec. 16.1 Att. 2 Equivalent

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.:

Title: ENTER G-CELL

Facility: WESF Approval Des.: Q,R,S

Date issued for review: 07/15/96 Date returned:

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D. R. Pearson	Author		I		Safety		A
S. J. Davis	Tech. Authority		A		Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A		Quality		

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[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
4/3.3 BWP	Revision D/O contained a prohibition to opening G-Cell entry door if RAMP-CELL-G indicated 10^{-11} amps which was equivelant to 30 mR/hr. What was the basis for the 30 mR/hr, and does it effect the procedure? Rad Con or Technical Authority please answer.	
4/3.3	Re-arrange step to require a single supervisor signature after pre-start conditions are met	Done
5/4.3	Change safety observer to G-Cell operator and restrict movement	Done

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 07/19/96

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Bill Cook / _____

Print Reviewer Name Phone Number

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3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

William B Cook 8-1-96

Approval Signature Date

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Procedure: EO-912-006
(Number or Title)
Reviewer: _____

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
6/[4]	Change to RR-CAM-B731	Done
6/[6]	Change to RR-CAM-B731 and ~~Add~~ change "DO NOT" Entry to "Hold until CAM REPAIRED	Done
6/[c]	Add "(OFF) after NOT ILLUMINATED	Done
7/[b]	Add by radio or phone	Done
8/[7] [a]	Add "end of"	Done
9/[2] [b]	Delete description of survey	Done
10 [2.3]	Add location of controllers	Done
11/[1]	Add survey rubber shoes and remove if contaminated. Unnecessary removal can be a safety hazzard	Done
11/[6] [b]	Change listen to watch	Done
13/5.1 [2]	Change to RR-CAM-B731	Done

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.:

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D. R. Pearson	Author		I		Safety		A
S. J. Davis	Tech. Authority		A		Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A		Quality		

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Use continuation sheet(s) if more space is required.

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Vernon Richardson / _____
Print Reviewer Name Phone Number

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Vernon Richardson / 7-19-96
Approval Signature Date

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Procedure: EO-912-006
(Number or Title)
Reviewer:

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	power cpr. A-OK. VLR.	

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: E Chg: 0 Bldg.: ______

Title: ENTER G-CELL

Facility: WESF Approval Des.: Q,R,S

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D. R. Pearson	Author		I		Safety		A
S. J. Davis	Tech. Authority		A		Radcon		A
P. T. Saueressug	TA. Manager		A		WESF Ops		A
	Validator		V		Power Operator		A
S. C. Froelhich	SP Review		A	M.A. HILL	Quality		

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3/3.3[1]	"SIGNITURE" S/B "SIGNATURE"/RECOMMEND USING SPELL CHECK PRIOR TO ISSUING PROCEDURE FOR REVIEW.	DONE
4/3.3.[2][A] & OTHER STEAM JET RELATED STEPS.	WITH OSR CHANGES, DO WE STILL HAVE TO HAVE K-3 STEAM JET? WE ARE ALSO TRYING TO REMOVE STEAM IN THE REASONABLY NEAR FUTURE. IF DELETED, WHAT IS NEED FOR 3.3.[2][6]? & DATA SHEET RECORD?	Yes – ~~[illegible]~~ [illegible] – [illegible] AW

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 07/19/96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

M.A. HILL / 6-5077

Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

[signature] / 8-1-96

Approval Signature Date

Please highlight your name in DISTRIBUTION and return this and any continuation sheets to: [illegible]

PROCINFO X:\P-FORMS\BP-3.frm (06/24/96) WHC-IP-1182 Sec. 16.1 Att. 2 Equivalent

ROUTING, REVIEW, AND APPROVAL RECORD

(Continuation Page)

Procedure: EO-912-006

(Number or Title)

Reviewer:

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
6/5.1[6] WARNING & 4/4.0	THERE IS NO EXPLICIT COMMAND STEP TO EXIT G-CELL IF ALARM ACTUATES W/PEOPLE	Moved Step [22] with instructions to before step [2] where entry is made
7/5.1[8]	... INOPERABLE.... / S/B OPERABLE.	
thru 5.1.[12]	See markup of Page 7 of 13 - / RELOCATE & Renumber steps	Deleted Step 8
7/5.1.[11]	THERE ARE NO INSTRUCTIONS HERE AS TO HOW TO Bypass the interlock. / Add clarification (INSTRUCTIONS).	Done.
9/5.1[19]	... greater than 100 mR/hr .... / S/B ≥ (greater than or equal to).	Changed
6/5.1[5]	add "...and ≥ 2000 cpm...." see [4] and checklist	Done

PROCINFO X:\P-FORMS\BP-3.frm (06/24/96)

WHC-IP-1182 Sec. 16.1 Att. 2 Equivalent

B Plant/WESF Technical Procedure Validation Checklist
(Sheet 1 of 2)

Procedure No: EO-912-006 Rev.: E/0

Title: Enter G-Cell

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 6.2.2 of WHC-IP-1182 Sec. 16.1 (WHC-CM-3-5, Section 12.5, Step 5.4.1).

Check Validation Method: ☐ Walk-through ☒ Reference ☐ Simulation ☑ Table-Top

	Yes	No	N/A	
1.	☑	☐	☐	Is the purpose and objective of the procedure clearly stated?
2.	☑	☐	☐	Is the procedure clear and easy to understand?
3.	☑	☐	☐	Can the procedure be performed in the sequence written?
4.	☑	☐	☐	Is the amount and level of information sufficient to accomplish the task?
5.	☑	☐	☐	Does the procedure accurately reflects the current configuration of the plant process and/or equipment?
6.	☑	☐	☐	Can the user perform the procedure without obtaining additional information from persons or documents not referenced?
7.	☑	☐	☐	Is the procedure organized to allow the user to locate a evolution, such as start up or shut down of individual components or systems?
8.	☑	☐	☐	Are all required personnel listed?
9.	☑	☐	☐	Are all necessary prerequisites, precautions and limitations listed?
10.	☑	☐	☐	Are all listed prerequisites, precautions and limitations necessary?
11.	☑	☐	☐	Are Special Tools, Equipment and Materials listed, and sufficient to perform the procedure?
12.				Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?
	☑	☐	☐	• In the correct order to perform the task?
	☐	☑	☐	• Missing?
	☑	☐	☐	• Detailed enough to allow performance without interpretation and not too detailed?
13.				Can the individual steps be performed correctly?
	☑	☐	☐	• Each step specifically identified the action to be taken (such as open, shut, turn)?
	☑	☐	☐	• Equipment and parts are identified clearly and match the actual equipment labeling in the plant?
	☑	☐	☐	• Can user locate and identify all equipment referred to in the procedure?
	☑	☐	☐	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided?
	☑	☐	☐	• Limitations are expressed quantitatively?
	☑	☐	☐	• If steps reference other procedure sections or steps, is it clear and understandable?

B Plant/WESF Technical Procedure Validation Checklist
(Sheet 2 of 2)

Procedure No: EO-912-006 Rev.: E/0

Title: Enter G-Cell

	Yes	No	N/A	
14.	☑	☐	☐	Are alternative actions adequately described for each decision point?
15.	☑	☐	☑	Does the procedure include adequate QA, Safety, Environmental, or RCT hold points?
16.	☑	☐	☐	Do the units of measure given in the procedure reflect the units of the instruments used in the field?
17.	☑	☐	☐	Does the procedure provide additional information where required with NOTES?
18.	☑	☐	☐	Are CAUTION and WARNING statements provided to advise of possible adverse consequences of the procedure steps where necessary?
19.	☑	☐	☐	Are NOTES, CAUTIONS and WARNINGS just prior to the applicable step and on the same page as the step?
20.				Are graphs, charts, and tables adequate for readability and use?
	☐	☐	☑	• Are they compatible with the procedure?
	☐	☐	☑	• Can values be extracted or interpolated easily?
	☐	☐	☑	• Are units of scale and measurement useable?
	☐	☐	☑	• Are titles descriptive of contents and use?
21.	☑	☐	☐	Do included work sheets or data sheets provide sufficient space to record data or perform necessary calculations?
22.				Is the procedure updated to current guidelines?
	☑	☐	☐	• Technical guidelines (such as OSR, ISB, etc.)
	☑	☐	☐	• Format editorial requirements
23.	☑	☐	☐	Are the instructions for forwarding Data Sheets or Samples generated in this procedure clear and accurate?
24.	☑	☐		Can this procedure be performed safely as written?

Comments:
Any technical comments or "No" responses require a comment on the associated procedure comment sheet (BP-3).

	User - Print Name	Signature	Date
Validated:	JAMES E. WABAUNSEE	E.W. Wabaunsee	8-1-96
Concurred:	Scott Davis	Scott Davis	8-1-96
	Tech. Authority - Print Name	Signature	Date

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-229
Page 1 of 1

Procedure No.: EO-100-012 Rev: C Chg: 1 Bldg.: 2253 Date Issued: 7-10-96
Title: Operate GO-NO-GO Gage and Examine Capsule
Initiator: SC FROEHLICH Phone: 372-0072 MSIN: S6-81 Bldg: MO-400 Date 7-10-96
Tech Authority (print): Phone: MSIN: Bldg:
Organization Name: Org Code: TPCN/WO
TS/OSR Related? [X] No [ ] Yes Ref.: Procedure Approval Designator: [ ] D [ ] E [X] Q [ ] R [X] S [ ] NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE
Please provide the following information, as a minimum, in Description below.
Attach a draft if available:
- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE
per description as a (Check One):
[ ] Temporary Change, Expires: N/A
OR: PCA # N/A
[ ] Field Change (Obtain signatures below) (• same approvals as procedure)
[ ] Editorial Change Only (TA & Release Authority only)
OR:
[ ] Rewrite (complete revision) (Rev # increment)
OR:
[X] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:
Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:
Provide justification in Description section.

[ ] PROCEDURE REVIEW:
Date required for completed review _____.

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top
Validation NOT Required: [X] (retype) or field change, [ ] Other List Reason:

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # BP/WESF-96-152 ECS - Yes [X] No [ ] # 96-163

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):
RETYPE PROCEDURE TO INCORPORATE ALL OUTSTANDING FIELD CHANGES (PCAs) AND TO INCORPORATE RE-ENGINEERING TITLE CHANGES (REPLACE OLD TITLES AND ORGANIZATIONS WITH FUNCTIONAL DESCRIPTIONS). SEE STANDING ORDER BSO-96-030 AND WSO-96-033.
PCAs INCORPORATED: NONE

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	Linnea Brisso	Linnea Brisso	S6-57	7/15/96
TA Mgr.:	N/A	*		
Ops/Validation:	N/A	*		
QA:	N/A	*•		
HSA:	N/A	*•		
EA:	N/A	*•		
Other:	N/A	*•		
RELEASE AUTHORITY:	JL Pearnock	JL Pearnock	S4-70	7-15-96

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Start Date: 7-10-96
Assigned Author: Froehlich

Electronic Copy Date: 7-16-96
By: SFroehlich

Control Copies Date: 7-17-96
By: SFroehlich

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-227

Page 1 of 1

Procedure No.: EO-100-023 Rev: B Chg: 1 Bldg.: Date Issued: 7-9-96

Title: Unload the Beneficial Uses System (BUSS) Cask

Initiator: SC FROEHLICH Phone: 372-0072 MSIN: S6-81 Bldg: MO-400 Date

Tech Authority (print): L Brist for Paul Seidel Phone: MSIN: Bldg:

Organization Name: Capsule Mgmt Team SF-2-Mod Org Code: TPCN/WO

TS/OSR Related? [ ]No [X]Yes Ref.: Procedure Approval Designator: [ ]D [ ]E [X]Q [X]R [X]S [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.

Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA # N/A

[ ] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[X] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review .

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [X] retype or field change, [ ] Other List Reason:

REQUIRED SCREENINGS: USQ - Yes [x] No [ ] # BP/WESF-96-152 ECS - Yes [X] No [ ] # 96-163

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue):

Description (attach additional sheets as needed):

RETYPE PROCEDURE TO INCORPORATE ALL OUTSTANDING FIELD CHANGES (PCAs) AND TO INCORPORATE RE-ENGINEERING TITLE CHANGES (REPLACE OLD TITLES AND ORGANIZATIONS WITH FUNCTIONAL DESCRIPTIONS). SEE STANDING ORDER BSO-96-030 AND WSO-96-033.

PCAs INCORPORATED: EO-562

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	L Brist	L Brist	S6-51	7/10/96
TA Mgr.:	N/A	*		
Ops/Validation:	N/A	*		
QA:	N/A	•*		
HSA:	N/A	•*		
EA:	N/A	•*		
Other:	N/A	•*		
RELEASE AUTHORITY:	JL Peacock	JL Peacock	54-70	7-10-96

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Start Date: 7-9-96
Assigned Author: Froehlich

Electronic Copy Date: 7-11-96
By: BJ Mulloy

Control Copies Date: 7-11-96
By:

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-258

Page 1 of 1

Procedure No.: EO-906-003 Rev: F Chg: 1 Bldg.: 225 B Date Issued: 7-15-96

Title: Transfer & Storage of Capsules

Initiator: SC FROEHLICH Phone: 372-0072 MSIN: S6-81 Bldg: MO-400 Date 7-15-96

Tech Authority (print): L Brist Phone: 372-0163 MSIN: Bldg:

Organization Name: Capsule Mgmt Team Org Code: TPCN/WO

TS/OSR Related? [ ]No [ ]Yes Ref.: Procedure Approval Designator: [ ]D [ ]E [ ]Q [ ]R [ ]S [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA # N/A

[ ] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[X] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review _____.

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [X] Retype or field change, [ ] Other List Reason:

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # BP/WESF-96-152 ECS - Yes [X] No [ ] # 96-163

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

RETYPE PROCEDURE TO INCORPORATE ALL OUTSTANDING FIELD CHANGES (PCAs) AND TO INCORPORATE RE-ENGINEERING TITLE CHANGES (REPLACE OLD TITLES AND ORGANIZATIONS WITH FUNCTIONAL DESCRIPTIONS). SEE STANDING ORDER BSO-96-030 AND WSO-96-033.

PCAs INCORPORATED: NONE

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	LARRY BRIST	LARRY BRIST	S6-51	7/15/96
TA Mgr.:	N/A	*		
Ops/Validation:	N/A	*		
QA:	N/A	•*		
HSA:	N/A	•*		
EA:	N/A	•*		
Other:	N/A	•*		
RELEASE AUTHORITY:	J L Pennock	Pennock	S4-70	7-15-96

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Start Date: 7-15-96 Assigned Author: S Froehlich

Electronic Copy Date: 7-16-96 By: S Froehlich

Control Copies Date: 7-17-96 By: S Froehlich

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-257

Page 1 of 1

Procedure No.: EO-909-001 Rev: D Chg: 1 Bldg.: 2255 Date Issued: 7-15-96

Title: Operate 15-TON Canyon Crane

Initiator: SC FROEHLICH Phone: 372-0072 MSIN: S6-81 Bldg: MO-400 Date 7-15-96

Tech Authority (print): _____ Phone: _____ MSIN: _____ Bldg: _____

Organization Name: _____ Org Code: _____ TPCN/WO _____

TS/OSR Related? [X] No [ ] Yes Ref.: _____ Procedure Approval Designator: [ ] D [ ] E [X] Q [ ] R [X] S [ ] NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA # N/A

[ ] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[X] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review _____.

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [X] (retype) or field change, [ ] Other List Reason: _____

QUIRED SCREENINGS: USQ - Yes [x] No [ ] # BP/WESF-96-152 ECS - Yes [X] No [ ] # 96-163

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

RETYPE PROCEDURE TO INCORPORATE ALL OUTSTANDING FIELD CHANGES (PCAs) AND TO INCORPORATE RE-ENGINEERING TITLE CHANGES (REPLACE OLD TITLES AND ORGANIZATIONS WITH FUNCTIONAL DESCRIPTIONS). SEE STANDING ORDER BSO-96-030 AND WSO-96-033.

PCAs INCORPORATED: NONE

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	HARRY BRIST	HARRY BRIST	S6-51	7/15/96
TA Mgr.:	N/A	*		
Ops/Validation:	N/A	*		
QA:	N/A	*•		
HSA:	N/A	*•		
EA:	N/A	*•		
Other:	N/A	*•		
RELEASE AUTHORITY:	JL Pennock	Pennock	S4-70	7-15-96

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Start Date: 7-15-96 Assigned Author: Froehlich

Electronic Copy Date: 7-16-96 By: [signature]

Control Copies Date: 7-17-96 By: [signature]

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-259

Page 1 of 1

Procedure No.: EO-909-003 Rev: E Chg: 1 Bldg.: 2256 Date Issued: 7-15-96

Title: Operate In-Cell Hoist

Initiator: SC FROEHLICH Phone: 372-0072 MSIN: S6-81 Bldg: MO-400 Date

Tech Authority (print): Phone: MSIN: Bldg:

Organization Name: Org Code: TPCN/WO

TS/OSR Related? [X] No [ ] Yes Ref.: Procedure Approval Designator: [ ] D [ ] E [ ] Q [ ] R [X] S [ ] NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA # N/A

[ ] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[X] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review .

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [X] retype or field change, [ ] Other List Reason:

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # BP/WESF-96-152 ECS - Yes [X] No [ ] # 96-163

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

RETYPE PROCEDURE TO INCORPORATE ALL OUTSTANDING FIELD CHANGES (PCAs) AND TO INCORPORATE RE-ENGINEERING TITLE CHANGES (REPLACE OLD TITLES AND ORGANIZATIONS WITH FUNCTIONAL DESCRIPTIONS). SEE STANDING ORDER BSO-96-030 AND WSO-96-033.

PCAs INCORPORATED: NONE

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	Emery Bliss	Emery Bliss	S6-57	7/15/96
TA Mgr.:	N/A	*		
Ops/Validation:	N/A	*		
QA:	N/A	•*		
HSA:	N/A	•*		
EA:	N/A	•*		
Other:	N/A	•*		
RELEASE AUTHORITY:	JL Pennock	JL Pennock	54-70	7-16-96

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Start Date: 7-15-96
Assigned Author: Froehlich

Electronic Copy Date: 7-16-96
By:

Control Copies Date: 7-17-96
By:

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-260

Page 1 of 1

Procedure No.: EO-909-009 Rev: D Chg: 1 Bldg.: 2256 Date Issued: 7-15-96

Title: Remove & Install Truckport, G-Cell, and Pool Cell Coverblocks

Initiator: SC FROEHLICH Phone: 372-0072 MSIN: S6-81 Bldg: MO-400 Date 7-15-96

Tech Authority (print): _____ Phone: _____ MSIN: _____ Bldg: _____

Organization Name: _____ Org Code: _____ TPCN/WO _____

TS/OSR Related? [X] No [ ] Yes Ref.: _____ Procedure Approval Designator: [ ] D [ ] E [X] Q [ ] R [X] S [ ] NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.

Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA # N/A

[ ] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[X] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review _____.

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [X] retype or field change, [ ] Other List Reason: _____

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # BP/WESF-96-152 ECS - Yes [X] No [ ] # 96-163

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

RETYPE PROCEDURE TO INCORPORATE ALL OUTSTANDING FIELD CHANGES (PCAs) AND TO INCORPORATE RE-ENGINEERING TITLE CHANGES (REPLACE OLD TITLES AND ORGANIZATIONS WITH FUNCTIONAL DESCRIPTIONS). SEE STANDING ORDER BSO-96-030 AND WSO-96-033.

PCAs INCORPORATED: NONE

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	LARRY BEIST	LARRY BEIST	S6-51	7/15/96
TA Mgr.:	N/A	*		
Ops/Validation:	N/A	*		
QA:	N/A	**		
HSA:	N/A	**		
EA:	N/A	**		
Other:	N/A	**		
RELEASE AUTHORITY:	J.L. Pennock	Pennock	S4-70	7-15-96

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WHC-SD-WM-RRR-010 Rev. 0

Start Date: 7-15-96 Assigned Author: Froehlich

Electronic Copy Date: 7-16-96 By: S Froehlich

Control Copies Date: 7-17-96 By: S Froehlich

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-256

Page 1 of 1

Procedure No.: FO-909-011 Rev: C Chg: 1 Bldg.: 2251B Date Issued: 7-17-96

Title: Operate 25-TON CRANE

Initiator: SC FROEHLICH Phone: 372-0072 MSIN: S6-81 Bldg: MO-400 Date

Tech Authority (print): Phone: MSIN: Bldg:

Organization Name: Org Code: TPCN/WO

TS/OSR Related? [X] No [ ] Yes Ref.: Procedure Approval Designator: [ ] D [ ] E [ ] Q [ ] R [X] S [ ] NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.

Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA # N/A

[ ] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[X] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review .

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [X] retype or field change, [ ] Other List Reason:

REQUIRED SCREENINGS: USQ - Yes [x] No [ ] # BP/WESF-96-152 ECS - Yes [X] No [ ] # 96-163

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

RETYPE PROCEDURE TO INCORPORATE ALL OUTSTANDING FIELD CHANGES (PCAs) AND TO INCORPORATE RE-ENGINEERING TITLE CHANGES (REPLACE OLD TITLES AND ORGANIZATIONS WITH FUNCTIONAL DESCRIPTIONS). SEE STANDING ORDER BSO-96-030 AND WSO-96-033.

PCAs INCORPORATED: NONE

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	LARRY BATT	LARRY BATT	S6-51	7/15/96
TA Mgr.:	N/A	*		
Ops/Validation:	N/A	*		
QA:	N/A	*•		
HSA:	N/A	*•		
EA:	N/A	*•		
Other:	N/A	*•		
RELEASE AUTHORITY:	J.L. Pennock	J.L. Pennock	S4-70	7-15-96

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Start Date: 7-15-96
Assigned Author: FROEHLICH

Electronic Copy Date: 7-16-96
By: D. Froehlich

Control Copies Date: 7-17-96
By: D. Froehlich

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

✓ Preliminary

_____ Final

Checklist Item:

2.2.2 - July 10, 1996

Acceptance Criteria:

Evidence that no inadequacies (outstanding BP-2's) have been identified in procedures for WESF BUSS cask operations.

Discussion:

The attached report generated from Plant Operating Documents Data System (PODDS) shows the current revision status and active PCAs for the procedures identified by the Capsule Management Team as required for ARECO Cesium Capsule Return. In addition to the revision and Procedure Change Authorization (PCA) status, approval and validation records for each procedure are attached. Each of the procedures listed has been revised as part of the B Plant/WESF procedure upgrade program within the last year.

There is one technical BP-2 (96-223) identified as required on EO-912-006, Enter G-Cell. This BP-2 is currently under development, and will change the procedure to provide instruction for G-Cell entry to perform maintenance on the installed radiation monitoring instrument.

No other technical inadequacies have been identified, i.e., there are no BP-2s in progress for the listed procedures.

Supporting Documentation:

PODDS report showing procedure revision status as of 7/09/96 (attached)

Approval/validation documentation for each required procedure (attached)

Outstanding Items/Limitations:

BP-2 96-223 (described above) is in the development/approval process and will be incorporated into EO-912-006 prior to 7-31-96.

All the listed procedures are currently being editorially updated to reflect B Plant/WESF reengineering organization and responsibility changes. This effort will be completed by 7-31-96.

Completion: S. C. Froehlich Date: 7-9-96

Concurrence: P. T. Saueressig Date: 7/12/96

QUESTIONS/COMMENTS: 372-0072

PLANT OPERATING DOCUMENTS DATA SYSTEM (PODDS) -- STATUS OF PROCEDURES REQUIRED FOR ARECO RECEIPT (7-9-96)

- ACTIVE PROCEDURES & PROCEDURE CHANGE AUTHORIZATIONS -

7/09/96

PROCEDURE NUMBER	REV NO.	DESCRIPTION/TITLE	RELEASE DATE	PCA NUMBER	TYPE	PCA ISSUED	POINT OF CONTACT	BOOK NUMBER(S)
EO-100-012	C-0	OPERATE GO-NO-GO GAGE AND EXAMINE CAPSULES	1/31/96				P.T. SAUERESSIG	
EO-100-023	B-0	UNLOAD THE BENEFICIAL USES SHIPPING SYSTEM (BUSS) CASK	12/08/95	EO-00562	PERM	3/19/96	P.T. SAUERESSIG	
EO-906-003	F-0	TRANSFER AND STORAGE OF CAPSULES	5/13/96				R.J. TOWNLEY	
EO-909-001	D-0	OPERATE 15-TON CANYON CRANE	11/20/95				K.A. HEDQUIST	
EO-909-003	E-0	OPERATE IN-CELL HOIST	4/23/96				T.A. GAINEY	
EO-909-009	D-0	REMOVE AND INSTALL TRUCK PORT, G-CELL AND POOL CELL COVER BLOCKS	3/28/96				P.K. RYAN	
EO-909-011	C-0	OPERATE 25-TON CRANE	4/23/96				T.A. GAINEY	
EO-912-006	D-0	ENTER G CELL	1/24/96	EO-00557	PERM	3/19/96	P.T. SAUERESSIG	
EO-912-006	D-0	ENTER G CELL	1/24/96	EO-00565	PERM	3/19/96	P.T. SAUERESSIG	
EO-912-006	D-0	ENTER G CELL	1/24/96	EO-00570	PERM	4/03/96	P.T. SAUERESSIG	
EO-912-006	D-0	ENTER G CELL	1/24/96	EO-00571	PERM	4/04/96	P.T. SAUERESSIG	

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-066 3/18/96 pvs

Page 1 of ~~15~~ 18

Procedure No.: EO-100-023 Rev: B Chg: 0 Bldg.: Date Issued: 03-01-96

Title: Unload BUSS Cask

Initiator: KA Hedquist Phone: 372-1436 MSIN: S6-60 Bldg: Date 03-01-96

Tech Authority (print): P. Saueressig Phone: 372-0071 MSIN: Bldg:

Organization Name: WESF Engineering Org Code: 16E20 TPCN/WO

TS/OSR Related? [ ]No [ ]Yes Ref.: Procedure Approval Designator: [ ]D [ ]E [X]S [X]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: n/a

OR: PCA # ED-00562

[X] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[ ] Retype (Incorp. approved changes only) (Mod # increment)

ORIGINAL REVISED FD

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review n/a.

DESIRED VALIDATION METHOD: [X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

pvs 3/18/96 pvs

Validation NOT Required: [ ] retype or field change, [X] Other List Reason: ~~pvs 3/18/96~~ No instructural steps which result in changing the operation of procedure occur.

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # WESF-95-161 ECS - Yes [X] No [ ] # N/A

RECALL INFORMATION: Performance Frequency: n/a Start (after procedure issue): n/a

Description (attach additional sheets as needed):

Upgrade procedure to delete reference to OSR's that were deleted per ECN 169399.
Additional changes to be made to correct any technical deficiencies.

APPROVAL/CONCURRENCE SIGNATURES.

• Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature		MSIN	Date
Tech. Auth.:	P. Saueressig	Paul T Saueressig	pvs 3/18/96	36-65	03/05/96
TA Mgr.:	M.M. Pereira		MMP 3/18/96	S6-65	03/04/96
Validation:	N/A	*			
QA:	W.F. Witherell	** W Witherell	WW 3/18/96	54-69	3/8/96
HSA:	W. P. Nelson	**	3/19/96	36-69	3/5/96
EA:	N/A	**			
Other:		**			
RELEASE AUTHORITY:	P.J. Pennock			54-70	3-19-96

Start Date: 03-01-96

Assigned Author: P Saueressig

Electronic Copy Date By:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-100-023 Rev: B Chg: 0 Bldg.: 225B
Title: Unload the Beneficial Uses Shipping System (BUSS) Cask
Facility: 225B/WESF Approval Des.: S,Q
Date issued for review: 11/07/95 Date returned: ASAP

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P.T. Saueressig	Author	S6-65	I	W. P. Nelson	SHA	S6-21	
P. T. Saueressig	Tech. Authority	S4-70	A				
M. M. Pereira	TA. Manager	S4-70	A				
	Validator		V				
M. A. Hill	QA	S4-69	A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [x] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	NONE		

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Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: ASAP

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Glen Garman / 372-0054
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

G. L. Garman / 11-8-95
Approval Signature Date

Please highlight your name in DISTRIBUTION and return this and any continuation sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-100-023 Rev: 8 Chg: 0 Bldg.: 225B
Title: Unload the Beneficial Uses Shipping System (BUSS) Cask
Facility: 225B/WESF Approval Des.: S,Q
Date issued for review: 11/07/95 Date returned: ASAP

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P.T. Saueressig	Author	S6-65	I	W. P. Nelson	SHA	S6-21	
P. T. Saueressig	Tech. Authority	S4-70	A				
M. M. Pereira	TA. Manager	S4-70	A				
	Validator		V				
M. A. Hill	QA	S4-69	A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [x] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	None		

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Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: N/A

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Paul T Saueressig / 372-0071
Print Reviewer Name / Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Paul T Saueressig / 11/7/95
Approval Signature / Date

Please highlight your name in DISTRIBUTION and return this and any continuation sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-100-023 Rev: B Chg: 0 Bldg.: 225B
Title: Unload the Beneficial Uses Shipping System (BUSS) Cask
Facility: 225B/WESF Approval Des.: S,Q
Date issued for review: 11/07/95 Date returned: ASAP

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P.T. Saueressig	Author	S6-65	I	W. P. Nelson	SHA	S6-21	
P. T. Saueressig	Tech. Authority	S4-70	A				
M. M. Pereira	TA. Manager	S4-70	A				
	Validator		V				
M. A. Hill	QA	S4-69	A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [x] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	No comments.		

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Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: ASAP

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

W. P. Nelson (Print Reviewer Name) 1373-5212 (Phone Number)

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

W P Nelson (Approval Signature) 11/9/95 (Date)

Please highlight your name in DISTRIBUTION and return this and any continuation sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-100-023 Rev: B Chg: 0 Bldg.: 225B
Title: Unload the Beneficial Uses Shipping System (BUSS) Cask
Facility: 225B/WESF Approval Des.: S,Q
Date issued for review: 11/07/95 Date returned: ASAP

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P.T. Saueressig	Author	S6-65	I	W. P. Nelson	SHA	S6-21	
P. T. Saueressig	Tech. Authority	S4-70	A				
M. M. Pereira	TA. Manager	S4-70	A				
	Validator		V				
M. A. Hill	QA	S4-69	A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [x] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	None.		

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Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: ASAP

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Maria M. Pereira / 372-0036
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Approval Signature Date 11/7/95

Please highlight your name in DISTRIBUTION and return this and any continuation sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-100-023 Rev: B Chg: 0 Bldg.: 225B
Title: Unload the Beneficial Uses Shipping System (BUSS) Cask
Facility: 225B/WESF Approval Des.: S,Q
Date issued for review: 11/07/95 Date returned: ASAP

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P.T. Saueressig	Author	S6-65	I	W. P. Nelson	SHA	S6-21	
P. T. Saueressig	Tech. Authority	S4-70	A				
M. M. Pereira	TA. Manager	S4-70	A				
	Validator		V				
M. A. Hill	QA	S4-69	A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [x] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	NO TECH. COMMENTS.		

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Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: ASAP

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Mike A. Hill (Print Reviewer Name) 376-5077 (Phone Number)

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Approval Signature 12.7.95 Date

Please highlight your name in DISTRIBUTION and return this and any continuation sheets to:

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 95-180

Page 1 of 1

Procedure No.: EO-100-023 Rev: B Chg: 0 Bldg.: Date Issued: 12-08-95

e: Unload the Bennificial Uses Shipping System (BUSS) Cask

Initiator: PT Saueressig Phone: 372-0071 MSIN: Bldg: Date 12-08-95

Tech Authority (print): PT Saueressig Phone: 372-0071 MSIN: Bldg:

Organization Name: Capsule Management Team Org Code: 16800 TPCN/WO

TS/OSR Related? [ ]No [ ]Yes Ref.: Procedure Approval Designator: [ ]D [ ]E [X]S [X]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.

Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE per description AS A (Check One):

[ ] Temporary Change, Expires:

OR:

[ ] Field Change - PCA #

(Obtain approval signatures below) (* same approvals as procedure)

OR:

[X] Rewrite (complete revision)

OR:

[ ] Retype (Incorp. approved changes only) OR Editorial Change

USQ # : WESF-95-331

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

DESIRED VALIDATION METHOD (not required for retype or field change)

[X] Walk-through [ ] Reference [X] Simulation [ ] Table-top

RECALL INFORMATION: Performance Frequency: n/a Start (after procedure issue): n/a

Description (attach additional sheets as needed):

Incorporate outstanding Procedure Change Authorizations EO-0498, EO-0501, EO-0504, EO-0505, EO-0508 and EO-0537.

Formatted tothe new guidelines per WHC-IP-1182 Section 16.1 & 16.2.

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	PT Saueressig	Paul T Saueressig	54-70	12/08/95
TA Mgr.:	MM Pereira	*		
Validation:		*		
QA:	MA Hill	*•		
HSA:	WP Nelson	*•		
EA:		*•		
Other:		*•		
RELEASE AUTHORITY:	JL Pennock	JLPennock	54-70	12-18-95

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Date Received: 10/01/95 Assigned Author: PT Saueressig

Electronic Copy Date: 12-19-95 By:

Control Copies Date: 12/20/95 By: J. Koerner

PROCINFO X:\FORMS\BP-2.frm {11/20/95}

Validation Checklist
Sheet 1 of 2

Procedure No: EO-100-023 Rev.: B-0

Title: Unload Beneficial Uses Shipping System (BUSS) Cask

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 5.4.1 of WHC-CM-3-5, Section 12.5. Technical comments, if any, should be recorded in the facility specific comment/review record or on the back of this checklist.

1.	Can the procedure be performed in the sequence written?	☑ Yes	☐ No	☐ N/A
2.	Can the individual steps be performed?	☑ Yes	☐ No	☐ N/A
	• Each step specifically identified the action to be taken (such as open, shut, turn)	☑ Yes	☐ No	☐ N/A
	• Limitations are expressed quantitatively	☑ Yes	☐ No	☐ N/A
	• Equipment and parts are identified clearly and reflect exact equipment nomenclature	☑ Yes	☐ No	☐ N/A
	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided	☑ Yes	☐ No	☐ N/A
	• The procedure accurately reflects the current configuration of the process or equipment	☑ Yes	☐ No	☐ N/A
	• The amount and level of information is adequate	☑ Yes	☐ No	☐ N/A
3.	Can the user locate and identify all equipment referred to in the procedure?	☑ Yes	☐ No	☐ N/A
4.	Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)?	☑ Yes	☐ No	☐ N/A
	• Plant, system, or equipment lineups?	☑ Yes	☐ No	☐ N/A
	• Precautions to be observed?	☑ Yes	☐ No	☐ N/A
	• Plant, system, or equipment limitations?	☑ Yes	☐ No	☐ N/A
	• By part number or other unique nomenclature?	☑ Yes	☐ No	☐ N/A
5.	Can the user perform the procedure without obtaining additional information from persons or documents?	☐ Yes	☐ No	☑ N/A
	• If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently?	☐ Yes	☐ No	☑ N/A
6.	Does the procedure include adequate QA, Safety, Environmental, or HPT hold points?	☑ Yes	☐ No	☐ N/A

Validation Checklist
Sheet 2 of 2

Procedure No: EO-100-023 Rev.: B-0

Title: Unload Buss Cask

7.	Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?	☑ Yes	☐ No	☐ N/A
	• In the correct order to perform the task?	☑ Yes	☐ No	☐ N/A
	• Missing?	☐ Yes	☑ No	☐ N/A
	• Detailed enough to allow performance without interpretation?	☑ Yes	☐ No	☐ N/A
	• Too detailed?	☐ Yes	☑ No	☐ N/A
8.	Are notes, cautions, or warnings placed directly ahead of the steps to which they apply?	☑ Yes	☐ No	☐ N/A
9.	Does procedure include signoff spaces for independent verifications?	☑ Yes	☐ No	☐ N/A
10.	Are graphs, charts, and tables adequate for readability and use?	☐ Yes	☐ No	☑ N/A
	• Are they compatible with the procedure?	☐ Yes	☐ No	☑ N/A
	• Can values be extracted or interpolated easily?	☐ Yes	☐ No	☑ N/A
	• Are units of scale and measurement useable?	☐ Yes	☐ No	☑ N/A
	• Are titles descriptive of contents and use?	☐ Yes	☐ No	☑ N/A
11.	Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations?	☑ Yes	☐ No	☐ N/A
12.	If any follow-up action, test, or procedure must be performed, is that action clearly identified?	☐ Yes	☐ No	☑ N/A
	• Are correct personnel specified?	☐ Yes	☐ No	☑ N/A
	• Are reporting chains specified correctly?	☐ Yes	☐ No	☑ N/A
	• Are actions or referenced procedures specified correctly?	☐ Yes	☐ No	☑ N/A
13.	Is the procedure updated to current guidelines?	☑ Yes	☐ No	☐ N/A
	• Technical guidelines (such as Tech Specs)	☑ Yes	☐ No	☐ N/A
	• Format editorial requirements	☑ Yes	☐ No	☐ N/A

Validated By: GLENN L. GARMAN (User - Print Name) Glenn L Garman (Signature) 11-7-95 (Date)

Concurred By: PAUL T SAUERESSIG (Technical Authority - Print Name) Paul T Saueressig (Signature) 11/7/95 (Date)

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-046

Page 1 of 1

Procedure No.: EO-906-003 Rev: F Chg: 0 Bldg.: _____ Date Issued: 02-14-96

Title: Transfer and Store Capsules

Initiator: KA Hedquist Phone: 372-1436 MSIN: _____ Bldg: _____ Date 02-14-96

Tech Authority (print): L Brist Phone: 372-0173 MSIN: _____ Bldg: _____

Organization Name: WESF Engineering Org Code: 16E20 TPCN/WO _____

TS/OSR Related? [ ]No [ ]Yes Ref.: _____ Procedure Approval Designator: [ ]D [ ]E [X]S [X]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description AS a (Check One):

[ ] Temporary Change, Expires: _____

OR:

[ ] Field Change - PCA # _____
(Obtain signatures below)
(* same approvals as procedure)

OR:

[X] Rewrite (complete revision)

OR:

[ ] Retype (Incorp. approved changes only)
OR Editorial Change

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review n/a.

DESIRED VALIDATION METHOD: [X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [ ] retype or field change, [ ] Other List Reason: n/a

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] USQ # WESF-96-064 ECS - Yes [X] No [ ]

CALL INFORMATION: Performance Frequency: n/a Start (after procedure issue): n/a

Description (attach additional sheets as needed):

Procedure revision require to update to current standard in WHC-CM-3.5 Section 12.5. Require to correct omissions and to improve conduct of operations.

~~verification.~~ KA 2-14-96

ECS # 96-049

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	L Brist		56-70	2-14-96
TA Mgr.:	n/a	* see BP-3's		
Validation:	n/a	*		
QA:	n/a	**		
HSA:	n/a	**		
EA:	n/a	**		
Other:	n/a	**		
RELEASE AUTHORITY:	JL Pennock		54-70	5-13-96

Appendix A
Page 134
WHC-SD-WM-RRR-010 Rev. 0

Start Date: 2-21-96	Electronic Copy Date: 5-13-96	Control Copies Date: _____
Assigned Author: KA HEDQUIST	By:	By:

P-3 ROUTING, REVIEW, AND APPROVAL RECORD Page 1 of 23

Procedure Number: EO-060-005 Rev: D Chg: 0 Bldg.: 225B

Title: Transfer and Storage of Capsules

Facility: WESF Approval Des.: S Q R

Date issued for review: 2/22/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	WF WITHERELL	QA	S4-69	A
L Brist	Tech. Authority		A				

If you are **VALIDATING**, use method checked below:

[ ] Walk-through [X] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is available for use during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	See next page.		Resolved.

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

WF Witherell / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

W Witherell, 5/13/96
Approval Signature Date

Please highlight your name in DISTRIBUTION and sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 5

Procedure Number: EO-906-003 Rev: F Chg: 0 Bldg.: 225B
Title: Transfer and Storage of Capsules
Facility: WESF Approval Des.: S Q R
Date issued for review: 2/22/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	KA Hedquist	SP Review		A
LD Brist	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
WESF Operations	Validator		V				
WESF Operations							

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	See continuation pages for comments.	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

L. D. Brist / 372-0173
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Approval Signature Date 4/30/96

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-906-003 Rev: F Chg: 0 Bldg.: 225B

Title: Transfer and Storage of Capsules

Facility: WESF Approval Des.: S Q (R)

Date issued for review: 2-22-96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	KA Hedquist	SP Review		A
L Brist	Tech. Authority		A		Safety		
KA Jenning-Mills	TA. Manager		A				
WESF Operations	Validator		V				
WESF Operations			A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
BP-3	All safety Approval Des: "R"?	Facility req.
Pg 4 4.1	what about OSR 11.4.5 vs OSD Limit in 1st bullet, / but OSD #3	
P5 4.2	3rd bullet "where does 6" value come from. 5th bullet add (Pool Cell 12) after "transfer basin	see basis letter. HC. OSD 9-257-0006

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 28 Feb 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

W. P. Wilson 3-5212

Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

M.K. Ullah [signature] 4/30/96

Approval Signature Date

Please highlight your name in DISTRIBUTION and return this ... tion sheets to:

PROCINFO X:\FORMS\BP-3.frm (12/22/95)

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of ____

Procedure Number: EO-906-003 Rev: F Chg: 0 Bldg.: 225B
Title: Transfer and Storage of Capsules
Facility: WESF Approval Des.: S Q R
Date issued for review: 2-22-96 Date returned: ____

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	KA Hedquist	SP Review		A
L Brist	Tech. Authority		A				
KA Jenning-Mills	TA. Manager		A				
WESF Operations	Validator		V				
WESF Operations			A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
5.2[9]	NO TRITIUM TOTTER	INC.
5.3[8]	NOT Dummy! CAPSULE PUSHING TOOL	INC

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 28 Feb 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

GLENN GARMAN / 372-0054
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Glenn T Garman 1-5-96
Approval Signature Date

Please highlight your name in DISTRIBUTION and return this and any continuation sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 2

Procedure Number: EO-906-003 Rev: F Chg: 0 Bldg.: 225B
Title: Transfer and Storage of Capsules
Facility: WESF Approval Des.: S Q R
Date issued for review: 2-22-96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	KA Hedquist	SP Review		A
L Brist	Tech. Authority		A	B Aukland	RadCon		
KA Jenning-Mills	TA. Manager		A				
WESF Operations	Validator		V				
WESF Operations			A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
3/3.1	RCT's	
6/5.1	3) ~~Perform smear test using manipulator to obtain smear media thru G-Cell pass-thru. Ensure CP reading is being taken whenever pass-thru door is being opened.~~	
(2)	3) Use pass-thru door to ~~put~~ move smear media into G-Cell. ~~Ensure RCT is taking CP reading whenever pass-thru door is being opened.~~	
(1)	3) Ensure RCT is taking CP reading whenever pass-thru door is being opened.	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 28 Feb 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Print Reviewer Name / Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Britt Brist, 5-1-96
Approval Signature Date

Please highlight your name in DISTRIBUTION a n sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-906-003 Rev: F Chg: 0 Bldg.: 225B
Title: Transfer and Storage of Capsules
Facility: WESF Approval Des.: S Q R
Date issued for review: 2-22-96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	KA Hedquist	SP Review		A
L Brist	Tech. Authority		A				
KA Jenning-Mills	TA. Manager		A				
WESF Operations	Validator		V				
WESF Operations			A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	No comment - need to look at Validation Copy.	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 28 Feb 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Wayne R. Shannon (Print Reviewer Name) 372-0273 (Phone Number)

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Wayne R Shannon (Approval Signature) 5/1/96 (Date)

Please highlight your name in DISTRIBUTION on continuation sheets to:

Validation Checklist
Sheet 1 of 2

Procedure No: EO-906-003 Rev.: F-0

Title: Transfer and Storage of Capsules

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 5.4.1 of WHC-CM-3-5, Section 12.5. Technical comments, if any, should be recorded in the facility specific comment/review record or on the back of this checklist.

1.	Can the procedure be performed in the sequence written?	☒ Yes	☐ No	☐ N/A
2.	Can the individual steps be performed?	☒ Yes	☐ No	☐ N/A
	• Each step specifically identified the action to be taken (such as open, shut, turn)	☒ Yes	☐ No	☐ N/A
	• Limitations are expressed quantitatively	☐ Yes	☐ No	☒ N/A
	• Equipment and parts are identified clearly and reflect exact equipment nomenclature	☒ Yes	☐ No	☐ N/A
	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided	☐ Yes	☐ No	☒ N/A
	• The procedure accurately reflects the current configuration of the process or equipment	☒ Yes	☐ No	☐ N/A
	• The amount and level of information is adequate	☒ Yes	☐ No	☐ N/A
3.	Can the user locate and identify all equipment referred to in the procedure?	☒ Yes	☐ No	☐ N/A
4.	Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment lineups?	☒ Yes	☐ No	☐ N/A
	• Precautions to be observed?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment limitations?	☒ Yes	☐ No	☐ N/A
	• By part number or other unique nomenclature?	☐ Yes	☐ No	☒ N/A
5.	Can the user perform the procedure without obtaining additional information from persons or documents?	☒ Yes	☐ No	☐ N/A
	• If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently?	☐ Yes	☐ No	☒ N/A
6.	Does the procedure include adequate QA, Safety, Environmental, or HPT hold points?	☒ Yes	☐ No	☐ N/A

Procedure No: EO-906-003 Rev.: F-0

Title: Transfer and Storage of Capsules

7.	Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?	☒ Yes	☐ No	☐ N/A
	• In the correct order to perform the task?	☒ Yes	☐ No	☐ N/A
	• Missing?	☐ Yes	☒ No	☐ N/A
	• Detailed enough to allow performance without interpretation?	☒ Yes	☐ No	☐ N/A
	• Too detailed?	☐ Yes	☒ No	☐ N/A
8.	Are notes, cautions, or warnings placed directly ahead of the steps to which they apply?	☒ Yes	☐ No	☐ N/A
9.	Does procedure include signoff spaces for independent verifications?	☐ Yes	☐ No	☒ N/A
10.	Are graphs, charts, and tables adequate for readability and use?	☒ Yes	☐ No	☐ N/A
	• Are they compatible with the procedure?	☒ Yes	☐ No	☐ N/A
	• Can values be extracted or interpolated easily?	☐ Yes	☐ No	☒ N/A
	• Are units of scale and measurement useable?	☐ Yes	☐ No	☒ N/A
	• Are titles descriptive of contents and use?	☒ Yes	☒ No	☐ N/A
11.	Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations?	☒ Yes	☐ No	☐ N/A
12.	If any follow-up action, test, or procedure must be performed, is that action clearly identified?	☒ Yes	☐ No	☐ N/A
	• Are correct personnel specified?	☒ Yes	☐ No	☐ N/A
	• Are reporting chains specified correctly?	☒ Yes	☐ No	☐ N/A
	• Are actions or referenced procedures specified correctly?	☒ Yes	☐ No	☐ N/A
13.	Is the procedure updated to current guidelines?	☒ Yes	☐ No	☐ N/A
	• Technical guidelines (such as Tech Specs)	☒ Yes	☐ No	☐ N/A
	• Format editorial requirements	☒ Yes	☐ No	☐ N/A

Validated By: Gary Johnson (User - Print Name) Signature Date 5-10-96

Concurred By: Larry Brust (Technical Authority - Print Name) Signature Date 5/10/96

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 95-124

Page 1 of 1

Procedure No.: EO-909-001 Rev: D Chg: 0 Bldg.: Date Issued: 11-10-95

Title: Operate 15-Ton Canyon Crane

Initiator: KA Hedquist Phone: 372-1436 MSIN: S6-60 Bldg: Date 11-10-95

Tech Authority (print): T. Gainey Phone: 373-0964 MSIN: Bldg:

Organization Name: WESF Engineering Org Code: TPCN/WO

TS/OSR Related? [X]No [ ]Yes Ref.: n/a Procedure Approval Designator: [ ]D [ ]E [X]S [X]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE per description AS A (Check One):

[ ] Temporary Change, Expires:

OR:

[ ] Field Change - PCA #

(Obtain approval signatures below)
(• same approvals as procedure)

OR:

[X] Rewrite (complete revision)

OR:

[ ] Retype (Incorp. approved changes only) OR Editorial Change

USQ # : WESF-95-341

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

DESIRED VALIDATION METHOD (not required for retype or field change)

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

RECALL INFORMATION: Performance Frequency: n/a Start (after procedure issue): n/a

Description (attach additional sheets as needed):

Revise to incorporate crane operators comments and complete WHC-CM-3-5 Section 12.5 upgrade for format and DOE requirements.

APPROVAL/CONCURRENCE SIGNATURES.

• Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	T. Gainey	Tom Gainey	S6-81	11/10/95
TA Mgr.:		* See BP-3		
Validation:		* See BP-3		
QA:		** See BP-3		
HSA:		** See BP-3		
EA:		** See BP-3		
Other:		** See BP-3		
RELEASE AUTHORITY:	J. L. Pennock	J. L. Pennock	S4-70	11-20-95

Appendix A
Page 143
WHC-SD-WM-RRR-010 Rev. 0

Date Received: 11-01-95 Assigned author: KA Hedquist Phone: 372-1436

Final check by: Date: 11-20-95 TPCN:

PROCINFO X:\FORMS\BP-2.frm {08/28/95}

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-909-001 Rev: D Chg: 0 Bldg.: ______
Title: Operate 15-Ton Canyon Crane
Facility: WESF Approval Des.: S, Q
Date issued for review: 11-10-95 Date returned: ______

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Quality		A
T. Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
	Safety		A				

If you are **VALIDATING,** use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/STEP	COMMENT	RECOMMENDATION	RESOLUTION
4/4.2	Should the required qualifications be listed, to assure the operator is aware of what qualifications are required to operate the crane	state required qualifications	Changed statement to "~~certified~~ qualified" which is defined per TMX.
4/4.2 Warning	change last sentence to read	these are safety devices and should not be used as part of normal operations	corrected.

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 11-15-95

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

______________________ / ______________
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

[signature] for KA Jennings-Mills / 11-20-95
Approval Signature Date

Please highlight your name in DISTRIBUTION and ... on sheets to:

PROCINFO X:\FORMS\BP-3.frm (08/28/95)

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of ___

Procedure Number: EO-909-001 Rev: D Chg: 0 Bldg.: _____
Title: Operate 15-Ton Canyon Crane
Facility: WESF Approval Des.: S, Q
Date issued for review: 11-10-95 Date returned: _____

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Quality		A
T. Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
	Safety		A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
5/5.2.2	Referenced # steps in error	Fixed	Corrected #s

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 11-15-95

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

M. A. Hill 11.17.95
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

M A Hill 11.17.95
Approval Signature Date

Please highlight your name in DISTRIBUTION to:

ion sheets

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-001 Rev: 0 Chg: 0 Bldg.:

Title: Operate 15-Ton Canyon Crane

Facility: WESF Approval Des.: S, Q

Date issued for review: 11-10-95 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Quality		A
T. Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
	Safety		A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	Move note from 5.1 to 5.2		corrected

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 11-15-95

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Tom Gainey (Print Reviewer Name) / ## 373-0964 (Phone Number)

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Tom Gainey (Approval Signature) / 11/16/95 (Date)

Please highlight your name in DISTRIBUTIOI tion sheets to:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Page 1 of 1

Procedure Number: EO-909-001 Rev: D Chg: 0 Bldg.: _____

Title: Operate 15-Ton Canyon Crane

Facility: WESF Approval Des.: S, Q

Date issued for review: 11-10-95 Date returned: _____

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Quality		A
T. Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
	Safety		A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
1.0	Add 355° to horiz movement.		Incorporated all comments
5.2 [2]	Correct step # reference		
5.3 [3]	Add "Press Radio test button" this activates transmitter.		
5.3 [4]	Move crane first		
[7]	perform [2]'s [6] together		
[10]	move to 6.0		
6.0 [2] [6]	Delete		

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 11-15-95

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

J. Eberle / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

_____ / 11-17-95
Approval Signature Date

Please highlight your name in DISTRIBUTION to:

tion sheets

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Page 1 of 1

Procedure Number: EO-909-001 Rev: D Chg: 0 Bldg.:

Title: Operate 15-Ton Canyon Crane

Facility: WESF Approval Des.: S, Q

Date issued for review: 11-10-95 Date returned: 11-14-95

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Quality		A
T. Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
	Safety		A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	None		

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 11-15-95

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Kristin A Hedquist / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

_____ / 11-14-95
Approval Signature Date

Please highlight your name in DISTRIBUTION and to: sheets

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-909-001 Rev: 0 Chg: 0 Bldg.:
Title: Operate 15-Ton Canyon Crane
Facility: WESF Approval Des.: S, Q
Date issued for review: 11-10-95 Date returned: 11-13-95

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Quality		A
T. Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
	Safety		A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	None		

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 11-15-95

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Print Reviewer Name / Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Rebecca Sutherland / 11-13-95
Approval Signature Date

Please highlight your name in DISTRIBUTI ıation sheets to:

Procedure No: EO-909-001 Rev.: D-0

Title: Operate 15-Ton Canyon Crane

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 5.4.1 of WHC-CM-3-5, Section 12.5. Technical comments, if any, should be recorded in the facility specific comment/review record or on the back of this checklist.

1.	Can the procedure be performed in the sequence written?	☑ Yes	☐ No	☐ N/A
2.	Can the individual steps be performed?	☑ Yes	☐ No	☐ N/A
	• Each step specifically identified the action to be taken (such as open, shut, turn)	☑ Yes	☐ No	☐ N/A
	• Limitations are expressed quantitatively	☐ Yes	☐ No	☑ N/A
	• Equipment and parts are identified clearly and reflect exact equipment nomenclature	☑ Yes	☐ No	☐ N/A
	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided	☑ Yes	☐ No	☐ N/A
	• The procedure accurately reflects the current configuration of the process or equipment	☑ Yes	☐ No	☐ N/A
	• The amount and level of information is adequate	☑ Yes	☐ No	☐ N/A
3.	Can the user locate and identify all equipment referred to in the procedure?	☑ Yes	☐ No	☐ N/A
4.	Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)?	☑ Yes	☐ No	☐ N/A
	• Plant, system, or equipment lineups?	☐ Yes	☐ No	☑ N/A
	• Precautions to be observed?	☑ Yes	☐ No	☐ N/A
	• Plant, system, or equipment limitations?	☐ Yes	☐ No	☑ N/A
	• By part number or other unique nomenclature?	☐ Yes	☐ No	☑ N/A
5.	Can the user perform the procedure without obtaining additional information from persons or documents?	☑ Yes	☐ No	☐ N/A
	• If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently?	☐ Yes	☐ No	☑ N/A
6.	Does the procedure include adequate QA, Safety, Environmental, or HPT hold points?	☐ Yes	☐ No	☑ N/A

Procedure No: EO-909-001 Rev.: D-0

Title: Operate 15-Ton Canyon Crane

7.	Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?	☑ Yes	☐ No	☐ N/A
	• In the correct order to perform the task?	☑ Yes	☐ No	☐ N/A
	• Missing?	☐ Yes	☑ No	☐ N/A
	• Detailed enough to allow performance without interpretation?	☑ Yes	☐ No	☐ N/A
	• Too detailed?	☐ Yes	☑ No	☐ N/A
8.	Are notes, cautions, or warnings placed directly ahead of the steps to which they apply?	☑ Yes	☐ No	☐ N/A
9.	Does procedure include signoff spaces for independent verifications?	☐ Yes	☐ No	☑ N/A
10.	Are graphs, charts, and tables adequate for readability and use?	☐ Yes	☐ No	☑ N/A
	• Are they compatible with the procedure?	☐ Yes	☐ No	☑ N/A
	• Can values be extracted or interpolated easily?	☐ Yes	☐ No	☑ N/A
	• Are units of scale and measurement useable?	☐ Yes	☐ No	☑ N/A
	• Are titles descriptive of contents and use?	☐ Yes	☐ No	☑ N/A
11.	Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations?	☑ Yes	☐ No	☐ N/A
12.	If any follow-up action, test, or procedure must be performed, is that action clearly identified?	☐ Yes	☐ No	☑ N/A
	• Are correct personnel specified?	☐ Yes	☐ No	☑ N/A
	• Are reporting chains specified correctly?	☐ Yes	☐ No	☑ N/A
	• Are actions or referenced procedures specified correctly?	☐ Yes	☐ No	☑ N/A
13.	Is the procedure updated to current guidelines?	☑ Yes	☐ No	☐ N/A
	• Technical guidelines (such as Tech Specs)	☑ Yes	☐ No	☐ N/A
	• Format editorial requirements	☑ Yes	☐ No	☐ N/A

Validated By: M.J. Eberle (User - Print Name) M.J. Eberle (Signature) 11-17-95 (Date)

Concurred By: Tom Gainey (Technical Authority - Print Name) Tom Gainey (Signature) 11/17/95 (Date)

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-045

Page 1 of 1

Procedure No.: EO-909-003 Rev: DE 4-26-96 Chg: 0 Bldg.: Date Issued: 02-14-96

Title: Operate In-Cell Hoist

Initiator: KA Hedquist Phone: 372-1436 MSIN: Bldg: Date 02-14-96

Tech Authority (print): TA Gainey Phone: 373-0964 MSIN: Bldg:

Organization Name: WESF Engineering Org Code: 16E20 TPCN/WO

TS/OSR Related? [X]No [ ]Yes Ref.: n/a Procedure Approval Designator: [ ]D [ ]E [X]S [ ]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: n/a

OR: PCA # n/a

[ ] Field Change (Obtain signatures below) (* same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[X] Rewrite (complete revision) (Rev # increment)

OR:

[ ] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review n/a.

DESIRED VALIDATION METHOD: [X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [ ] retype or field change, [ ] Other List Reason: n/a

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # WESF-96-120 ECS - Yes [X] No [ ] # 96-105

RECALL INFORMATION: Performance Frequency: n/a Start (after procedure issue): n/a

Description (attach additional sheets as needed):

Procedure revision required to update to current standards per WHC-CM-3.5 Section 12.5
Required to correct omissions and to improve conduct of operations.

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	TA Gainey	Tom Gainey	56-51	4/10/96
TA Mgr.:		* See BP-3		
Ops/Validation:		* See BP-3		
QA:		**See BP-3		
HSA:		**See BP-3		
EA:		**See BP-3		
Other:		**See BP-3		
RELEASE AUTHORITY:	JL Pennock		54-70	4-23-96

Appendix A
Page 152
WHC-SD-WM-RRR-010 Rev. 0

Start Date: 04-09-96 Electronic Copy Date: 4-26-96 Control Copies Date:

Assigned Author: KA Hedquist By: By:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-909-003 Rev: ~~D~~ E Chg: 0 Bldg.:

Title: Operate In-cell Hoist

Facility: WESF Approval Des.: S

Date issued for review: 4-10-96 Date returned: 4-23-96

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	S Froehlich	SP review		A
TA Gainey	Tech. Authority		A		WESF Operations		
KA Jennings-Mills	TA. Manager		A				
	Validator		V				
	Safety		A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
p5 5.1 [8][a]	delete ~~throug~~ the "Through the sprockets"	INC.
[9][a]	same as above	INC.
p7 7.0 [2]	change daily to "as required"	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

L. Lanman /

Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

[signature] / 4-23-96

Approval Signature Date

Please highlight your name in DISTRIBUTION ion sheets to:

PROCINFO X:\FORMS\BP-3.frm {12/22/95}

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-003 Rev: 0 Chg: 0 Bldg.:

Title: Operate In-cell Hoist

Facility: WESF Approval Des.: S

Date issued for review: 4-10-96 Date returned: 4-23-96

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	S Froehlich	SP review		A
TA Gainey	Tech. Authority		A		WESF Operations		
KA Jennings-Mills	TA. Manager		A				
	Validator		V				
	Safety		A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	None	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

S. Davis / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

_____ / 4/23/96
Approval Signature Date

Please highlight your name in DISTR ntinuation sheets to:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-909-003 Rev: 0 Chg: 0 Bldg.:

Title: Operate In-cell Hoist

Facility: WESF Approval Des.: S

Date issued for review: 4-10-96 Date returned: 4-23-96

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	S Froehlich	SP review		A
TA Gainey	Tech. Authority		A		WESF Operations		
KA Jennings-Mills	TA. Manager		A				
	Validator		V				
	Safety		A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	NONE	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

G Johnson /
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Gary W. Gainey / 4-23-96
Approval Signature Date

Please highlight your name in DISTRIBUT[illegible] nuation sheets to:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-909-003 Rev: 0 Chg: 0 Bldg.:

Title: Operate In-cell Hoist

Facility: WESF Approval Des.: S

Date issued for review: 4-10-96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	S Froehlich	SP review		A
TA Gainey	Tech. Authority		A		WESF Operations		
KA Jennings-Mills	TA. Manager		A				
	Validator		V				
	Safety		A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	None	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

M. KALEEM ULLAH / 376-2944
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

[signature] / 4-22-96
Approval Signature Date

Please highlight your name in DISTRIBUT... ...uation sheets to:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-909-003 Rev: 0 Chg: 0 Bldg.:

Title: Operate In-cell Hoist

Facility: WESF Approval Des.: S

Date issued for review: 4-10-96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I	S Froehlich	SP review		A
TA Gainey	Tech. Authority		A		WESF Operations		
KA Jennings-Mills	TA. Manager		A				
	Validator		V				
	Safety		A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	NONE	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Tom Gainey / 373-0964
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Tom Gainey / 4/23/96
Approval Signature Date

Please highlight your name in DISTRIBUT··· ıuation sheets to:

Validation Checklist
Sheet 1 of 2

Procedure No: EO-909-003 Rev.: 6 D-0

Title: Operate In-Cell Hoist

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 5.4.1 of WHC-CM-3-5, Section 12.5. Technical comments, if any, should be recorded in the facility specific comment/review record or on the back of this checklist.

1.	Can the procedure be performed in the sequence written?	☒ Yes	☐ No	☐ N/A
2.	Can the individual steps be performed?	☒ Yes	☐ No	☐ N/A
	• Each step specifically identified the action to be taken (such as open, shut, turn)	☒ Yes	☐ No	☐ N/A
	• Limitations are expressed quantitatively	☐ Yes	☐ No	☒ N/A
	• Equipment and parts are identified clearly and reflect exact equipment nomenclature	☒ Yes	☐ No	☐ N/A
	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided	☐ Yes	☐ No	☒ N/A
	• The procedure accurately reflects the current configuration of the process or equipment	☒ Yes	☐ No	☐ N/A
	• The amount and level of information is adequate	☒ Yes	☐ No	☐ N/A
3.	Can the user locate and identify all equipment referred to in the procedure?	☒ Yes	☐ No	☐ N/A
4.	Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment lineups?	☒ Yes	☐ No	☐ N/A
	• Precautions to be observed?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment limitations?	☐ Yes	☐ No	☒ N/A
	• By part number or other unique nomenclature?	☐ Yes	☐ No	☒ N/A
5.	Can the user perform the procedure without obtaining additional information from persons or documents?	☒ Yes	☐ No	☐ N/A
	• If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently?	☒ Yes	☐ No	☐ N/A
6.	Does the procedure include adequate QA, Safety, Environmental, or HPT hold points?	☐ Yes	☐ No	☒ N/A

Validation Checklist
Sheet 2 of 2

Procedure No: EO-909-003 Rev.: D-0

Title: Operate In-Cell Hoist

7.	Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?	☒ Yes	☐ No	☐ N/A
	• In the correct order to perform the task?	☒ Yes	☐ No	☐ N/A
	• Missing?	☐ Yes	☐ No	☒ N/A
	• Detailed enough to allow performance without interpretation?	☒ Yes	☐ No	☐ N/A
	• Too detailed?	☐ Yes	☒ No	☐ N/A
8.	Are notes, cautions, or warnings placed directly ahead of the steps to which they apply?	☒ Yes	☐ No	☐ N/A
9.	Does procedure include signoff spaces for independent verifications?	☐ Yes	☐ No	☒ N/A
10.	Are graphs, charts, and tables adequate for readability and use?	☐ Yes	☐ No	☒ N/A
	• Are they compatible with the procedure?	☐ Yes	☐ No	☒ N/A
	• Can values be extracted or interpolated easily?	☐ Yes	☐ No	☒ N/A
	• Are units of scale and measurement useable?	☐ Yes	☐ No	☒ N/A
	• Are titles descriptive of contents and use?	☐ Yes	☐ No	☒ N/A
11.	Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations?	☐ Yes	☐ No	☒ N/A
12.	If any follow-up action, test, or procedure must be performed, is that action clearly identified?	☒ Yes	☐ No	☐ N/A
	• Are correct personnel specified?	☒ Yes	☐ No	☐ N/A
	• Are reporting chains specified correctly?	☒ Yes	☐ No	☐ N/A
	• Are actions or referenced procedures specified correctly?	☒ Yes	☐ No	☐ N/A
13.	Is the procedure updated to current guidelines?	☒ Yes	☐ No	☐ N/A
	• Technical guidelines (such as Tech Specs)	☒ Yes	☐ No	☐ N/A
	• Format editorial requirements	☒ Yes	☐ No	☐ N/A

Validated By: Lindy L Lanman (User - Print Name) Signature 4-23-96 Date

Concurred By: Scott Davis (Technical Authority - Print Name) Signature 4-23-96 Date

BP-2 | **PROCEDURE ACTION AUTHORIZATION** | Tracking No. 95-129 | Page 1 of 1

Procedure No.: EO-909-009 Rev: D Chg: 0 Bldg.: 225B Date Issued: 11-10-95

Title: Remove and Install Truckport, G Cell and Pool Cell Coverblocks

Originator: Paul T Saueressig Phone: 372-0071 MSIN: S6-65 Bldg: MO410 Date

Tech Authority (print): T. Gainey Phone: 373-0964 MSIN: S6-81 Bldg: MO400

Organization Name: WESF Engineering Org Code: 16550 TPCN/WO

TS/OSR Related? [ ]No [x]Yes Ref.: SAR 11.4.9 Procedure Approval Designator: [ ]D [ ]E [x]S [x]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE
Please provide the following information, as a minimum, in Description below.
Attach a draft if available:
- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[x] REVISE PROCEDURE per description AS A (Check One):

[ ] Temporary Change, Expires: N/A

OR:

[ ] Field Change - PCA # N/A
(Obtain approval signatures below)
(* same approvals as procedure)

OR:

[x] Rewrite (complete revision)

OR:

[ ] Retype (Incorp. approved changes only) OR Editorial Change

USQ # : WESF-96-084

[ ] PROCEDURE CANCEL:
Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:
Provide justification in Description section.

[ ] PROCEDURE REVIEW:

DESIRED VALIDATION METHOD (not required for retype or field change)

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

Incorporate outstanding Procedure Change Authorizations (EO-493, EO-499, EO-503, EO-507 and EO-538). Formatted to the new guidelines contained in WHC-IP-1182, Chapter 16.

OSR deletions per ECN 169399 to the WESF SAR were also removed per this Procedure revision ECS # 96-021

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. * Signature may not required for Field Change.

	Printed Name		Signature	MSIN	Date
Tech. Auth.:	See Above		Tom Gainey	S6-70	11/17/95
TA Mgr.:	K. A. Jennings-Mills	*	See BP-3	S6-70	
Validation:		*	See BP-3		
QA:	W. F. Witherell	*•	See BP-3	S4-69	
HSA:	W. P. Nelson	*•	See BP-3	S6-21	
EA:	N/A	*•	See BP-3		
Other:	N/A	*•	See BP-3		
RELEASE AUTHORITY:	J. L. Pennock		[signature]	S6-60	3-28-96

Date Received: 11-20-95 Assigned author: PT Saueressig Phone:

Final check by: Date:

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.: 225B

Title: Install and Remove Truckport, G Cell and Pool Cell Coverblocks

Facility: 225B/WESF Approval Des.: S,Q

Date issued for review: 11/15/95 Date returned: ASAP

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P.T. Saueressig	Author	S6-65	I	W. P. Nelson	SHA	S6-21	
T. Gainey	Tech. Authority	S6-81	A				
K. A. Jennings-Mills	TA. Manager	S6-70	A				
	Validator		V				
W. F. Witherell	QA	S4-69	A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [x] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
D14 5.1 [2nd]	Clarify system stabilization		modified statement

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

W. P. Nelson / _____

Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

_____ / 11/15/95

Approval Signature Date

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.: 225B
Title: Install and Remove Truckport, G Cell and Pool Cell Coverblocks
Facility: 225B/WESF Approval Des.: S,Q
Date issued for review: 11/15/95 Date returned: ASAP

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P.T. Saueressig	Author	S6-65	I	W. P. Nelson	SHA	S6-21	
T. Gainey	Tech. Authority	S6-81	A				
K. A. Jennings-Mills	TA. Manager	S6-70	A				
	Validator		V				
W. F. Witherell	QA	S4-69	A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [x] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
	NO Technical comments		

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Tom Gainey (Print Reviewer Name) 1 373 0964 (Phone Number)

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Tom Gainey (Approval Signature) 1 11/17/95 (Date)

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.:

Title: Remove & Install Truckport, G-Cell and Pool Cell Coverblocks

Facility: WESF Approval Des.:

Date issued for review: 11-15-95 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
	Author		I				
	Tech. Authority		A				
	TA. Manager		A				
Power Operator	Validator		V				
Crane Operator	Validator		V				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
~~CH 5.1.7~~	None.		

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 12/08/95

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

John Eberle /
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

M.J. Eberle 12-18-95
Approval Signature Date

Please highlight your name in DISTRIBUTION and to: sheets

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 2

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.:
Title: Remove & Install Truckport, G-Cell and Pool Cell Coverblocks
Facility: WESF Approval Des.:
Date issued for review: 11-15-95 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
	Author		I				
	Tech. Authority		A				
	TA. Manager		A				
Power Operator	Validator		V				
Crane Operator	Validator		V				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT	RECOMMENDATION	RESOLUTION
Page 11 Step 10	-.50 inches of water?	Add neg. or leave As is.	added – sign
Page 13 5.1 Step 16	Same As Above		" added " – " sign.
Page 16 5.2 Step 9	What vent. balance IF you Raised your Cell DP & opened Door to that then you →	Could prob. hold your OSR -.70 DP on G Cell.	deleted step.

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 12/08/95

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

R Cooper /
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

BM Cooper 11-5-96
Approval Signature Date

Please highlight your name in DISTRIBUTION a ...n sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.: _____
Title: Install and Remove Truckport, G-Cell & Pool Cell Cover Blocks
Facility: WESF Approval Des.: Q, S
Date issued for review: OSR 3/12/96 Date returned: _____

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
K Hedquist	Author		I		Power Operator		A
K McDaniel	Tech. Authority		A	WP Nelson	Safety		A
KA Jennings-Mills	TA. Manager		A		Quality		A
	Validator		V	T Gainey	Tech. Authority		A
	WESF Operations		A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	No Comments	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 18 March 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

W P Nelson / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

T P Nelson / 3/13/96
Approval Signature Date

Please highlight your name in DISTRIBUTION to: on sheets

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.:

Title: Install and Remove Truckport, G-Cell & Pool Cell Cover Blocks

Facility: WESF Approval Des.: Q, S

Date issued for review: OSR 3/12/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
K Hedquist	Author		I		Power Operator		A
K McDaniel	Tech. Authority		A	WP Nelson	Safety		A
KA Jennings-Mills	TA. Manager		A		Quality		A
	Validator		V	T Gainey	Tech. Authority		A
	WESF Operations		A				

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	No comments.	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 18 March 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

KA Jennings-Mills /
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Kathleen A. Jennings-Mills 3/14/96
Approval Signature Date

Please highlight your name in DISTRIBUTION an sheets to:

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.:
Title: Install and Remove Truckport, G-Cell & Pool Cell Cover Blocks
Facility: WESF Approval Des.: Q, S
Date issued for review: OSR 3/12/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
K Hedquist	Author		I		Power Operator		A
K McDaniel	Tech. Authority		A	WP Nelson	Safety		A
KA Jennings-Mills	TA. Manager		A		Quality		A
	Validator		V	T Gainey	Tech. Authority		A
	WESF Operations		A				

If you are VALIDATING, use method checked below:
[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top
NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	NO comments.	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 18 March 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

T. Gainey / _____
Print Reviewer Name | Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

T M Gainey / 3/18/96
Approval Signature | Date

Please highlight your name in DISTRIBUTION an to: 1 sheets

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.:
Title: Install and Remove Truckport, G-Cell & Pool Cell Cover Blocks
Facility: WESF Approval Des.: Q, S
Date issued for review: OSR 3/12/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
K Hedquist	Author		I		Power Operator		A
K McDaniel	Tech. Authority		A	WP Nelson	Safety		A
KA Jennings-Mills	TA. Manager		A		Quality		A
	Validator		V	T Gainey	Tech. Authority		A
	WESF Operations		A				

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
4.2	Replace Section 4.2 w/ current Revision of OSD-B-257-00051, Section VI.) Provide Reference to OSD as shown.	Incorp.

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 18 March 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Kari McDaniel / 3/22/96 / 376-4133.
Print Reviewer Name / Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Approval Signature / Date 3/22/96

Please highlight your name in DISTRIBUTION ; on sheets to:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-909-009 Rev: D Chg: 0 Bldg.: ______
Title: Install and Remove Truckport, G-Cell & Pool Cell Cover Blocks
Facility: WESF Approval Des.: Q, S
Date issued for review: OSR 3/12/96 Date returned: ______

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
K Hedquist	Author		I	FM DeSoto	Power Operator		A
K McDaniel	Tech. Authority		A	WP Nelson	Safety		A
KA Jennings-Mills	TA. Manager		A		Quality		A
	Validator		V	T Gainey	Tech. Authority		A
	WESF Operations		A				

If you are **VALIDATING,** use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/STEP	COMMENT/RECOMMENDATION		RESOLUTION
Page 9 4.3, 8th bullet	worded wrong	Remove "and that" and replace with "before".	Incorporated.
Page 12 5.1, 10	Value to strong and locks us in to a value that can't always be maintained while pulling block	Should read as follows: Maintain a (-.45 to -.50 inches of water or (above).	INC TG.
Page 14 5.1, 16	Should read the same as page 12, 5.1, 10	Maintain a -.45 to -.50 inches of water or above.	INC T.G

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 18 March 1996

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Finis Marie DeSoto, 372-0372
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Finis Marie DeSoto, 3/21/96
Approval Signature Date

Please highlight your name in DISTRIBUTION and retu[rn]
to:

PROCINFO X:\FORMS\BP-3.frm (12/22/95)

Validation Checklist
Sheet 1 of 2

Procedure No: EO-909-009 Rev.: D-0

Title: Remove and Install Truckport, G-cell and Pool Cell Coverblocks

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 5.4.1 of WHC-CM-3-5, Section 12.5. Technical comments, if any, should be recorded in the facility specific comment/review record or on the back of this checklist.

1.	Can the procedure be performed in the sequence written?	☒ Yes	☐ No	☐ N/A
2.	Can the individual steps be performed?	☒ Yes	☐ No	☐ N/A
	• Each step specifically identified the action to be taken (such as open, shut, turn)	☒ Yes	☐ No	☐ N/A
	• Limitations are expressed quantitatively	☒ Yes	☐ No	☐ N/A
	• Equipment and parts are identified clearly and reflect exact equipment nomenclature	☒ Yes	☐ No	☐ N/A
	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided	☒ Yes	☐ No	☐ N/A
	• The procedure accurately reflects the current configuration of the process or equipment	☒ Yes	☐ No	☐ N/A
	• The amount and level of information is adequate	☒ Yes	☐ No	☐ N/A
3.	Can the user locate and identify all equipment referred to in the procedure?	☒ Yes	☐ No	☐ N/A
4.	Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment lineups?	☒ Yes	☐ No	☐ N/A
	• Precautions to be observed?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment limitations?	☒ Yes	☐ No	☐ N/A
	• By part number or other unique nomenclature?	☒ Yes	☐ No	☐ N/A
5.	Can the user perform the procedure without obtaining additional information from persons or documents?	☒ Yes	☐ No	☐ N/A
	• If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently?	☒ Yes	☐ No	☐ N/A
6.	Does the procedure include adequate QA, Safety, Environmental, or HPT hold points?	☒ Yes	☐ No	☐ N/A

Procedure No: EO-909-009 Rev.: D-0

Title: Remove and Install Truckport, G-cell and Pool Cell Coverblocks

7.	Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?	☒ Yes	☐ No	☐ N/A
	• In the correct order to perform the task?	☒ Yes	☐ No	☐ N/A
	• Missing?	☐ Yes	☒ No	☐ N/A
	• Detailed enough to allow performance without interpretation?	☒ Yes	☐ No	☐ N/A
	• Too detailed?	☐ Yes	☒ No	☐ N/A
8.	Are notes, cautions, or warnings placed directly ahead of the steps to which they apply?	☒ Yes	☐ No	☐ N/A
9.	Does procedure include signoff spaces for independent verifications?	☒ Yes	☐ No	☐ N/A
10.	Are graphs, charts, and tables adequate for readability and use?	☐ Yes	☐ No	☒ N/A
	• Are they compatible with the procedure?	☐ Yes	☐ No	☒ N/A
	• Can values be extracted or interpolated easily?	☐ Yes	☐ No	☒ N/A
	• Are units of scale and measurement useable?	☐ Yes	☐ No	☒ N/A
	• Are titles descriptive of contents and use?	☐ Yes	☐ No	☒ N/A
11.	Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations?	☒ Yes	☐ No	☐ N/A
12.	If any follow-up action, test, or procedure must be performed, is that action clearly identified?	☐ Yes	☐ No	☒ N/A
	• Are correct personnel specified?	☐ Yes	☐ No	☒ N/A
	• Are reporting chains specified correctly?	☒ Yes	☐ No	☐ N/A
	• Are actions or referenced procedures specified correctly?	☐ Yes	☐ No	☒ N/A
13.	Is the procedure updated to current guidelines?	☒ Yes	☐ No	☐ N/A
	• Technical guidelines (such as Tech Specs)	☒ Yes	☐ No	☐ N/A
	• Format editorial requirements	☒ Yes	☐ No	☐ N/A

Validated By: M J Eberle (User - Print Name) M J Eberle (Signature) 12-18-95 (Date)

Concurred By: Tom Gainey (Technical Authority - Print Name) Tom Gainey (Signature) 3/21/96 (Date)

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-122

Page 1 of 1

Procedure No.: EO-909-011 Rev: C Chg: 0 Bldg.: Date Issued: 04-09-96

Title: Operate 25-Ton Crane

Initiator: KA Hedquist Phone: 372-1436 MSIN: Bldg: Date 04-09-96

Tech Authority (print): TA Gainey Phone: 373-0964 MSIN: Bldg:

Organization Name: WESF Engineering Org Code: 16E20 TPCN/WO

TS/OSR Related? [X]No [ ]Yes Ref.: n/a Procedure Approval Designator: [ ]D [ ]E [X]S [ ]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: n/a

OR: PCA # n/a

[ ] Field Change (Obtain signatures below) (* same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[X] Rewrite (complete revision) (Rev # increment)

OR:

[ ] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review n/a.

DESIRED VALIDATION METHOD: [X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [ ] retype or field change, [ ] Other List Reason:

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # WESF-96-121 ECS - Yes [X] No [ ] # 96-103

RECALL INFORMATION: Performance Frequency: n/a Start (after procedure issue): n/a

Description (attach additional sheets as needed):

Revise to bring format in line with WHC-CM-3-5 section 12.5 requirements.

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. * Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	TA Gainey	TA Gainey	S6-51	4/19/96
TA Mgr.:		* See BP-3		
Ops/Validation:		* See BP-3		
QA:		**See BP-3		
HSA:		**See BP-3		
EA:		**See BP-3		
Other:		**See BP-3		
RELEASE AUTHORITY:	JL Pennock	JL Pennock	24-76	4-23-96

Appendix A
Page 172
WHC-SD-WM-RRR-010 Rev. 0

Start Date: 4-9-96 Electronic Copy Date: 4-26-96 Control Copies Date:

Assigned Author: KA Hedquist By: By:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Page 1 of 1

Procedure Number: EO-909-011 Rev: C Chg: 0 Bldg.:
Title: Operate 25-Ton Crane
Facility: WESF Approval Des.: S
Date issued for review: 04-09-96 Date returned: 4-23-96

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Safety		A
TA Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
WESF	Operations		A	S Froehlich	SP review		A

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
p7 5.4 [7]	should look like 5.2 steps [1] thru [4]	incorporated
p8 5.4 [8][a]	delete "while moving"	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Tom Gainey (Print Reviewer Name) 1373-0964 (Phone Number)

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Tom Gainey (Approval Signature) 4/23/96 (Date)

Please highlight your name in DISTRIBUTION and return this and continuation sheets to:

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-909-011 Rev: C Chg: 0 Bldg.:
Title: Operate 25-Ton Crane
Facility: WESF Approval Des.: S
Date issued for review: 04-09-96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Safety		A
TA Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
WESF	Operations		A	S Froehlich	SP review		A

If you are **VALIDATING**, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	NONE	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

M. KALEEM ULLAH / 376-2944
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

[signature] / 4-22-96
Approval Signature Date

Please highlight your name in DISTRIBUTION and to: sheets

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-011 Rev: C Chg: 0 Bldg.: ______

Title: Operate 25-Ton Crane

Facility: WESF Approval Des.: S

Date issued for review: 04-09-96 Date returned: 4-23-96

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Safety		A
TA Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	Validator		V				
WESF	Operations		A	S Froehlich	SP review		A

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/STEP	COMMENT/RECOMMENDATION	RESOLUTION
	Tom - please see KAJM on the aftergoing review	TY. KAJM 4/10/96

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

______________________ / ______________
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Kathleen A. Jennings-Mills / 4/23/96
Approval Signature Date

Please highlight your name in DISTRIBUTION and return to:

PROCINFO X:\FORMS\BP-3.frm (12/22/95)

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-909-011 Rev: C Chg: 0 Bldg.: _____
Title: Operate 25-Ton Crane
Facility: WESF Approval Des.: S
Date issued for review: 04-09-96 Date returned: _____

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
KA Hedquist	Author		I		Safety		A
TA Gainey	Tech. Authority		A				
KA Jennings-Mills	TA. Manager		A				
J Eberle	~~Validator~~ Review		V				
WESF	Operations		A	S Froehlich	SP review		A

If you are VALIDATING, use method checked below:

[X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
3/3.7	"Glove, yoke plywood" not necessary.	I A C.
3/3.3 [1]	delete from "and Record . . . . " duplicate of step 5.4 [1]	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: 4-15-96

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

J. Eberle / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

_____ 14-23-96
Approval Signature Date

Please highlight your name in DISTRIBUTION and to: sheets

Validation Checklist
Sheet 1 of 2

Procedure No: EO-909-011 Rev.: C-0

Title: Operate 25-Ton Crane

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 5.4.1 of WHC-CM-3-5, Section 12.5. Technical comments, if any, should be recorded in the facility specific comment/review record or on the back of this checklist.

1.	Can the procedure be performed in the sequence written?	☑ Yes	☐ No	☐ N/A
2.	Can the individual steps be performed?	☑ Yes	☐ No	☐ N/A
	• Each step specifically identified the action to be taken (such as open, shut, turn)	☑ Yes	☐ No	☐ N/A
	• Limitations are expressed quantitatively	☐ Yes	☐ No	☑ N/A
	• Equipment and parts are identified clearly and reflect exact equipment nomenclature	☑ Yes	☐ No	☐ N/A
	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided	☑ Yes	☐ No	☐ N/A
	• The procedure accurately reflects the current configuration of the process or equipment	☑ Yes	☐ No	☐ N/A
	• The amount and level of information is adequate	☑ Yes	☐ No	☐ N/A
3.	Can the user locate and identify all equipment referred to in the procedure?	☑ Yes	☐ No	☐ N/A
4.	Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)?	☑ Yes	☐ No	☐ N/A
	• Plant, system, or equipment lineups?	☐ Yes	☐ No	☑ N/A
	• Precautions to be observed?	☑ Yes	☐ No	☐ N/A
	• Plant, system, or equipment limitations?	☐ Yes	☐ No	☑ N/A
	• By part number or other unique nomenclature?	☐ Yes	☐ No	☑ N/A
5.	Can the user perform the procedure without obtaining additional information from persons or documents?	☑ Yes	☐ No	☐ N/A
	• If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently?	☐ Yes	☐ No	☑ N/A
6.	Does the procedure include adequate QA, Safety, Environmental, or HPT hold points?	☐ Yes	☐ No	☑ N/A

Validation Checklist
Sheet 2 of 2

Procedure No: EO-909-011 Rev.: C-0

Title: Operate 25-Ton Crane

7.	Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?	☑ Yes	☐ No	☐ N/A
	• In the correct order to perform the task?	☑ Yes	☐ No	☐ N/A
	• Missing?	☐ Yes	☑ No	☐ N/A
	• Detailed enough to allow performance without interpretation?	☑ Yes	☐ No	☐ N/A
	• Too detailed?	☐ Yes	☑ No	☐ N/A
8.	Are notes, cautions, or warnings placed directly ahead of the steps to which they apply?	☑ Yes	☐ No	☐ N/A
9.	Does procedure include signoff spaces for independent verifications?	☐ Yes	☐ No	☑ N/A
10.	Are graphs, charts, and tables adequate for readability and use?	☐ Yes	☐ No	☑ N/A
	• Are they compatible with the procedure?	☐ Yes	☐ No	☑ N/A
	• Can values be extracted or interpolated easily?	☐ Yes	☐ No	☑ N/A
	• Are units of scale and measurement useable?	☐ Yes	☐ No	☑ N/A
	• Are titles descriptive of contents and use?	☐ Yes	☐ No	☑ N/A
11.	Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations?	☑ Yes	☐ No	☐ N/A
12.	If any follow-up action, test, or procedure must be performed, is that action clearly identified?	☐ Yes	☐ No	☑ N/A
	• Are correct personnel specified?	☑ Yes	☐ No	☐ N/A
	• Are reporting chains specified correctly?	☑ Yes	☐ No	☐ N/A
	• Are actions or referenced procedures specified correctly?	☐ Yes	☐ No	☑ N/A
13.	Is the procedure updated to current guidelines?	☑ Yes	☐ No	☐ N/A
	• Technical guidelines (such as Tech Specs)	☑ Yes	☐ No	☐ N/A
	• Format editorial requirements	☑ Yes	☐ No	☐ N/A

Validated By: M. J. Eberle (User - Print Name) M. J. Eberle (Signature) 4-23-96 (Date)

Concurred By: Tom Gauncy (Technical Authority - Print Name) Tom Gauncy (Signature) 4/23/96 (Date)

BP-2 | **PROCEDURE ACTION AUTHORIZATION**

Tracking No. 95-188

Page 1 of 2 [illegible]

Procedure No.: EO-912-006 Rev: D Chg: 0 Bldg.: 225B Date Issued: _____

Title: Enter G-Cell

Initiator: P. T. Saueressig Phone: 372-0071 MSIN: S6-65 Bldg: MO-410 Date 12/22/95

Tech Authority (print): Same Phone: _____ MSIN: _____ Bldg: _____

Organization Name: Capsule Management Team Org Code: 16800 TPCN/WO _____

TS/OSR Related? [ ]No [x]Yes Ref.: 11.4.2 Procedure Approval Designator: [ ]D [ ]E [x]S [x]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.

Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[x] REVISE PROCEDURE per description AS A (Check One):

[ ] Temporary Change, Expires: _____

OR:

[ ] Field Change - PCA # _____

(Obtain approval signatures below)
(• same approvals as procedure)

OR:

[x] Rewrite (complete revision)

OR:

[ ] Retype (Incorp. approved changes only) OR Editorial Change

USQ # : WESF-96-027

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

DESIRED VALIDATION METHOD (not required for retype or field change)

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

Update to procedure guidelines contained in WHC-IP-1182, Chapter 16. Incorporation of outstanding Procedure Change Authorizations (PCA) EO-00539 and EO-00500.

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	See Above	Paul T Saueressig	S6-65	12/22/95
TA Mgr.:	M. M. Pereira	*	S6-65	
Validation:		*		
QA:	W. F. Witherell	*•	S4-69	
HSA:	W. P. Nelson	*•	S6-21	
EA:		*•		
Other:		*•		
RELEASE AUTHORITY:	J. L. Pennock	[signature]	S4-70	1-24-96

Date Received: 12-22-95 Electronic Copy Date: 1-25-96

Assigned Author: P. Saueressig By: [signature]

ROUTING, REVIEW, AND APPROVAL RECORD

Page 1 of 1

Procedure Number: EO-912-006 Rev: D Chg: 0 Bldg.: 225B
Title: Enter G-Cell
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 01/10/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
5.2 3/3,3E	Remove rubbers & survey clothing — R3 EXH. FANS ARE NOT OF CHECKED PER EO-060-006	Protective Clothing incorporated Comment Incorporated Comments
4.2	ADD WARNING	Incorporated Comment Section 5.1
5.1 pg 5	ADD in steps	Incorporated Comment
5.1 pg 6	ADD Revised step 13	Incorporated Comment
5.1 pg 7	Insert step 13	Incorporated Comment
5.2 pg 8	ADD step 13 but reverse actions	Incorporated Comment

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: ASAP

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

DAN BARNETT / MARIE DESOTO 1-372-0654
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

RMC 1-24-96 Paul T. Saueressig 01/24/96
Approval Signature Date

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: D Chg: 0 Bldg.: 225B
Title: Enter G-Cell
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 12/21/95 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
3/5.2	NEED TO CONTROL ~~LOWER~~ CLOSING DOOR TO SAME LEVEL AS OPENING THE DOOR	Incorporated

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

R. W. Pickett / 372-0454
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Approval Signature 1/15/96
Date

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-912-006 Rev: D Chg: 0 Bldg.: 225B
Title: Enter G-Cell
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 12/21/95 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	None	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

W. F. Witherell / _____
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

W Witherell / 1/11/96
Approval Signature

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-912-006 Rev: D Chg: 0 Bldg.: 225B
Title: Enter G-Cell
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 12/21/95 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are VALIDATING, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	None	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

W. P. Nelson /
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

[signature] 1/3/96
Approval Signature

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-912-006 Rev: D Chg: 0 Bldg.: 225B
Title: Enter G-Cell
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 12/21/95 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are VALIDATING, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	No comment	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

M. M. Pereira 12-0036
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN ~~until your~~ comments have been satisfactorily resolved.

Approval Signature 12/22/95
Date

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-912-006 Rev: D Chg: 0 Bldg.: 225B
Title: Enter G-Cell
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 12/21/95 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	No comments	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

P. T. Saueressig (Print Reviewer Name) 1 372 7011 (Phone Number)

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

(Approval Signature) 1/22/95 (Date)

Procedure No: ____________ Rev.: ________

Title: ____________________________

7.	Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?	☒ Yes	☐ No	☐ N/A
	• In the correct order to perform the task?	☒ Yes	☐ No	☐ N/A
	• Missing?	☐ Yes	☐ No	☒ N/A
	• Detailed enough to allow performance without interpretation?	☒ Yes	☐ No	☐ N/A
	• Too detailed?	☐ Yes	☒ No	☐ N/A
8.	Are notes, cautions, or warnings placed directly ahead of the steps to which they apply?	☒ Yes	☐ No	☐ N/A
9.	Does procedure include signoff spaces for independent verifications?	☒ Yes	☐ No	☐ N/A
10.	Are graphs, charts, and tables adequate for readability and use?	☒ Yes	☐ No	☐ N/A
	• Are they compatible with the procedure?	☒ Yes	☐ No	☐ N/A
	• Can values be extracted or interpolated easily?	☒ Yes	☐ No	☐ N/A
	• Are units of scale and measurement useable?	☒ Yes	☐ No	☐ N/A
	• Are titles descriptive of contents and use?	☒ Yes	☐ No	☐ N/A
11.	Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations?	☒ Yes	☐ No	☐ N/A
12.	If any follow-up action, test, or procedure must be performed, is that action clearly identified?	☒ Yes	☐ No	☐ N/A
	• Are correct personnel specified?	☒ Yes	☐ No	☐ N/A
	• Are reporting chains specified correctly?	☒ Yes	☐ No	☐ N/A
	• Are actions or referenced procedures specified correctly?	☒ Yes	☐ No	☐ N/A
13.	Is the procedure updated to current guidelines?	☒ Yes	☐ No	☐ N/A
	• Technical guidelines (such as Tech Specs)	☒ Yes	☐ No	☐ N/A
	• Format editorial requirements	☒ Yes	☐ No	☐ N/A

Validated By: James E. Wahaumser (User - Print Name) [signature] (Signature) 1-24-96 (Date)

Concurred By: Paul T Sauerresig (Technical Authority - Print Name) [signature] (Signature) 1/24/96 (Date)

PROCINFO X:\FORMS\Validate.frm {08/28/95} WHC

Validation Checklist
Sheet 1 of 2

Procedure No: EO-912-006, Rev.: D-0

Title: Enter G-Cell

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 5.4.1 of WHC-CM-3-5, Section 12.5. Technical comments, if any, should be recorded in the facility specific comment/review record or on the back of this checklist.

1.	Can the procedure be performed in the sequence written?	☒ Yes	☐ No	☐ N/A
2.	Can the individual steps be performed?	☒ Yes	☐ No	☐ N/A
	• Each step specifically identified the action to be taken (such as open, shut, turn)	☒ Yes	☐ No	☐ N/A
	• Limitations are expressed quantitatively	☒ Yes	☐ No	☐ N/A
	• Equipment and parts are identified clearly and reflect exact equipment nomenclature	☒ Yes	☐ No	☐ N/A
	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided	☒ Yes	☐ No	☐ N/A
	• The procedure accurately reflects the current configuration of the process or equipment	☒ Yes	☐ No	☐ N/A
	• The amount and level of information is adequate	☒ Yes	☐ No	☐ N/A
3.	Can the user locate and identify all equipment referred to in the procedure?	☒ Yes	☐ No	☐ N/A
4.	Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment lineups?	☒ Yes	☐ No	☐ N/A
	• Precautions to be observed?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment limitations?	☒ Yes	☐ No	☐ N/A
	• By part number or other unique nomenclature?	☒ Yes	☐ No	☐ N/A
5.	Can the user perform the procedure without obtaining additional information from persons or documents?	☒ Yes	☐ No	☐ N/A
	• If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently?	☒ Yes	☐ No	☐ N/A
6.	Does the procedure include adequate QA, Safety, Environmental, or HPT hold points?	☒ Yes	☐ No	☐ N/A

BP-2 | **PROCEDURE ACTION AUTHORIZATION**

Tracking No. 96-120

Page 1 of 3

Procedure No.: EO-912-006 Rev: D Chg: 0 Bldg.: 225B Date Issued: 01/24/96

Title: ENTER G CELL

Initiator: R. D. PICKETT Phone: 372-0054 MSIN: S4-70 Bldg: 225B Date 4/3/96

Tech Authority (print): P T Saueressig Phone: 372-0071 MSIN: S6-51 Bldg: MO-029

Organization Name: Capsule Management Org Code: 16E00 TPCN/WO KW41A

TS/OSR Related? [X]No [ ]Yes Ref.: N/A Procedure Approval Designator: [ ]D [ ]E [X]S [ ]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.

Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA # EO-570

[X] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[ ] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review NA.

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [X] retype or field change, [ ] Other List Reason:

REQUIRED SCREENINGS: USQ - Yes [ ] No [X] # N/A Editorial ECS - Yes [ ] No [X] # N/A Editorial

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

The procedure incorrectly identifies the K-3 supply damper controller is incorrectly identified as K3-DPC 1-2. It should be K3 DPC 1-1. The G-cell Fairchild supply controller K3-DPC-1-8 should be shut after initially cracking open the G cell door in section 5.1 step [16].

OFFICIAL RELEASED FD

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	PT Saueressig	Paul T Saueressig	S6-51	4/3/96
TA Mgr.:	M.M. Pereira	*	S6-51	4/3/96
Ops/Validation:	N/A	*		
QA:	WF WITKERELL	*. W Witkerell	S4-69	4/3/96
HSA:	M. KALEEM ULLAH	*.	S6-69	4/3/96
EA:	N/A	*.		
Other:		*.		
RELEASE AUTHORITY:	J L Pennick		S4-70	4-3-96

Start Date: 1-24-96 Electronic Copy Date: 4-4-96

Assigned Author: P. Saueressig By:

BP-2 PROCEDURE ACTION AUTHORIZATION

Tracking No. 96-067

Page 1 of 7

Procedure No.: EO-912-006 Rev: D Chg: 0 Bldg.: Date Issued: 03-01-96

Title: Enter G-Cell

Initiator: KA Hedquist Phone: 372-1436 MSIN: S6-60 Bldg: Date 03-01-96

Tech Authority (print): P. Saueressig Phone: 372-0071 MSIN: Bldg:

Organization Name: WESF Engineering Org Code: 16E20 TPCN/WO

TS/OSR Related? [ ]No [ ]Yes Ref.: Procedure Approval Designator: [ ]D [ ]E [X]S [X]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.

Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: n/a

OR: PCA # EO-00557

[X] Field Change (Obtain signatures below) (* same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[ ] Retype (Incorp. approved changes only) (Mod # increment)

OFFICIALLY RELEASED EO

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review n/a.

DESIRED VALIDATION METHOD: [X] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

Validation NOT Required: [ ] retype or field change, [ ] Other List Reason: n/a

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # WSF-95-154 ECS - Yes [X] No [ ] #

RECALL INFORMATION: Performance Frequency: n/a Start (after procedure issue): n/a

Description (attach additional sheets as needed):

Upgrade procedure to delete reference to OSR's that were deleted per ECN 169399.
Additional changes to be made to correct any technical deficiencies.

Validation check list not required per performance inspect -

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	P. Saueressig	Paul J. Saueressig	S6-65	03/05/96
TA Mgr.:	Kathleen A. Jennings-Mills	*Kathleen A. Jennings-Mills (signed 3/5/96)	S6 S4-70	3/5/96
Validation:	G.L. GARMAN	* G.L. Garman	S4-70	3-6-96
QA:	WF WITHERELL	** W Witherell	S4-69	3/5/96
HSA:	MK ULLAH	**	S6-69	3/5/96
EA:		**		
Other:		**		
RELEASE AUTHORITY:	J. Pennock	Pennock	S4-70	3-19-96

Start Date: 03-01-96

Assigned Author: P Saueressig

Electronic Copy Date: 3-19-96

By:

EO912006.DOI

PROCINFO X:\FORMS\BP-2.frm (02/14/96)

BP-2 | **PROCEDURE ACTION AUTHORIZATION**

Tracking No. ~~96-089~~ 96-092 (Rev 3-15-96)

Page 1 of ~~8~~ 9 (Rev 3-19-96)

Procedure No.: EO-912-006 Rev: D Chg: 0 Bldg.: 225B Date Issued: 3/13/96

Title: G CELL ENTRY

Initiator: L. L. NUNN Phone: 372-0171 MSIN: S6-51 Bldg: MO-029 Date 3/13/96

Tech Authority (print): L. L. NUNN Phone: 372-0171 MSIN: S6-51 Bldg: MO-029

Organization Name: WESF ENGINEERING Org Code: 16E20 TPCN/WO

TS/OSR Related? [X]No [ ]Yes Ref.: N/A Procedure Approval Designator: [ ]D [E]E [S]S [ ]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:
- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[X] REVISE PROCEDURE

per description as a (Check One):

[ ] Temporary Change, Expires: N/A

OR: PCA # EO-00565

[ ] Field Change (Obtain signatures below) (• same approvals as procedure)

[ ] Editorial Change Only (TA & Release Authority only)

OR:

[ ] Rewrite (complete revision) (Rev # increment)

OR:

[ ] Retype (Incorp. approved changes only) (Mod # increment)

OFFICIALLY RELEASED FD

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

Date required for completed review N/A.

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [X] Table-top

Validation NOT Required: [ ] retype or field change, [ ] Other List Reason: CHECKLIST NOT REQUIRED

REQUIRED SCREENINGS: USQ - Yes [X] No [ ] # WESF-96-027 ECS - Yes [X] No [ ] #96-072

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

Procedure is being amended to include warings concerning entry into G cell if any K-3 exhaust fan or emergency steam jet is not operational.

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	L. L. NUNN			
TA Mgr.:	S. J. DAVIS	*	S6-51	3-15-96
Ops/Validation:		* N/A		
QA:	W. F. WITHERELL	*•	S4-65	3/15/96
HSA:	W. P. NELSON	*•	S6-09	3-15-96
EA:		*• N/A		
Other:		*•		
RELEASE AUTHORITY:	J. L. PENNOCK		S4-70	3-19-96

Start Date: 3/13/96 Electronic Copy Date: 3-19-96

Assigned Author: L.NUNN By:

EO912006.DOC

BP-2 | **PROCEDURE ACTION AUTHORIZATION**

Tracking No. 96-121
Page 1 of 2

Procedure No.: EO-912-006 Rev: D Chg: 0 Bldg.: 225B Date Issued: 4/4/96
Title: Enter G Cell
Initiator: R. D. Pickett Phone: 372-0054 MSIN: S4-70 Bldg: 225B Date 4/4/96
Tech Authority (print): PT Sauerwein Phone: 372-0071 MSIN: S6-51 Bldg: 225B
Organization Name: Capsule Management Team Org Code: 16E00 TPCN/WO KW65D

TS/OSR Related? [X] No [ ] Yes Ref.: N/A Procedure Approval Designator: [ ] D [ ] E [X] S [X] Q [ ] NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE
Please provide the following information, as a minimum, in Description below.
Attach a draft if available:
- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[ ] REVISE PROCEDURE
per description as a (Check One):
[ ] Temporary Change, Expires: _____
OR: PCA # EO-00571
[X] Field Change (Obtain signatures below) (* same approvals as procedure)
[ ] Editorial Change Only (TA & Release Authority only)
OR:
[ ] Rewrite (complete revision) (Rev # increment)
OR:
[ ] Retype (Incorp. approved changes only) (Mod # increment)

[ ] PROCEDURE CANCEL:
Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:
Provide justification in Description section.

[ ] PROCEDURE REVIEW:
Date required for completed review N/A.

DESIRED VALIDATION METHOD: [ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top
Validation NOT Required: [X] retype or field change, [ ] Other List Reason: _____

REQUIRED SCREENINGS: USQ - Yes [ ] No [X] # Typographical error ECS - Yes [ ] No [X] # Typographical error

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):
Page 9 section 5.1, step 16, identifies the incorrect units of mrad/hr and not mrem/hr.

OFFICIAL USE ONLY FD

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	Paul T Sauerwein	Paul T Sauerwein	S6-51	4/4/96
TA Mgr.:	M. M. Pereira for USQD	* for JLP	S6-51	4/4/96
Ops/Validation:		*		
QA:	WF WITHERELL	*. W Witherell	S4-69	4/4/96
HSA:	RA Wilson	*. R A Wilson	S6-69	4/4/96
EA:		*.		
Other:		*.		
RELEASE AUTHORITY:	JL Fernack	J Fernack	S4-70	4-4-96

Start Date: 4-4-96 Electronic Copy Date: 4-4-96
Assigned Author: P. Sauerwein By: [signature]

BP-2 **PROCEDURE ACTION AUTHORIZATION**

Tracking No. 96-035

Page 1 of 1

Procedure No.: EO-100-012 Rev: C Chg: 0 Bldg.: 225B Date Issued:

Title: Operate Go-No-Go Gage and Examine Capsules

Originator: P. T. Saueressig Phone: 372-0071 MSIN: S6-65 Bldg: MO-410 Date 01/03/96

Tech Authority (print): Same Phone: MSIN: Bldg:

Organization Name: Capsule Management Team Org Code: 16E00 TPCN/WO

TS/OSR Related? [x]No [ ]Yes Ref.: NA Procedure Approval Designator: [ ]D [ ]E [x]S [x]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE

Please provide the following information, as a minimum, in Description below.
Attach a draft if available:

- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[x] REVISE PROCEDURE per description AS A (Check One):

[ ] Temporary Change, Expires:

OR:

[ ] Field Change - PCA #

(Obtain approval signatures below)
(• same approvals as procedure)

OR:

[x] Rewrite (complete revision)

OR:

[ ] Retype (Incorp. approved changes only) OR Editorial Change

USQ # : WESF-96-026

[ ] PROCEDURE CANCEL:

Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:

Provide justification in Description section.

[ ] PROCEDURE REVIEW:

DESIRED VALIDATION METHOD (not required for retype or field change)

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):

Update to procedure guidelines contained in WHC-IP-1182, Chapter 16. Incorporation of outstanding Procedure Change Authorizations (PCA) EO-00526 and EO-00527.

APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	See Above	Paul Saueressig	S6-65	01/31/96
TA Mgr.:	M. M. Pereira	*	S6-65	
Validation:		*		
QA:	W. F. Witherell	*•	S4-69	
HSA:	W. P. Nelson	*•	S6-21	
EA:		*•		
Other:		*•		
RELEASE AUTHORITY:	J. L. Pennock	J. Pennock	S4-70	1-31-96

Date Received: 1-3-96 Electronic Copy Date: 2-1-96 Control Copies Date:

Assigned Author: P. Saueressig By: [illegible] B

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-100-012 Rev: C Chg: 0 Bldg.: 225B
Title: Operate Go-No-Go Gage and Examine Capsules
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 01/03/96 ~~01/08/96~~ FCS 1/10/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
3	Reference Section - Separate into in-hand and available for procedures required.	Incorporate comment.

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Lindy Lanman / 372-0054
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Lindy Lanman 1/31-96
Approval Signature Date

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-100-012 Rev: C Chg: 0 Bldg.: 225B
Title: Operate Go-No-Go Gage and Examine Capsules
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 01/23/96 RCS 1/10/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
Entire Procedure	See marked up procedure	Incorporated marked up comments.

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

W. F. Witherell 1/23/96 ,
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

W Witherell , 1/26/96
Approval Signature Date

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-100-012 Rev: C Chg: 0 Bldg.: 225B
Title: Operate Go-No-Go Gage and Examine Capsules
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 01/~~03~~ 10/96 PTS 1/10/96 Date returned: 1/11/96

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
5.1[2]	1, Note before step is not needed (optional)	Kept in procedure to assure QC notification is performed.
¶	2. ~~Indicate "QC" prior to [2]~~	
4.0/ 5.1[5] 5.4[3]	what/Gimbaoss for values of 200 cpm the whole OSD	Added to note
	unless a losing a capsule in pool cell 1, however there is still a young bleed over pool cell 1 - clarify	Added new note ~~differs from data sheet in that data sheet only refers to T-C~~ WCT 1/11

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: __________

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

W. P. Nelson / ________
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

[signature] / 3-5212
Approval Signature Date

PROCINFO X:\FORMS\BP-3.frm {12/22/95}

BP-3 ROUTING, REVIEW, AND APPROVAL RECORD

Procedure Number: EO-912-006 Rev: D Chg: 0 Bldg.: 225B
Title: Enter G-Cell
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 01/10/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	1	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	No Comments	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY: _____

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Paul Saueressig 1372-0071
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Paul Saueressig 1/10/96
Approval Signature Date

PROCINFO X:\FORMS\BP-3.frm {12/22/95}

BP-3	ROUTING, REVIEW, AND APPROVAL RECORD	Page 1 of 1

Procedure Number: EO-100-012 Rev: C Chg: 0 Bldg.: 225B
Title: Operate Go-No-Go Gage and Examine Capsules
Facility: Waste Encapsulation and Storage Facility Approval Des.: S,Q
Date issued for review: 01/03/96 Date returned:

DISTRIBUTION

* ACTION REQUIRED: A = APPROVAL/REVIEW, I = INFORMATION ONLY (NO RESPONSE REQUIRED), V = VALIDATION.

NAME	ORG/JOB TITLE	MSIN	*	NAME	ORG/JOB TITLE	MSIN	*
P. T. Saueressig	Author	S6-65	I	W. F. Witherell	Quality Assur.	S4-69	A
P. T. Saueressig	Tech. Authority		A				
M. M. Pereira	TA. Manager	S6-65	A				
	Validator	S4-70	V				
W. P. Nelson	Nuclear Safety	S6-21	A				

If you are **VALIDATING**, use method checked below:

[x] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

NOTE - A Procedure Validation Checklist is required during validation.

PAGE/ STEP	COMMENT/RECOMMENDATION	RESOLUTION
	No Comment.	

Use continuation sheet(s) if more space is required.

YOUR RESPONSE IS REQUESTED BY:

1) If reviewer is other than addressee, please print reviewer name and phone number below, and highlight the name of the addressee above:

Mario Pereira / 372-0036
Print Reviewer Name Phone Number

2) If document is approved as written, with NO TECHNICAL COMMENTS, or editorial comments only, then sign below:

3) If you have technical comments, DO NOT SIGN until your comments have been satisfactorily resolved.

Approval Signature / 1/31/96
Date

Validation Checklist
Sheet 1 of 2

Procedure No: EO-100-012 Rev.: C-0

Title: Operate Ge-Ne-Ge Gage and Examine Capsules

This checklist is designed to assist a person performing a procedure validation. Validation methods are defined in paragraph 5.4.1 of WHC-CM-3-5, Section 12.5. Technical comments, if any, should be recorded in the facility specific comment/review record or on the back of this checklist.

1.	Can the procedure be performed in the sequence written?	☒ Yes	☐ No	☐ N/A
2.	Can the individual steps be performed?	☒ Yes	☐ No	☐ N/A
	• Each step specifically identified the action to be taken (such as open, shut, turn)	☒ Yes	☐ No	☐ N/A
	• Limitations are expressed quantitatively	☒ Yes	☐ No	☐ N/A
	• Equipment and parts are identified clearly and reflect exact equipment nomenclature	☒ Yes	☐ No	☐ N/A
	• Steps requiring sign-off are clearly delineated and adequate sign-off space provided	☒ Yes	☐ No	☐ N/A
	• The procedure accurately reflects the current configuration of the process or equipment	☒ Yes	☐ No	☐ N/A
	• The amount and level of information is adequate	☒ Yes	☐ No	☐ N/A
3.	Can the user locate and identify all equipment referred to in the procedure?	☒ Yes	☐ No	☐ N/A
4.	Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment lineups?	☒ Yes	☐ No	☐ N/A
	• Precautions to be observed?	☒ Yes	☐ No	☐ N/A
	• Plant, system, or equipment limitations?	☒ Yes	☐ No	☐ N/A
	• By part number or other unique nomenclature?	☒ Yes	☐ No	☐ N/A
5.	Can the user perform the procedure without obtaining additional information from persons or documents?	☐ Yes	☒ No	☐ N/A
	• If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently?	☒ Yes	☐ No	☐ N/A
6.	Does the procedure include adequate QA, Safety, Environmental, or HPT hold points?	☒ Yes	☐ No	☐ N/A

Validation Checklist
Sheet 2 of 2

Procedure No: EO-100-012 Rev.: C-0

Title: Operate Gc-Nu-Gc Cage and Examine Capsule

7.	Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs?	☒ Yes	☐ No	☐ N/A
	• In the correct order to perform the task?	☒ Yes	☐ No	☐ N/A
	• Missing?	☐ Yes	☒ No	☐ N/A
	• Detailed enough to allow performance without interpretation?	☒ Yes	☐ No	☐ N/A
	• Too detailed?	☐ Yes	☒ No	☐ N/A
8.	Are notes, cautions, or warnings placed directly ahead of the steps to which they apply?	☒ Yes	☐ No	☐ N/A
9.	Does procedure include signoff spaces for independent verifications?	☒ Yes	☐ No	☐ N/A
10.	Are graphs, charts, and tables adequate for readability and use?	☒ Yes	☐ No	☐ N/A
	• Are they compatible with the procedure?	☒ Yes	☐ No	☐ N/A
	• Can values be extracted or interpolated easily?	☒ Yes	☐ No	☐ N/A
	• Are units of scale and measurement useable?	☒ Yes	☐ No	☐ N/A
	• Are titles descriptive of contents and use?	☒ Yes	☐ No	☐ N/A
11.	Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations?	☒ Yes	☐ No	☐ N/A
12.	If any follow-up action, test, or procedure must be performed, is that action clearly identified?	☒ Yes	☐ No	☐ N/A
	• Are correct personnel specified?	☒ Yes	☐ No	☐ N/A
	• Are reporting chains specified correctly?	☒ Yes	☐ No	☐ N/A
	• Are actions or referenced procedures specified correctly?	☒ Yes	☐ No	☐ N/A
13.	Is the procedure updated to current guidelines?	☒ Yes	☐ No	☐ N/A
	• Technical guidelines (such as Tech Specs)	☐ Yes	☐ No	☒ N/A
	• Format editorial requirements	☐ Yes	☐ No	☒ N/A

Validated By: Lindy L Lammon (User - Print Name) Lindy Lammon (Signature) 1-31-96 (Date)

Concurred By: Paul T Seweresig (Technical Authority - Print Name) Paul T Seweresig (Signature) 01/31/96 (Date)

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

2.3.1 - July 15, 1996

Acceptance Criteria:

Evidence that current procedures for the cesium capsule return activities are approved.

Discussion:

As part of Checklist Item 2.2.2 the procedures required specifically for return of cesium capsules with the BUSS cask were identified. These procedures were used for each of the shipments of capsules from IOTECH and PNNL. All procedures are currently active. Some of these procedures have not been updated to reflect the reengineering organization and responsibility changes. This will be tracked and closed with Checklist Item 2.2.2.

Supporting Documentation:

See information used to close Checklist Item 2.2.2. Attached as part of that items closure documentation is a report showing the procedure revision status and the approval and validation documentation for each of these procedures.

Outstanding Items/Limitations:

None.

Completion: _____ Date: 7/12/96
L. D. Brist

Concurrence: _____ Date: 7/15/96
P. T. Saueressig

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

2.4.1

Acceptance Criteria:

Radiation Work Permits have been prepared and approved for the receipt of cesium capsules and are valid through the expected duration.

Discussion:

Only two Radiation Work Permits (RWPs) are required for cesium capsule receipt at WESF. The numbers of the two RWPs are B-424 and B-457. Other RWPs will be used for portions of evolutions, but the evolutions will be within the scope of RWPs which are required for other facility tasks.

WESF RWPs are prepared by the facility Radiological Control organization as required by the Hanford Site Radiation Control Manual (HSRCM), 10 CFR 835, WHC-IP-414, and WHC-IP-718. RWPs have a maximum life equal to the length of the task or up to 30 days, whichever is less. A program exists to ensure these RWPs will be renewed as required during this return task. Also, it is typical for a reissue of an existing RWP to be available within a few hours.

It is required of each radiation worker to be cognizant of RWP requirements. The worker is required to register at the facility control point and reviews the RWP at this time. The RWP contains the dose limits allowed, RCT coverage, dosimetry requirements and minimum protective equipment. The review and understanding of these requirements are documented by signing the RWP review sheet.

Supporting Documentation:

A copy of the request for these RWPs to be current by August 15, 1996 and previous copies of the two RWPs are attached. Each is one page long and one sided.

Outstanding Items/Limitations:

A punch list item as an additional check that these RWPs are reissued in August and again in September.

Completion: _____ Date: 7-23-96
B. M. Auckland/L. L. Nunn

Concurrence: _____ Date: 7/23/96
P. T. Saueressig

RWP REQUEST FORM (Type or Print)

Requesting Org.: 16E00 | [ ] New [x] Renewal | Previous RWP No.: B-424 rev.009

Prepared By: L. L. Nunn | Date: 7/23/96 | Phone: 372-0171

Work Location Area: WESF Bldg: 225B Room: Truck port Other:

Job Description: [ ] Cutting [ ] Grinding [ ] Welding [ ] Breaching Radioactive System
Receiving, shipping and inspection of BUSS cask.

Type of Work Station: [ ] Bench Top [ ] Fume Hood [ ] Hot Cell [ ] Glove Box [x] Other (list)
Contamination area

Primary Isotopes of Concern: [ ] MFP [ ] MAP [ ] Sr [x] Cs [ ] H3 [ ] U [ ] Pu [ ] Other

Work Package No.: [ ] Work Procedure/Instruction Attached

Date RWP Required By: 8/15/96 Estimated Work Completion Date: 10/15/96

Job Supervisor: P. T. Saueressig | Organization: Capsule Management Team | Phone No.: 372-0036

ALARA WORK SCOPE

Job Breakdown

Component Tasks	Group	No. (A)	Hours (B) Estimate	(HP Use Only) Dose Equiv.Rate (mrem/hr) (C) Estimate	(HP Use Only) Collective Dose Equiv. (person-mrem) (AxBxC) Estimate
1.Survey Buss cask in WESF truck port	54	1	1		
RCT support	04	2	1		
Total Estimated Collective Dose Equiv. (person-mrem)					
person-rem = person-mrem / 1000 =					

HP Use Only

ALARA Review Class is: [ ] 1 [ ] 2 [ ] 3

Request Received By: _____ Date: _____

RWP Prepared By: _____ Date: _____

Assigned RWP No.: _____

Comments:

ALARA Review Assigned To:

A-6000-517 (01/93) GEF026

RWP REQUEST FORM (Type or Print)

Requesting Org.: 16E00	[] New [x] Renewal	Previous RWP No.: B-457 rev.006	
Prepared By: L. L. Nunn		Date: 7/23/96	Phone: 372-0171

Work Location Area: WESF Bldg: 225B Room: G cell airlock Other:

Job Description: [] Cutting [] Grinding [] Welding [] Breaching Radioactive System
Read smear samples from BUSS cask capsules.

Type of Work Station: [] Bench Top [] Fume Hood [] Hot Cell [] Glove Box [X] Other (list)
Contamination area

Primary Isotopes of Concern: [] MFP [] MAP [] Sr [X] Cs [] H3 [] U [] Pu [] Other

Work Package No.: [] Work Procedure/Instruction Attached
Date RWP Required By: 8/15/96 Estimated Work Completion Date: 10/15/96

Job Supervisor:	Organization:	Phone No.:
P. T. Saueressig	Capsule Management Team	372-0036

ALARA WORK SCOPE

Job Breakdown

Component Tasks	Group	No. (A)	Hours (B) Estimate	(HP Use Only) Dose Equiv.Rate (mrem/hr) (C) Estimate	(HP Use Only) Collective Dose Equiv. (person-mrem) (AxBxC) Estimate
1.Survey Buss cask cesium capules for release to pool cells.	54	1	1		
Smear sample handling	04	1	1		
Total Estimated Collective Dose Equiv. (person-mrem)					
person-rem = person-mrem / 1000 =					

HP Use Only
ALARA Review Class is: [ ] 1 [ ] 2 [ ] 3
Request Received By: _____ Date: _____
RWP Prepared By: _____ Date: _____
Assigned RWP No.: _____
Comments:

ALARA Review Assigned To:

HANFORD RADIOLOGICAL WORK PERMIT

Contractor: WESTINGHOUSE HANFORD COMPANY

General [ ] / Job Specific [x]	Tech. Document No.	Location Code	RWP Number
	EO-906-003	63	B-457 Rev. 006

Start Date	End Date	Responsible Organization
04-11-96	05-11-96	Operations

Job Location: 200-E/225-B/G Cell pass through

Job Description and Type of Area: Read smear samples from BUSS cask capsules. Contamination Area.

Primary Isotope(s): [x] MFP [ ] MAP [x] Cs [x] Sr [ ] H-3 [ ] U [ ] Pu [ ] Other

Radiation Emitted	Estimated Dose Rates	Contamination Levels	Radiological Worker Training Req.
[ ] Alpha [x] Beta [x] Photons [ ] Neutrons	General Area: <5 mrem/h Maximum Contact: 50 mrem/h	Beta-gamma: <10,000 dpm/100 cm^2 Alpha: NA dpm/100 cm^2	I [ ] II [x]

Internal Dosimetry Requirements (for routine work under this RWP, except those entering for observation only)

[X] Annual Whole Body Count [ ] Lung Count [ ] Urinalysis Isotopes to Test for (if any):

MINIMUM RADIOLOGICAL PROTECTION REQUIREMENTS

HPT Coverage		Dosimetry	
	Continuous	x	HSD - TLD
SI5	Intermittent		HCND - TLD
	Start of Job	x	Pocket Dosimeter
	End of Job		Electronic Dosimeter
	Self Survey (if qualified)		Finger Rings
SI4	HPT Survey Required		Time Keeping
	Auto. Survey Device	SI1	Entry Control System
	See SI#		PNAD

MINIMUM PROTECTIVE EQUIPMENT

1	Coveralls		Shoe Covers
	Lab Coat	x	Canvas Boots
	Waterproof Suit	x	Rubber Overshoes
	Gortex Suit		Rubber Boots
	Cap	SI5	Full Face Respirator
1	Hood		PAPR
	Surgeon's Gloves		Supplied Air Respirator
	Leather Gloves		SCBA
x	Canvas & Surgeon's Gloves		Undressing Assistance
	Waterproof Gloves	SI2	Air Sampling Required
	No Personal Outer		ARM Required
x	Modesty Clothing		
	See SI#		See SI#

SPECIAL INSTRUCTIONS (SI)

1. All personnel performing work under this RWP will access the facility control point for entry requirements located at 225-B, room #105, PAX #270 or 372-0224.
2. This task requires an air sample of the breathing zone to verify airborne contamination levels while mask work is being done.
3. The following items shall void this RWP:
   a. Dose rates >5 mrem/hr.
   b. Removable contamination >50,000 dpm/100 sq.cm.
   c. Airborne contamination >1E-8 uCi/ml.
4. Self survey is allowed only if contamination levels are <10,000 dpm/100 sq. cm. and personnel are qualified. Verification surveys by Rad Control or personnel contamination monitors must be performed immediately after self survey.
5. The RCT may survey and downgrade G Cell sample port and airlock from Airborne Radioactivity status. Respiratory protection will be required until RCT verifies airborne radioactivity levels are <2E-10 uCi/ml.

ALARA Review: NO | Pre-Job Briefing: YES [ ] NO [x] | Post-Job ALARA Review Required: YES [ ] NO [x]

RWP Prepared By: BJ Judy	Phone: 2-0121	HPT Phone:
Line Mgt. Print: RD Pickett Sign:	Phone 2-0372	Date
RC Mgt. Print: RJ Williams Sign:	Phone 2-0343	Date
	Phone	Date
		Date:
		Date:

HANFORD RADIOLOGICAL WORK PERMIT

Contractor: WESTINGHOUSE HANFORD COMPANY

General [ ] / Job Specific [x]	Tech. Document No.	Location Code	RWP Number
	2B-95-00864	64	B-424 Rev. 009

Start Date	End Date	Responsible Organization
04-11-96	05-11-96	Operations

Job Location: 200-E/225-B/Truck port

Job Description and Type of Area: Receiving, shipping and inspection of BUSS casks. Contamination Area.

Primary Isotope(s): [x] MFP [ ] MAP [x] Cs [x] Sr [ ] H-3 [ ] U [ ] Pu [ ] Other

Radiation Emitted	Estimated Dose Rates	Contamination Levels	Radiological Worker Training Req.
[ ] Alpha [x] Beta [x] Photons [ ] Neutrons	General Area: <5 mrem/h Maximum Contact: 100 mrem/h	Beta-gamma: <1,000 dpm/100 cm^2 Alpha: NA dpm/100 cm^2	I [ ] II [x]

Internal Dosimetry Requirements (for routine work under this RWP, except those entering for observation only)
[x] Annual Whole Body Count [ ] Lung Count [ ] Urinalysis Isotopes to Test for (if any):

MINIMUM RADIOLOGICAL PROTECTION REQUIREMENTS

HPT Coverage		Dosimetry	
x	Continuous	x	HSD - TLD
	Intermittent		HCND - TLD
	Start of Job	x	Pocket Dosimeter
	End of Job		Electronic Dosimeter
SI4 &5	Self Survey (if qualified)		Finger Rings
	HPT Survey Required		Time Keeping
	Auto. Survey Device	SI1	Entry Control System
	See SI#		PNAD

MINIMUM PROTECTIVE EQUIPMENT

1	Coveralls	x	Shoe Covers
	Lab Coat	x	Canvas Boots
	Waterproof Suit	x	Rubber Overshoes
	Gortex Suit		Rubber Boots
	Cap	SI3	Full Face Respirator
1	Hood		PAPR
	Surgeon's Gloves		Supplied Air Respirator
	Leather Gloves		SCBA
x	Canvas & Surgeon's Gloves		Undressing Assistance
	Waterproof Gloves	SI3	Air Sampling Required
	No Personal Outer		ARM Required
x	Modesty Clothing		
	See SI#		See SI#

SPECIAL INSTRUCTIONS (SI)

1. All personnel performing work under this RWP will access the facility control point for entry requirements located at 225-B, room #105, PAX #270 or 372-0224.
2. Wind velocity should be taken into account before removing heat shield. Containment may be used if wind is restrictive.
3. Respiratory protection may be required for phases of work in the truck port, while on mask, an air sample of the breathing zone is required to verify airborne contamination levels.
4. Self survey is allowed only if contamination levels are <10,000 dpm/100 sq.cm. and personnel are qualified. Verification surveys by Rad Control or personnel contamination monitors must be performed immediately after self survey.
5. No SELF SURVEY is allowed if area has been established as an Airborne Area during the course of the task.
6. The following items shall void this RWP:
   a. Dose rates >5 mrem/hr.
   b. Removable contamination >50,000 dpm/100 sq.cm.
   c. Airborne contamination >1E-8 uCi/ml.

ALARA Review: NO | Pre-Job Briefing: YES [x] NO [ ] | Post-Job ALARA Review Required: YES [ ] NO [x]

RWP Prepared By: BJ Judy	Phone: 2-0121	HPT Phone:
Line Mgt. Print: RD Pickett Sign:	Phone 2-0372	Date
RC Mgt. Print: RJ Williams Sign:	Phone 2-0343	Date
	Phone	Date
A		Date:
R		Date:

WESF PREPAREDNESS FOR ARECO CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

3.1.1

Acceptance Criteria:

Documentation that identifies the number, discipline, qualification, and availability of the plant staff and matrix organizations required to assure readiness for cesium capsule return.

Discussion:

Based on capsule return experience from IOTECH the number, discipline, and qualifications (certifications) specifically required for capsule return are as follows:

Number required	Discipline	Qualifications required
4	Operators	• Byproducts Cask Handling
1	Power Operator	None identified
2	Millwright	None identified
1	Crane Operator	• WESF Crane Operator Qualification
1	Radiation Control Technician (RCT)	None identified
1	Exempt	• BUSS Cask Engineer Qualification
3	Riggers	None identified

Checklist item 3.2.1 identifies the specific training requirements for the individuals directly involved in the capsule return activities. The qualification listed above are required by operations and are above the standard training requirements.

The availability of personnel from teams and from other facilities are identified in checklist item 1.1.1.

Supporting Documentation:

See documentation attached to sections 1.1.1 and 3.2.1.

Outstanding Items/Limitations:

None.

Completion: P. T. Saueressig for Date: 7-10-96

Mgr. Approval: J. L. Pennock Date: 7-10-96

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

3.2.1

Acceptance Criteria:

Documentation that identifies the required training for the staff directly involved with the cesium capsule return activities (Operators, HPTs (RCTs), and crane operators for the tasks).

Discussion:

The information for preparedness item 3.1.1 also included the training specific to cesium capsule return for each discipline. See 3.1.1 for this information.

Supporting Documentation:

None.

Outstanding Items/Limitations:

None.

Completion: Donna M. Haggerty D. M. Haggerty Date: 7/26/96

Concurrence: Paul T. Saueressig P. T. Saueressig Date: 7/26/96

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

3.2.2

Acceptance Criteria:

Training records are available showing each individual's training participation and performance for requirements are valid through the expected duration.

Discussion:

Preparedness item 3.1.1 addressed the number, discipline, and qualification(s), and 1.1.1 and 1.3.1 address availability of plant staff especially those required from other teams. Item 1.3.1 has a Memorandum of Agreement signed by the three teams providing support to the Capsule Management Team during return operations at WESF. The minimum number of staff are trained for the qualifications specifically required for cesium capsule return.

Operators

Four operators are identified as requirement from past shipments. A minimum of 6 operators will be qualified for By Products Cask Handling thru the end of September. In addition, one more will not expire until after the critical first shipment is scheduled to be unloaded at WESF and cask is reassembled and shipped to ARECO.

Crane Operator

One crane operator is required. The facility's crane operator will be available per agreement letter attached to item 1.3.1. This crane operator has requalified for facility crane operation thru August 1997.

BUSS Cask Engineer

Three members of the Capsule Management team received training when ownership of the cask was being transferred to WESF. These engineers were each heavily involved with each of the 26 shipments made with this cask in the past two years. No additional training is required beyond the initial training and involvement in shipments to date.

Other Disciplines

No specialized training relating to cesium capsule return was identified beyond what is required to perform daily work at the facility.

Other Training

As an added precaution general training was checked. This training is what is required to perform routine facility work. The only general training which was expiring for several members of the cask handling team or needed from other teams is the Building Emergency Plan review.

Supporting Documentation:

See attached summaries of current training status.

Outstanding Items/Limitations:

~~None if Building Emergency Plan training is done.~~ See below MP 7/30/96

Completion: Donna M. Haggerty D. M. Haggerty Date: 7/26/96

Concurrence: Paul T. Saueressig P. T. Saueressig Date: 7/26/96

Primary Crew:
Facility Emergency and HAZARD information checklists for Buckland, Al Sandars, J.R. Walkup, D.A. Lawmon attached.

Backup Crew: Demeyer, Bennett, Ray Jamison outstanding.

M. M. Pereira 7/31/96

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96

[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE

****

* NOTE: If the course is no longer needed such as prior training *
* from a different area, that retrain date can be removed from *
* the employee file. Please use report TRI103R or TRI203R and *
* highlight the course(s) no longer applicable. After this report *
* is signed and dated by the appropriate manager, please forward *
* to TRAINING RECORDS, mail stop G6-60. *

****

65028 COOK, WILLIAM B ORG: W16E10 BLDG/AREA: 225B/200E

000001	HGET	09/15/95	09/15/96
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
00007G	FCLTY ORIENT-GROUT	03/25/88	
000076	FCLTY ORIENT - B PLANT	07/17/90	
000077	FCLTY ORIENT - TANK FARM	01/29/87	
000078	FCLTY ORIENT - S WASTE	01/29/87	
000080	SECURITY REFRESHER BRIEF	10/15/92	
000100	ESCORT TRAINING	06/16/93	
000140	HAZARDS RECOGNITION	07/25/94	
000142	SAFETY OBSERVER -MONTHLY	12/12/94	
000165	ASBESTOS GEN EMPL TRNG	06/16/93	
000385	OJT INSTRUCTOR	01/23/91	
000390	OJT TRAINING WORKSHOP	11/18/93	
000600	B PLNT/WESF OSR ORIENT	10/18/90	
001000	CONDUCT OF OPS - INTRO	02/04/92	
001005	OVERVIEW CONDUCT OPERTNS	04/01/94	
003000	LOCK & TAG - GENERAL	06/16/93	
003004	LOCK & TAG B-PLANT/WESF	10/09/89	
003022	LOCK & TAG - CUSTODIAL	02/25/91	
00303C	LOCK & TAG CHALLENGE	05/09/96	05/09/97
003035	LOCK & TAG AUTH WRKR	05/17/93	
003036	LOCK & TAG -REFRESHER '9	12/07/95	12/07/96
020003	RAD WORKER II RETRAIN	12/06/94	12/06/96
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	06/16/93	
020008	RAD JOB SPEC ORIENT	07/05/90	
020010	CRIT SAFETY - FISSILE	08/31/86	
020030	SCBA ANNUAL	06/01/94	06/01/95
020032	SCOTT SKAPAK-MSA PAPR	06/01/94	06/01/95
020040	DTPA ORIENTATION	11/07/86	
020041	BASIC RESP PROTECT TRNG	04/18/96	04/18/97

--- TRAINING RECORDS INFORMATION SYSTEM ---

WHC EMPLOYEE TRAINING

DATE GENERATED 07/08/96

[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
020044	QUANTITATIVE MASK FIT	04/18/96	04/18/97
020045	PERSONAL SELF SURVEYS	06/04/90	
020050	SELF MONITORING	02/16/95	02/16/97
02006B	HAZ COM/WST ORIENT	06/16/93	
02006D	CERTIFIED ASBESTOS WRKR	01/13/89	
02006F	FIRE EXITING SFTY ORIENT	06/16/93	
02006G	WASTE MANAGEMENT AWARENE	07/08/93	
02006H	HAZ MAT/WASTE JOB SPEC	04/19/91	
02006L	ASBESTOS CONTROL	04/24/90	
020060	HAZ WST SITE OPER RETRN	01/09/92	
020082	RAD EXPOSR TO UNBORN	05/16/90	
020100	PP-HAZWST SITE OPR-BASIC	03/07/90	
020101	SITE BASIC	01/23/90	
020107	BHVR BASED SAFETY TRNG	02/01/94	
020108	GENERAL EMP RAD RETRNG	06/16/93	
020109	GENERAL EMP RAD TRNG	06/16/93	
020130	CONFND SPC ENTRY (CSE)	02/01/95	02/01/97
020194	HEARING CONSERVATION	07/08/93	
020197	MEDIC FIRST AID - BASIC	10/22/93	
02028E	BLDG EMERG PLN REV CKLST	11/13/90	
020702	RAD WORKER I/II REFRESH	05/22/95	05/22/97
03E025	BLDG EMERG PLAN-0263 BPC	09/13/95	09/13/96
032020	8-HR HAZ WST RFRSHR	06/17/96	06/17/97
032030	8-HR HAZ WST RFRSHR W/SK	07/08/93	
034502	PERS SELF SURVEY-B PLANT	09/19/91	
034530	PERS SELF SURVEY - BETA	08/16/94	08/16/96
040784	BASIC CRANE/RIGGING SFTY	01/10/95	01/10/98
041810	FORK TRUCK OPR TRNG	08/28/90	
041890	FORK LIFT OPERATOR REQ	09/22/93	09/22/96
042720	AERIAL LIFT OPER TRNG	10/27/93	10/27/96
042810	LIGHT DUTY HOIST & RIGG	07/19/90	
044480	MEDIUM RISK ELECT SFTY	01/04/96	01/04/99
044580	AERIAL LIFT OJT EVAL TRN	10/28/93	10/28/96
044590	FORK LIFT OJT EVAL TRNG	10/28/93	
060510	GRCO-NPO	09/04/92	
060620	TF P/S PL SPEC-NPO	08/17/87	
060622	TF EP/APC-NPO PROC	06/29/88	
060662	TF CERT-ROUTINES	03/29/87	
060674	TF OC-CASS	01/04/88	
060820	WESF PL SPEC - NPO	11/07/90	
060823	WESF EP/APC-NPO	10/16/91	
060830	WESF-BY PROD CASK HNDLNG	12/14/90	
060835	WESF POOL CELL OPERATION	01/29/91	
060838	WESF AQUEOUS MAKEUP	10/22/90	
060839	WESF SOLID WASTE	11/15/91	
060840	WESF MANIPULATOR OPRATNS	09/21/92	
065911	MATHEMATICS	03/04/94	
065912	NPO CORE CHEMISTRY	03/11/94	
065914	NPO CORE ELECTRICAL	03/28/94	

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96
[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
065915	NPO CORE INSTRUMENTATION	04/01/94	
065917	NPO CORE MECHANICAL	03/21/94	
080915	RESOLVING EMP CONCERNS	09/15/95	
080940	TOTAL QUALITY AWARENESS	11/27/89	
080957	EMPLOYEE ASSISTANCE PROG	09/14/94	
084112	PERSONAL STYLES IN TEAMI	04/16/96	
100013	HAZ WST RETRN - VENDOR	05/11/95	05/11/96
120196	COMPUTR SECURITY AWARNS	05/01/92	
162234	WHC QUAL ASSURANCE PROG	12/06/88	
162236	QA PROG OVERVIEW (HGET)	06/16/93	
170057	QTRC - ASBESTOS REQUAL	12/04/95	01/13/97
170500	BASIC MEDIC FIRST AID	01/08/96	01/08/98
170656	HANDS-ON FIRE EXTINGSHR	02/15/96	02/15/97
400460	AMU OPERATIONS	04/27/93	
400470	WESF MANIPULATOR CERT	12/20/94	01/04/97
400480	STORAGE POOL OPERATIONS	09/14/95	09/20/97
400490	BY PRODUCTS CASK HANDLNG	02/22/96	02/22/98
400500	BUILDING SURVEILLANCE	11/15/94	11/15/96
400600	B PLANT EP/APC - PROCESS	09/13/95	09/13/96
400700	FAC RE-ORIENT/B-PLANT	09/15/95	09/15/97
400800	B PLANT/WESF LOCK & TAG	01/29/92	
400850	B PLANT SELF SURVEY TRNG	08/16/94	08/16/96
401410	RAD CON MANUAL TRAINING	02/14/96	
404140	PLANT SPECIFIC-NPO	09/24/92	
404150	WESF OPERATOR EP/APC	05/06/94	05/06/95
404190	WASTE CASK OPS - WESF	05/17/96	05/17/98
405010	C/O - SHIFT ROUTINES	09/05/91	
405020	C/O CONTROL AREA ACT	11/06/91	
405025	C/O - COMMUNICATIONS	10/09/91	
405030	C/O - CNTRL SHIFT TRNG	12/15/91	
405050	C/O - LOCKOUTS & TAGOUTS	01/29/92	
405060	CO LOG KEEPING	04/23/92	
405065	C/O OPERATIONS TURNOVER	11/06/91	
405070	CO OPS ASPCT FAC CHEM	04/23/92	
405075	C/O REQUIRED READING	12/15/91	
405080	C/O - ORDERS TO OPERATRS	10/09/91	
800658	RAD WORK TEAM	11/28/95	
990107	EMPLOYEE INDOCTRINATION	11/14/86	

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96
[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
	**********NOTE: If the course is no longer needed such as prior training from a different area, that retrain date can be removed from the employee file. Please use report TRI103R or TRI203R and highlight the course(s) no longer applicable. After this report is signed and dated by the appropriate manager, please forward to TRAINING RECORDS, mail stop G6-60.**********		
64056	GARMAN, GLENN L ORG: W16E10 BLDG/AREA: M0863/200E		
000001	HGET	06/10/96	06/10/97
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
000076	FCLTY ORIENT - B PLANT	05/25/90	
000080	SECURITY REFRESHER BRIEF	05/28/92	
000100	ESCORT TRAINING	05/07/93	
000165	ASBESTOS GEN EMPL TRNG	05/07/93	
000385	OJT INSTRUCTOR	05/19/87	
000390	OJT TRAINING WORKSHOP	11/18/93	
000600	B PLNT/WESF OSR ORIENT	09/26/90	
001000	CONDUCT OF OPS - INTRO	02/05/92	
001005	OVERVIEW CONDUCT OPERTNS	09/02/94	
003000	LOCK & TAG - GENERAL	05/07/93	
003004	LOCK & TAG B-PLANT/WESF	10/09/89	
003022	LOCK & TAG - CUSTODIAL	02/25/91	
003035	LOCK & TAG AUTH WRKR	04/21/93	
003036	LOCK & TAG -REFRESHER '9	05/09/96	05/09/97
020003	RAD WORKER II RETRAIN	03/05/96	03/05/98
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	05/08/92	
020008	RAD JOB SPEC ORIENT	04/23/92	
020030	SCBA ANNUAL	12/13/95	12/13/96
020031	SCBA QUARTERLY	08/05/92	
020032	SCOTT SKAPAK-MSA PAPR	12/13/95	12/13/96
020040	DTPA ORIENTATION	03/01/94	
020041	BASIC RESP PROTECT TRNG	06/05/96	06/05/97
020044	QUANTITATIVE MASK FIT	06/05/96	06/05/97
020045	PERSONAL SELF SURVEYS	05/25/90	
020050	SELF MONITORING	03/30/95	03/30/97
02006B	HAZ COM/WST ORIENT	05/07/93	
02006F	FIRE EXITING SFTY ORIENT	05/07/93	
02006G	WASTE MANAGEMENT AWARENE	11/17/93	

--- TRAINING RECORDS INFORMATION SYSTEM ---
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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
02006H	HAZ MAT/WASTE JOB SPEC	02/14/91	
02006L	ASBESTOS CONTROL	04/18/88	
020060	HAZ WST SITE OPER RETRN	11/08/91	
020082	RAD EXPOSR TO UNBORN	05/21/90	
020100	PP-HAZWST SITE OPR-BASIC	12/22/89	
020101	SITE BASIC	12/22/89	
020107	BHVR BASED SAFETY TRNG	02/08/94	
020108	GENERAL EMP RAD RETRNG	05/07/93	
020130	CONFND SPC ENTRY (CSE)	05/16/95	05/16/97
020194	HEARING CONSERVATION	11/17/93	
02028D	BOMB SEARCH TEAM TRNG	09/09/83	
02028E	BLDG EMERG PLN REV CKLST	11/13/90	
020285	CONTROLLER EVAL TRAINING	07/12/95	07/12/97
020702	RAD WORKER I/II REFRESH	05/22/95	05/22/97
03E025	BLDG EMERG PLAN-0263 BPC	05/01/96	05/01/97
032030	8-HR HAZ WST RFRSHR W/SK	11/17/93	
034502	PERS SELF SURVEY-B PLANT	09/19/91	
034530	PERS SELF SURVEY - BETA	05/29/96	05/29/98
035100	CONTAINER WASTE MGT. INI	01/18/96	01/18/97
040784	BASIC CRANE/RIGGING SFTY	08/15/90	
040788	BASIC CRANE & RIGGING RE	06/03/93	
042350	CRANE TRNG UPDATE	09/20/88	
042720	AERIAL LIFT OPER TRNG	10/27/93	10/27/96
042810	LIGHT DUTY HOIST & RIGG	08/15/90	
043930	LP GAS BOTTLE REFILLING	06/11/93	
044470	FORKLIFT OPERATNL SAFETY	03/04/94	03/04/97
044480	MEDIUM RISK ELECT SFTY	03/20/96	03/20/99
044680	OJT EVAL CKLST AERIAL LF	01/12/95	09/30/96
060510	GRCO-NPO	12/01/92	
060760	COND IND WTR HAMMER SFTY	11/15/94	11/15/95
060820	WESF PL SPEC - NPO	10/18/90	
060823	WESF EP/APC-NPO	06/03/91	
060830	WESF-BY PROD CASK HNDLNG	10/12/90	
060833	WESF - BLDG SURVEILLANCE	10/23/90	
060835	WESF POOL CELL OPERATION	04/24/91	
060838	WESF AQUEOUS MAKEUP	06/12/90	
060839	WESF SOLID WASTE	05/17/91	
060840	WESF MANIPULATOR OPRATNS	01/08/92	
065911	MATHEMATICS	08/05/94	
065912	NPO CORE CHEMISTRY	03/06/95	
065914	NPO CORE ELECTRICAL	08/19/94	
065915	NPO CORE INSTRUMENTATION	08/25/94	
065917	NPO CORE MECHANICAL	03/21/95	
080915	RESOLVING EMP CONCERNS	06/13/95	
080940	TOTAL QUALITY AWARENESS	09/12/89	
080957	EMPLOYEE ASSISTANCE PROG	06/14/94	
084112	PERSONAL STYLES IN TEAMI	05/10/96	
100013	HAZ WST RETRN - VENDOR	12/13/95	12/13/96
120196	COMPUTR SECURITY AWARNS	05/08/92	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
162234	WHC QUAL ASSURANCE PROG	12/05/88	
162236	QA PROG OVERVIEW (HGET)	05/07/93	
170656	HANDS-ON FIRE EXTINGSHR	02/15/96	02/15/97
300700	SW OPERATIONS FAC ORIENT	06/13/95	06/13/97
400460	AMU OPERATIONS	04/26/93	
400470	WESF MANIPULATOR CERT	05/13/96	05/13/98
400480	STORAGE POOL OPERATIONS	05/30/95	05/30/97
400490	BY PRODUCTS CASK HANDLNG	02/20/96	02/20/98
400500	BUILDING SURVEILLANCE	11/07/94	11/08/96
400600	B PLANT EP/APC - PROCESS	05/01/96	05/01/97
400700	FAC RE-ORIENT/B-PLANT	06/10/96	06/10/98
400710	FACILITY ORIENT- INITIAL	12/16/92	
400750	B PLANT/WESF OSR ORIENT	11/16/92	
400800	B PLANT/WESF LOCK & TAG	01/30/92	
400850	B PLANT SELF SURVEY TRNG	05/29/96	05/29/98
404140	PLANT SPECIFIC-NPO	10/22/92	
404150	WESF OPERATOR EP/APC	04/29/94	04/29/95
404190	WASTE CASK OPS - WESF	07/25/95	07/25/97
405010	C/O - SHIFT ROUTINES	09/11/91	
405020	C/O CONTROL AREA ACT	11/07/91	
405025	C/O - COMMUNICATIONS	10/10/91	
405050	C/O - LOCKOUTS & TAGOUTS	01/30/92	
405060	CO LOG KEEPING	04/23/92	
405065	C/O OPERATIONS TURNOVER	11/07/91	
405070	CO OPS ASPCT FAC CHEM	04/23/92	
405080	C/O - ORDERS TO OPERATRS	10/10/91	
405085	CO OPERATIONS PROCEDURES	12/14/92	
800658	RAD WORK TEAM	12/05/95	
990086	ESCORT RETRNG	04/23/87	
990833	WESF OC-BLDG SURV	03/05/87	
990834	WESF OC-SAMPLING	03/05/87	
990841	WESF OC-CLSDLP COOLSYS	03/12/87	
991598	TILT POUR I	07/25/78	
991599	TILT POUR II	08/02/78	
991600	CLOSED LOOP COLNG SYS	08/22/78	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE

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* NOTE: If the course is no longer needed such as prior training *
* from a different area, that retrain date can be removed from *
* the employee file. Please use report TRI103R or TRI203R and *
* highlight the course(s) no longer applicable. After this report *
* is signed and dated by the appropriate manager, please forward *
* to TRAINING RECORDS, mail stop G6-60. *

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69798 LANMAN, LINDY L ORG: W16E10 BLDG/AREA: 225B/200E

000001	HGET	11/06/95	11/06/96
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
000068	FCLTY ORIENT - OUTER D&D	02/13/90	
000070	FCLTY ORIENT - PFP	11/14/83	
000072	FCLTY ORIENT - PUREX	09/30/83	
000074	FCLTY ORIENT - T PLANT	05/22/90	
000078	FCLTY ORIENT - S WASTE	05/22/90	
000080	SECURITY REFRESHER BRIEF	10/22/93	10/22/94
000100	ESCORT TRAINING	10/22/93	
000165	ASBESTOS GEN EMPL TRNG	10/22/93	
000385	OJT INSTRUCTOR	08/03/92	
000390	OJT TRAINING WORKSHOP	04/03/96	
000650	HEPA VACUUM OPER QUAL	12/09/92	
001004	GOCO PRINCIPLES OF OPER.	01/07/92	
001005	OVERVIEW CONDUCT OPERTNS	05/15/91	
003000	LOCK & TAG - GENERAL	10/22/93	
003014	LOCK & TAG - IFS&M SPEC	06/12/90	
003022	LOCK & TAG - CUSTODIAL	02/12/91	
003030	LOCK & TAG REFRESHER	02/13/92	
003032	LOCK & TAG QUAL CARD OJT	04/09/92	
003035	LOCK & TAG AUTH WRKR	01/26/93	
003036	LOCK & TAG -REFRESHER '9	06/08/95	06/08/96
010122	JCS VIDEO/VIEWGRAPH	11/19/90	
020003	RAD WORKER II RETRAIN	01/23/95	01/23/97
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	10/22/93	
020008	RAD JOB SPEC ORIENT	05/09/91	
020010	CRIT SAFETY - FISSILE	02/01/90	
020011	CRIT SAFETY UPDATE	12/09/86	
020018	CRIT SAFETY 6 MO UPDATE	03/08/88	
020030	SCBA ANNUAL	03/17/88	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
020032	SCOTT SKAPAK-MSA PAPR	12/14/95	12/14/96
02004C	BASIC RESP PROT REFRESH	12/13/95	12/13/96
020040	DTPA ORIENTATION	09/25/85	
020041	BASIC RESP PROTECT TRNG	12/13/94	12/13/95
020044	QUANTITATIVE MASK FIT	12/13/95	12/13/96
020045	PERSONAL SELF SURVEYS	02/28/90	
020050	SELF MONITORING	05/13/93	
020059	HAZ MATERIALS OPER. TRNI	03/28/96	03/28/98
02006B	HAZ COM/WST ORIENT	10/22/93	
02006F	FIRE EXITING SFTY ORIENT	10/22/93	
02006G	WASTE MANAGEMENT AWARENE	11/22/93	
02006H	HAZ MAT/WASTE JOB SPEC	02/27/91	
02006L	ASBESTOS CONTROL	08/03/92	
020060	HAZ WST SITE OPER RETRN	11/22/91	
020082	RAD EXPOSR TO UNBORN	10/31/90	
020107	BHVR BASED SAFETY TRNG	08/16/94	
020108	GENERAL EMP RAD RETRNG	10/22/93	
020109	GENERAL EMP RAD TRNG	10/22/93	
020123	CPR - INITIAL	03/06/90	
020130	CONFND SPC ENTRY (CSE)	02/01/95	02/01/97
020157	N-CELL ACS CNTRL TQS	11/07/84	
020194	HEARING CONSERVATION	11/22/93	
020196	NOISE CONTROL REQUAL	11/22/93	
020202	WASTE SITE FIELD EXP	09/19/90	
02028E	BLDG EMERG PLN REV CKLST	02/12/91	
020410	FIRE EXTINGUISHER DEMO	11/19/86	
020702	RAD WORKER I/II REFRESH	02/26/96	02/26/98
03E025	BLDG EMERG PLAN-0263 BPC	05/01/96	05/01/97
03E048	BLDG EMERG PLAN- T PLANT	04/22/93	
03E832	BLDG EMERG PLAN - 200D/D	02/23/93	
03E856	BLDG EMERG PLAN - 212N/R	02/23/93	
032030	8-HR HAZ WST RFRSHR W/SK	11/22/93	
034520	PERS SELF SURVEY - ALPHA	03/23/92	
034530	PERS SELF SURVEY - BETA	01/30/96	01/30/98
040784	BASIC CRANE/RIGGING SFTY	12/08/93	12/08/96
041810	FORK TRUCK OPR TRNG	10/21/92	
041890	FORK LIFT OPERATOR REQ	10/19/95	10/19/98
042720	AERIAL LIFT OPER TRNG	08/11/95	08/11/98
044480	MEDIUM RISK ELECT SFTY	04/18/96	04/18/99
056002	WASTE MGMNT PKG STORAGE	10/30/92	
060042	WIPP ORIENTATION	09/10/86	
060506	GRCO-30 MO	03/05/84	
060510	GRCO-NPO	03/25/92	
060760	COND IND WTR HAMMER SFTY	06/29/95	06/29/96
061010	PUREX PL SPEC-NPO	02/27/86	
061022	PUREX EP/APC-NPO	01/21/87	
061040	PUREX OC-CENTRAL CONTROL	11/14/83	
061045	PUREX OC-HOOD	02/19/86	
061046	PUREX-HEAD END CONTROL	10/18/83	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
061049	PUREX-SAMPLING	02/06/86	
061050	PUREX-AMU	02/10/86	
061210	D&D PL SPEC-NPO	03/08/90	
061211	D&D EP/APC NPO	01/14/91	
061218	D&D OC-RAD AREAS	01/15/91	
061502	T PLNT OC - SURVEILLANCE	01/15/91	
065911	MATHEMATICS	06/07/93	
065912	NPO CORE CHEMISTRY	06/14/93	
065914	NPO CORE ELECTRICAL	06/25/93	
065915	NPO CORE INSTRUMENTATION	07/01/93	
065917	NPO CORE MECHANICAL	06/21/93	
080915	RESOLVING EMP CONCERNS	11/06/95	
080940	TOTAL QUALITY AWARENESS	08/10/90	
080957	EMPLOYEE ASSISTANCE PROG	01/12/95	
084112	PERSONAL STYLES IN TEAMI	05/10/96	
090675	ANNUAL PCB TRAINING	10/14/92	
100012	HAZ WST SITE-40HR VENDOR	11/06/87	
100013	HAZ WST RETRN - VENDOR	12/14/95	12/14/96
120196	COMPUTR SECURITY AWARNS	10/08/92	
162234	WHC QUAL ASSURANCE PROG	12/05/88	
162236	QA PROG OVERVIEW (HGET)	10/22/93	
170656	HANDS-ON FIRE EXTINGSHR	05/16/96	05/16/97
400470	WESF MANIPULATOR OPERATO	03/08/96	03/08/98
400480	WESF STORAGE POOL OPERAT	05/31/96	05/31/98
400490	BY PRODUCTS CASK HANDLNG	02/14/96	02/14/98
400500	WESF SURVEILLANCE OPERAT	09/26/95	09/27/97
400530	WESF SYSTEMS QUAL	03/08/94	
400600	B PLANT EP/APC - PROCESS	05/01/96	05/01/97
400700	FAC RE-ORIENT/B-PLANT	11/06/95	11/06/97
400710	FACILITY ORIENT- INITIAL	05/12/93	
400850	B PLANT SELF SURVEY TRNG	01/30/96	01/30/98
401410	RAD CON MANUAL TRAINING	02/26/96	
404150	WESF OPERATOR EP/APC	01/27/94	01/27/95
404190	WASTE CASK OPS - WESF	08/03/95	08/03/97
550700	ENV REST OP FAC ORIENT	03/25/93	
551040	PLANT SPECIFIC - NPO	03/18/92	
551800	PIC QUAL PROGRAM	11/04/92	
800658	RAD WORK TEAM	11/30/95	
990086	ESCORT RETRNG	07/20/87	
990101	NEW EMPLYE ORIENT	11/03/82	
991048	PROCS SAMPLNG/HANDLNG	05/27/83	
991055	PUREX OC-PU LINE DRY	09/06/83	
991056	PUREX OC-PU LINE WET	09/06/83	

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	COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
		********** NOTE: If the course is no longer needed such as prior training from a different area, that retrain date can be removed from the employee file. Please use report TRI103R or TRI203R and highlight the course(s) no longer applicable. After this report is signed and dated by the appropriate manager, please forward to TRAINING RECORDS, mail stop G6-60. **********		
56639	SHEPARD, ROY A	ORG: W16E10 BLDG/AREA: 225B/200E		
	000001	HGET	03/18/96	03/18/97
	Incl:	000165 - Asbestos Gen Empl Trng		
		003000 - Lock & Tag - General		
		020005 - Gen Emp Criticality Orie		
		02006B - Haz Com/Wst Orient		
		02006F - Fire Exting Sfty Orient		
		020108 - General Emp Rad Retrng		
		020196 - Noise Control Requal		
		162236 - QA Prog Overview (HGET)		
	000062	100 K AREA FAC ORIENT	03/21/95	
	000079	COMPREHENSIVE SEC BRIEF	09/08/93	
	000080	SECURITY REFRESHER BRIEF	03/21/91	
	000087	INITIAL SECURITY BRIEF	01/17/91	
	Incl:	120196 - Computr Securty Awarenes		
	000100	ESCORT TRAINING	04/13/93	
	000165	ASBESTOS GEN EMPL TRNG	04/13/93	
	000330	QA PROGRAM OVERVIEW	02/19/88	
	000385	OJT INSTRUCTOR	08/10/92	
	000650	HEPA VACUUM OPER QUAL	10/29/92	
	000705	TF CONDUCT OF OPERATIONS	01/23/91	
	000850	RWP FAMILIARIZATION	01/21/90	
	001004	GOCO PRINCIPLES OF OPER.	01/07/92	
	001005	OVERVIEW CONDUCT OPERTNS	12/03/93	
	003000	LOCK & TAG - GENERAL	04/13/93	
	003008	LOCK & TAG - PUREX	11/15/88	
	003022	LOCK & TAG - CUSTODIAL	02/12/91	
	003035	LOCK & TAG AUTH WRKR	03/26/93	
	003036	LOCK & TAG -REFRESHER '9	05/13/96	05/13/97
	010110	JCS PERSON IN CHARGE	02/12/92	
	020001	RAD WRKR TRNG II - INIT	02/11/91	
	Incl:	020040 - DTPA Orientation		
	020003	RAD WORKER II RETRAIN	03/16/95	03/16/97
	Incl:	020040 - DTPA Orientation		
	020005	GEN EMP CRITICALITY ORIE	03/18/92	
	020007	RAD SFTY TRNG-100N	06/05/87	
	020008	RAD JOB SPEC ORIENT	02/12/91	
	020010	CRIT SAFETY - FISSILE	08/04/88	
	020022	CRIT SFTY-100N FISSILE	01/15/88	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
020023	CRIT SFTY-100N FSSL REQL	01/15/88	
020029	RESP PROTCTION CERT-100N	04/10/87	
020032	SCOTT SKAPAK-MSA PAPR	08/18/95	08/18/96
02004C	BASIC RESP PROT REFRESH	03/07/96	03/07/97
020040	DTPA ORIENTATION	12/06/89	
020041	BASIC RESP PROTECT TRNG	03/08/95	03/08/96
020044	QUANTITATIVE MASK FIT	03/07/96	03/07/97
020050	SELF MONITORING	01/22/91	
02006A	HSO	01/16/91	
Incl:	000087 - Initial Security Brief		
	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020109 - General Emp Rad Retrng		
	080915 - Resolving Emp Concerns		
	080940 - Total Quality Awareness		
	120196 - Computr Securty Awarenes		
02006B	HAZ COM/WST ORIENT	01/16/91	
02006D	CERTIFIED ASBESTOS WRKR	09/08/89	
02006F	FIRE EXITING SFTY ORIENT	04/13/93	
02006G	WASTE MANAGEMENT AWARENE	07/15/93	
02006H	HAZ MAT/WASTE JOB SPEC	02/27/91	
02006L	ASBESTOS CONTROL	03/20/92	
02006Z	HAZWST SITE SPECFIC 100N	05/06/88	
020089	DEFENSIVE DRIVING	12/13/91	
020090	DRIVR ENGRY CONSERVATION	12/13/91	
020100	PP-HAZWST SITE OPR-BASIC	11/10/89	
020101	SITE BASIC	11/10/89	
020107	BHVR BASED SAFETY TRNG	01/11/94	
020108	GENERAL EMP RAD RETRNG	04/13/93	
020123	CPR - INITIAL	03/20/91	
020130	CONFND SPC ENTRY (CSE)	03/04/94	03/04/96
020191	COMPRESSED GAS CYLINERS	07/26/88	
020192	CONFINED SPACES	07/26/88	
020193	HEAT STRESS PREVENTION	07/26/88	
020194	HEARING CONSERVATION	07/15/93	
020195	SOLVENTS	07/26/88	
020197	MEDIC FIRST AID - BASIC	06/05/92	
020200	PP-HAZWST SITE OPR-ADV	04/24/91	
020201	WASTE SITE - ADVANCED	04/03/91	
020202	WASTE SITE FIELD EXP	04/24/91	
02028E	BLDG EMERG PLN REV CKLST	03/27/91	
020332	CRIT PUREX QTRLY - FSSL	06/06/89	
020702	RAD WORKER I/II REFRESH	05/22/95	05/22/97
03E025	BLDG EMERG PLAN-0263 BPC	02/13/96	02/13/97
032020	8-HR HAZ WST RFRSHR	09/23/94	09/23/95
032030	8-HR HAZ WST RFRSHR W/SK	07/15/93	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
034520	PERS SELF SURVEY - ALPHA	10/14/93	10/14/95
034530	PERS SELF SURVEY - BETA	08/16/94	08/16/96
040784	BASIC CRANE/RIGGING SFTY	01/06/94	01/06/97
041810	FORK TRUCK OPR TRNG	03/19/91	
041890	FORK LIFT OPERATOR REQ	03/28/94	03/28/97
044480	MEDIUM RISK ELECT SFTY	04/25/96	04/25/99
044670	EQUIP SPEC OJT FORK LIFT	04/22/94	03/28/97
056002	WASTE MGMNT PKG STORAGE	11/03/92	
060042	WIPP ORIENTATION	08/09/88	
060502	GRCO-OT	08/05/88	
060506	GRCO-30 MO	08/08/88	
060508	GRCO-42 MO	03/31/89	
060760	COND IND WTR HAMMER SFTY	06/29/95	06/29/96
061006	PUREX PL SPEC-30 MO	08/26/88	
061008	PUREX PL SPEC-42 MO	03/30/89	
061049	PUREX-SAMPLING	12/02/88	
061050	PUREX-AMU	12/01/88	
061051	PUREX SOLID WASTE	12/16/88	
061084	PUREX/UO3 OPS-CNFG CNTRL	11/22/89	
061201	IFS&M QUAL TRAINING	01/24/91	
065911	MATHEMATICS	11/05/93	
065912	NPO CORE CHEMISTRY	11/12/93	
065914	NPO CORE ELECTRICAL	11/18/93	
065915	NPO CORE INSTRUMENTATION	11/24/93	
065917	NPO CORE MECHANICAL	12/03/93	
080810	COM SKILLS WORKSHOP	12/18/91	
080915	RESOLVING EMP CONCERNS	03/21/95	
080940	TOTAL QUALITY AWARENESS	11/11/91	
080957	EMPLOYEE ASSISTANCE PROG	03/09/94	
090675	ANNUAL PCB TRAINING	10/14/92	
100013	HAZ WST RETRN - VENDOR	08/18/95	08/18/96
120196	COMPUTR SECURITY AWARNS	04/13/93	
162236	QA PROG OVERVIEW (HGET)	04/13/93	
170055	QTRC - ASBESTOS WORKER	05/17/91	
170057	QTRC - ASBESTOS REQUAL	04/11/94	04/11/95
170612	YOUR HEALTHY BACK	06/03/93	
170656	HANDS-ON FIRE EXTINGSHR	02/27/96	02/27/97
400470	WESF MANIPULATOR CERT	09/19/94	09/19/96
400480	STORAGE POOL OPERATIONS	05/13/96	05/13/98
400490	BY PRODUCTS CASK HANDLNG	11/03/94	11/09/96
400500	BUILDING SURVEILLANCE	04/15/96	04/15/98
400530	WESF SYSTEMS QUAL	03/09/94	
400600	B PLANT EP/APC - PROCESS	02/13/96	02/13/97
400700	FAC RE-ORIENT/B-PLANT	03/18/96	03/18/98
400710	FACILITY ORIENT- INITIAL	09/22/93	09/22/95
400850	B PLANT SELF SURVEY TRNG	08/16/94	08/16/96
401410	RAD CON MANUAL TRAINING	02/26/96	
404150	WESF OPERATOR EP/APC	02/28/94	02/28/95
550700	ENV REST OP FAC ORIENT	03/25/93	

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96

[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
800658	RAD WORK TEAM	11/30/95	
995026	DRIVER AWARENESS	02/28/86	

--- TRAINING RECORDS INFORMATION SYSTEM ---
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* to TRAINING RECORDS, mail stop G6-60. *
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64067 WABAUNSEE, JAMES E ORG: W16E10 BLDG/AREA: M0863/200E

000001	HGET	09/21/95	09/21/96
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
00007G	FCLTY ORIENT-GROUT	03/25/88	
000076	FCLTY ORIENT - B PLANT	12/20/90	
000077	FCLTY ORIENT - TANK FARM	03/25/87	
000078	FCLTY ORIENT - S WASTE	03/25/87	
000080	SECURITY REFRESHER BRIEF	10/27/93	
000100	ESCORT TRAINING	10/27/93	
000140	HAZARDS RECOGNITION	07/25/94	
000142	SAFETY OBSERVER -MONTHLY	10/25/94	
000165	ASBESTOS GEN EMPL TRNG	10/27/93	
000385	OJT INSTRUCTOR	02/25/93	
000600	B PLNT/WESF OSR ORIENT	11/19/90	
001000	CONDUCT OF OPS - INTRO	02/04/92	
001005	OVERVIEW CONDUCT OPERTNS	02/18/94	
003000	LOCK & TAG - GENERAL	10/27/93	
003004	LOCK & TAG B-PLANT/WESF	01/22/90	
003022	LOCK & TAG - CUSTODIAL	03/13/91	
003035	LOCK & TAG AUTH WRKR	04/28/93	
003036	LOCK & TAG -REFRESHER '9	05/16/96	05/16/97
~020003	RAD WORKER II RETRAIN	12/12/94	12/12/96
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	10/27/93	
020008	RAD JOB SPEC ORIENT	12/04/90	
020030	SCBA ANNUAL	01/30/95	01/30/96
020032	SCOTT SKAPAK-MSA PAPR	01/30/95	01/30/96
02004C	BASIC RESP PROT REFRESH	02/08/96	02/08/97
020041	BASIC RESP PROTECT TRNG	02/14/95	02/14/96
020044	QUANTITATIVE MASK FIT	02/08/96	02/08/97
020045	PERSONAL SELF SURVEYS	06/04/90	
020050	SELF MONITORING	03/16/95	03/16/97

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
02006B	HAZ COM/WST ORIENT	10/27/93	
02006D	CERTIFIED ASBESTOS WRKR	06/26/87	
02006F	FIRE EXITING SFTY ORIENT	10/27/93	
02006G	WASTE MANAGEMENT AWARENE	03/02/94	
02006H	HAZ MAT/WASTE JOB SPEC	02/14/91	
02006L	ASBESTOS CONTROL	06/26/87	
020060	HAZ WST SITE OPER RETRN	12/20/91	
020068	BASIC HAZ WST TRNG - MOD	01/10/96	01/10/98
020082	RAD EXPOSR TO UNBORN	05/30/90	
020089	DEFENSIVE DRIVING	06/14/88	
020100	PP-HAZWST SITE OPR-BASIC	01/12/90	
020101	SITE BASIC	01/12/90	
020107	BHVR BASED SAFETY TRNG	01/11/94	
020108	GENERAL EMP RAD RETRNG	10/27/93	
020109	GENERAL EMP RAD TRNG	10/27/93	
020130	CONFND SPC ENTRY (CSE)	05/20/96	05/20/98
020194	HEARING CONSERVATION	03/02/94	
020196	NOISE CONTROL REQUAL	03/02/94	
02028E	BLDG EMERG PLN REV CKLST	11/13/90	
020702	RAD WORKER I/II REFRESH	01/09/96	01/09/98
03E025	BLDG EMERG PLAN-0263 BPC	06/07/96	06/07/97
032030	8-HR HAZ WST RFRSHR W/SK	03/02/94	
034502	PERS SELF SURVEY-B PLANT	08/29/91	
034530	PERS SELF SURVEY - BETA	05/29/96	05/29/98
035100	CONTAINER WASTE MGT. INI	02/01/96	02/01/97
040784	BASIC CRANE/RIGGING SFTY	09/09/93	09/09/96
041810	FORK TRUCK OPR TRNG	09/25/90	
041890	FORK LIFT OPERATOR REQ	08/11/93	08/11/96
042720	AERIAL LIFT OPER TRNG	09/30/93	09/30/96
042810	LIGHT DUTY HOIST & RIGG	08/15/90	
044670	EQUIP SPEC OJT FORK LIFT	07/18/94	07/18/97
044680	OJT EVAL CKLST AERIAL LF	01/12/95	10/27/96
060510	GRCO-NPO	12/13/90	
060620	TF P/S PL SPEC-NPO	05/09/88	
060622	TF EP/APC-NPO PROC	05/12/88	
060662	TF CERT-ROUTINES	05/24/87	
060678	TF OC SALTWELL SYSTEM	07/19/87	
060685	TF OC-DMRHF	04/20/88	
060687	TF OC-GTF	05/18/88	
060760	COND IND WTR HAMMER SFTY	02/17/95	02/17/96
060820	WESF PL SPEC - NPO	12/13/90	
060823	WESF EP/APC-NPO	12/13/91	
060830	WESF-BY PROD CASK HNDLNG	03/08/91	
060833	WESF - BLDG SURVEILLANCE	12/06/90	
060835	WESF POOL CELL OPERATION	12/03/90	
060838	WESF AQUEOUS MAKEUP	10/15/92	
060839	WESF SOLID WASTE	05/17/91	
060840	WESF MANIPULATOR OPRATNS	11/20/90	
065911	MATHEMATICS	01/21/94	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
065912	NPO CORE CHEMISTRY	01/28/94	
065914	NPO CORE ELECTRICAL	02/04/94	
065915	NPO CORE INSTRUMENTATION	02/18/94	
065917	NPO CORE MECHANICAL	02/11/94	
080915	RESOLVING EMP CONCERNS	09/21/95	
080940	TOTAL QUALITY AWARENESS	11/30/89	
080957	EMPLOYEE ASSISTANCE PROG	10/20/94	
084050	MAKING THE DIFFERENCE	02/06/96	
084052	WORKING IN TEAMS	02/07/96	
084112	PERSONAL STYLES IN TEAMI	02/06/96	
100013	HAZ WST RETRN - VENDOR	12/13/95	12/13/96
120196	COMPUTR SECURITY AWARNS	10/27/93	
132900	WP 5.1 FOR DOS FUND	05/03/93	
162234	WHC QUAL ASSURANCE PROG	12/07/88	
162236	QA PROG OVERVIEW (HGET)	10/27/93	
170656	HANDS-ON FIRE EXTINGSHR	05/29/96	05/29/97
300700	SW OPERATIONS FAC ORIENT	09/21/95	09/21/97
400470	WESF MANIPULATOR CERT	01/24/95	01/24/97
400480	STORAGE POOL OPERATIONS	01/26/95	02/07/97
400490	BY PRODUCTS CASK HANDLNG	06/03/96	06/03/98
400500	BUILDING SURVEILLANCE	12/20/94	12/20/96
400600	B PLANT EP/APC - PROCESS	06/07/96	06/07/97
400700	FAC RE-ORIENT/B-PLANT	09/21/95	09/21/97
400750	B PLANT/WESF OSR ORIENT	11/18/92	
400800	B PLANT/WESF LOCK & TAG	01/29/92	
400850	B PLANT SELF SURVEY TRNG	05/29/96	05/29/98
404140	PLANT SPECIFIC-NPO	12/20/92	
404150	WESF OPERATOR EP/APC	05/04/94	05/04/95
404190	WASTE CASK OPS - WESF	07/25/95	07/25/97
405010	C/O - SHIFT ROUTINES	09/11/91	
405020	C/O CONTROL AREA ACT	11/07/91	
405025	C/O - COMMUNICATIONS	10/16/91	
405030	C/O - CNTRL SHIFT TRNG	03/25/92	
405050	C/O - LOCKOUTS & TAGOUTS	01/29/92	
405065	C/O OPERATIONS TURNOVER	11/07/91	
405075	C/O REQUIRED READING	03/25/92	
405080	C/O - ORDERS TO OPERATRS	10/16/91	
800658	RAD WORK TEAM	12/07/95	

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63612 PURDY, PENNI G ORG: W16D40 BLDG/AREA: 225B/200E

000001	HGET	06/13/96	06/13/97
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
000076	FCLTY ORIENT - B PLANT	08/16/90	
000080	SECURITY REFRESHER BRIEF	06/18/92	
000100	ESCORT TRAINING	07/19/93	
000165	ASBESTOS GEN EMPL TRNG	07/19/93	
000600	B PLNT/WESF OSR ORIENT	11/07/90	
001000	CONDUCT OF OPS - INTRO	08/17/93	
001005	OVERVIEW CONDUCT OPERTNS	04/01/94	
003000	LOCK & TAG - GENERAL	07/19/93	
003004	LOCK & TAG B-PLANT/WESF	11/09/89	
003022	LOCK & TAG - CUSTODIAL	03/27/91	
003035	LOCK & TAG AUTH WRKR	03/24/93	
003036	LOCK & TAG -REFRESHER '9	05/16/96	05/16/97
✓020003	RAD WORKER II RETRAIN	03/27/95	03/27/97
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	06/18/92	
020008	RAD JOB SPEC ORIENT	05/24/91	
020030	SCBA ANNUAL	08/15/94	08/15/95
020032	SCOTT SKAPAK-MSA PAPR	08/15/94	08/15/95
020041	BASIC RESP PROTECT TRNG	08/14/95	08/14/96
020044	QUANTITATIVE MASK FIT	08/09/95	08/09/96
020045	PERSONAL SELF SURVEYS	08/16/90	
020050	SELF MONITORING	01/26/95	01/26/97
02006B	HAZ COM/WST ORIENT	07/19/93	
02006F	FIRE EXITING SFTY ORIENT	07/19/93	
02006G	WASTE MANAGEMENT AWARENE	07/14/93	
02006H	HAZ MAT/WASTE JOB SPEC	04/25/91	
02006L	ASBESTOS CONTROL	03/31/88	
020060	HAZ WST SITE OPER RETRN	06/19/91	
020082	RAD EXPOSR TO UNBORN	04/27/90	

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DATE GENERATED 07/08/96
[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
020100	PP-HAZWST SITE OPR-BASIC	03/20/90	
020101	SITE BASIC	01/05/90	
020107	BHVR BASED SAFETY TRNG	07/13/94	
020108	GENERAL EMP RAD RETRNG	07/19/93	
020109	GENERAL EMP RAD TRNG	07/19/93	
020130	CONFND SPC ENTRY (CSE)	06/14/95	06/14/97
020194	HEARING CONSERVATION	07/14/93	
02028E	BLDG EMERG PLN REV CKLST	07/20/90	
020702	RAD WORKER I/II REFRESH	05/22/95	05/22/97
03E025	BLDG EMERG PLAN-0263 BPC	12/01/95	12/01/96
032030	8-HR HAZ WST RFRSHR W/SK	07/14/93	
034520	PERS SELF SURVEY - ALPHA	10/08/92	
034530	PERS SELF SURVEY - BETA	05/22/95	05/22/97
040784	BASIC CRANE/RIGGING SFTY	12/04/91	
040788	BASIC CRANE & RIGGING RE	03/20/96	03/20/99
042350	CRANE TRNG UPDATE	09/14/88	
042810	LIGHT DUTY HOIST & RIGG	12/04/91	
044480	MEDIUM RISK ELECT SFTY	10/05/95	10/05/98
060510	GRCO-NPO	11/05/92	
060760	COND IND WTR HAMMER SFTY	02/27/95	02/27/96
060820	WESF PL SPEC - NPO	11/20/90	
060823	WESF EP/APC-NPO	10/11/91	
060830	WESF-BY PROD CASK HNDLNG	10/16/90	
060833	WESF - BLDG SURVEILLANCE	08/19/91	
060835	WESF POOL CELL OPERATION	06/21/91	
060838	WESF AQUEOUS MAKEUP	01/17/89	
060839	WESF SOLID WASTE	09/06/91	
060840	WESF MANIPULATOR OPRATNS	05/03/91	
065911	MATHEMATICS	03/04/94	
065912	NPO CORE CHEMISTRY	03/11/94	
065914	NPO CORE ELECTRICAL	03/28/94	
065915	NPO CORE INSTRUMENTATION	04/01/94	
065917	NPO CORE MECHANICAL	03/21/94	
080915	RESOLVING EMP CONCERNS	06/15/95	
080940	TOTAL QUALITY AWARENESS	09/13/89	
080957	EMPLOYEE ASSISTANCE PROG	07/14/94	
084112	PERSONAL STYLES IN TEAMI	04/17/96	
100013	HAZ WST RETRN - VENDOR	08/14/95	08/14/96
120196	COMPUTR SECURITY AWARNS	06/18/92	
162236	QA PROG OVERVIEW (HGET)	07/19/93	
170656	HANDS-ON FIRE EXTINGSHR	06/13/96	06/13/97
300700	SW OPERATIONS FAC ORIENT	07/14/94	07/14/96
400470	WESF MANIPULATOR CERT	05/22/95	06/19/97
400480	STORAGE POOL OPERATIONS	05/17/95	05/17/97
400490	BY PRODUCTS CASK HANDLNG	07/18/94	07/18/96
400500	BUILDING SURVEILLANCE	04/21/95	05/03/97
400600	B PLANT EP/APC - PROCESS	12/01/95	12/01/96
400700	FAC RE-ORIENT/B-PLANT	06/13/96	06/13/98
400710	FACILITY ORIENT- INITIAL	10/07/92	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
400800	B PLANT/WESF LOCK & TAG	01/29/92	
400850	B PLANT SELF SURVEY TRNG	05/22/95	05/22/97
401410	RAD CON MANUAL TRAINING	02/21/96	
404140	PLANT SPECIFIC-NPO	10/08/92	
404150	WESF OPERATOR EP/APC	12/02/94	12/02/95
404190	WASTE CASK OPS - WESF	08/15/95	08/15/97
405010	C/O - SHIFT ROUTINES	09/11/91	
405020	C/O CONTROL AREA ACT	11/14/91	
405025	C/O - COMMUNICATIONS	10/10/91	
405030	C/O - CNTRL SHIFT TRNG	12/15/91	
405050	C/O - LOCKOUTS & TAGOUTS	01/29/92	
405060	CO LOG KEEPING	04/23/92	
405065	C/O OPERATIONS TURNOVER	11/14/91	
405070	CO OPS ASPCT FAC CHEM	04/23/92	
405075	C/O REQUIRED READING	12/15/91	
405080	C/O - ORDERS TO OPERATRS	10/10/91	
990086	ESCORT RETRNG	01/08/87	
990833	WESF OC-BLDG SURV	01/09/87	
990834	WESF OC-SAMPLING	10/27/86	
990841	WESF OC-CLSDLP COOLSYS	03/04/87	
990896	ORAL/WALK THRU	11/09/77	
990897	HOT CELL OPER	11/08/77	
990898	CAPSULE STORAGE	11/09/77	
991598	TILT POUR I	07/25/78	
991599	TILT POUR II	07/27/78	
991600	CLOSED LOOP COLNG SYS	08/24/78	

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE

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63925 JOHNSON, GARY W ORG: W16D50 BLDG/AREA: 225B/200E

000001	HGET	06/21/96	06/21/97
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
000076	FCLTY ORIENT - B PLANT	12/13/90	
000080	SECURITY REFRESHER BRIEF	05/02/91	
000100	ESCORT TRAINING	06/24/93	
000165	ASBESTOS GEN EMPL TRNG	06/24/93	
000600	B PLNT/WESF OSR ORIENT	12/12/90	
001000	CONDUCT OF OPS - INTRO	02/05/92	
001005	OVERVIEW CONDUCT OPERTNS	02/18/94	
003000	LOCK & TAG - GENERAL	06/24/93	
003004	LOCK & TAG B-PLANT/WESF	10/09/89	
003022	LOCK & TAG - CUSTODIAL	04/08/91	
003035	LOCK & TAG AUTH WRKR	03/31/93	
003036	LOCK & TAG -REFRESHER '9	06/15/95	06/15/96
020003	RAD WORKER II RETRAIN	10/13/94	10/13/96
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	06/24/92	
020008	RAD JOB SPEC ORIENT	09/20/90	
020030	SCBA ANNUAL	01/31/96	01/31/97
020031	SCBA QUARTERLY	09/01/94	
020032	SCOTT SKAPAK-MSA PAPR	01/31/96	01/31/97
020041	BASIC RESP PROTECT TRNG	08/18/95	08/18/96
020044	QUANTITATIVE MASK FIT	08/18/95	08/18/96
020045	PERSONAL SELF SURVEYS	06/04/90	
020050	SELF MONITORING	03/30/95	03/30/97
02006B	HAZ COM/WST ORIENT	06/24/93	
02006D	CERTIFIED ASBESTOS WRKR	11/17/89	
02006E	CERT ASBESTOS WRKR REQL	09/05/90	
02006F	FIRE EXITING SFTY ORIENT	06/24/93	
02006G	WASTE MANAGEMENT AWARENE	03/03/94	
02006H	HAZ MAT/WASTE JOB SPEC	03/07/91	

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WHC EMPLOYEE TRAINING

DATE GENERATED 07/08/96 [redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
02006L	ASBESTOS CONTROL	04/07/88	
020060	HAZ WST SITE OPER RETRN	03/19/92	
020082	RAD EXPOSR TO UNBORN	05/07/90	
020100	PP-HAZWST SITE OPR-BASIC	02/09/90	
020101	SITE BASIC	02/09/90	
020107	BHVR BASED SAFETY TRNG	06/21/94	
020108	GENERAL EMP RAD RETRNG	06/24/93	
020109	GENERAL EMP RAD TRNG	06/24/93	
020130	CONFND SPC ENTRY (CSE)	07/24/95	07/24/97
020194	HEARING CONSERVATION	03/03/94	
02028D	BOMB SEARCH TEAM TRNG	09/09/83	
02028E	BLDG EMERG PLN REV CKLST	11/13/90	
020702	RAD WORKER I/II REFRESH	12/01/95	12/01/97
03E025	BLDG EMERG PLAN-0263 BPC	05/24/96	05/24/97
032020	8-HR HAZ WST RFRSHR	02/02/95	02/02/96
032030	8-HR HAZ WST RFRSHR W/SK	03/03/94	
034502	PERS SELF SURVEY-B PLANT	09/19/91	
034530	PERS SELF SURVEY - BETA	03/30/94	03/30/96
040784	BASIC CRANE/RIGGING SFTY	10/18/94	10/18/97
041810	FORK TRUCK OPR TRNG	10/16/92	
041890	FORK LIFT OPERATOR REQ	10/19/95	10/19/98
042350	CRANE TRNG UPDATE	09/21/88	
042720	AERIAL LIFT OPER TRNG	03/02/95	03/02/98
044480	MEDIUM RISK ELECT SFTY	10/11/95	10/11/98
060510	GRCO-NPO	01/11/93	
060820	WESF PL SPEC - NPO	01/29/91	
060823	WESF EP/APC-NPO	01/20/92	
060830	WESF-BY PROD CASK HNDLNG	06/27/91	
060833	WESF - BLDG SURVEILLANCE	01/09/91	
060835	WESF POOL CELL OPERATION	05/30/91	
060838	WESF AQUEOUS MAKEUP	06/05/90	
060839	WESF SOLID WASTE	12/13/90	
060840	WESF MANIPULATOR OPRATNS	09/20/91	
065911	MATHEMATICS	01/21/94	
065912	NPO CORE CHEMISTRY	01/28/94	
065914	NPO CORE ELECTRICAL	02/04/94	
065915	NPO CORE INSTRUMENTATION	02/18/94	
065917	NPO CORE MECHANICAL	02/11/94	
080915	RESOLVING EMP CONCERNS	06/26/95	
080940	TOTAL QUALITY AWARENESS	11/20/89	
080957	EMPLOYEE ASSISTANCE PROG	07/25/94	
084112	PERSONAL STYLES IN TEAMI	04/24/96	
100013	HAZ WST RETRN - VENDOR	01/31/96	01/31/97
120196	COMPUTR SECURITY AWARNS	06/24/93	
162234	WHC QUAL ASSURANCE PROG	12/14/88	
162236	QA PROG OVERVIEW (HGET)	06/24/93	
170057	QTRC - ASBESTOS REQUAL	10/09/95	10/09/96
170500	BASIC MEDIC FIRST AID	05/22/96	05/22/98
170656	HANDS-ON FIRE EXTINGSHR	09/14/94	09/14/95

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96

[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
300700	SW OPERATIONS FAC ORIENT	07/25/94	07/25/96
400470	WESF MANIPULATOR CERT	04/03/95	04/03/97
400480	STORAGE POOL OPERATIONS	05/01/95	05/01/97
400490	BY PRODUCTS CASK HANDLNG	09/15/94	09/15/96
400500	BUILDING SURVEILLANCE	01/05/95	01/05/97
400600	B PLANT EP/APC - PROCESS	05/24/96	05/24/97
400700	FAC RE-ORIENT/B-PLANT	06/21/96	06/21/98
400800	B PLANT/WESF LOCK & TAG	02/10/92	
400850	B PLANT SELF SURVEY TRNG	03/30/94	03/30/96
401410	RAD CON MANUAL TRAINING	03/04/96	
404140	PLANT SPECIFIC-NPO	02/04/93	
404150	WESF OPERATOR EP/APC	05/02/94	05/02/95
404190	WASTE CASK OPS - WESF	08/10/95	09/15/97
405010	C/O - SHIFT ROUTINES	09/18/91	
405020	C/O CONTROL AREA ACT	11/14/91	
405025	C/O - COMMUNICATIONS	10/17/91	
405030	C/O - CNTRL SHIFT TRNG	12/12/91	
405050	C/O - LOCKOUTS & TAGOUTS	02/10/92	
405060	CO LOG KEEPING	04/30/92	
405065	C/O OPERATIONS TURNOVER	11/14/91	
405070	CO OPS ASPCT FAC CHEM	04/30/92	
405075	C/O REQUIRED READING	12/12/91	
405080	C/O - ORDERS TO OPERATRS	10/17/91	
405085	CO OPERATIONS PROCEDURES	12/14/92	
990086	ESCORT RETRNG	01/15/87	
990833	WESF OC-BLDG SURV	02/24/87	
990834	WESF OC-SAMPLING	03/12/87	
990841	WESF OC-CLSDLP COOLSYS	03/12/87	
991598	TILT POUR I	07/25/78	
991599	TILT POUR II	08/01/78	
991600	CLOSED LOOP COLNG SYS	08/23/78	

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
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[redacted]

	COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE

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* from a different area, that retrain date can be removed from *
* the employee file. Please use report TRI103R or TRI203R and *
* highlight the course(s) no longer applicable. After this report *
* is signed and dated by the appropriate manager, please forward *
* to TRAINING RECORDS, mail stop G6-60. *
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62079 BARNETT, DANIEL H ORG: W16D60 BLDG/AREA: 225B/200E

000001	HGET	06/12/95	06/12/96
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
000070	FCLTY ORIENT - PFP	09/27/76	
000076	FCLTY ORIENT - B PLANT	04/18/91	
000080	SECURITY REFRESHER BRIEF	09/03/92	
000100	ESCORT TRAINING	06/10/93	
000165	ASBESTOS GEN EMPL TRNG	06/10/93	
000600	B PLNT/WESF OSR ORIENT	08/09/90	
001005	OVERVIEW CONDUCT OPERTNS	08/20/93	
003000	LOCK & TAG - GENERAL	06/10/93	
003004	LOCK & TAG B-PLANT/WESF	08/09/90	
003022	LOCK & TAG - CUSTODIAL	03/20/91	
003035	LOCK & TAG AUTH WRKR	02/17/93	
003036	LOCK & TAG -REFRESHER '9	10/26/95	10/26/96
020003	RAD WORKER II RETRAIN	12/01/94	12/01/96
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	06/10/93	
020008	RAD JOB SPEC ORIENT	11/01/90	
020032	SCOTT SKAPAK-MSA PAPR	09/27/95	09/27/96
02004C	BASIC RESP PROT REFRESH	12/20/95	12/20/96
020041	BASIC RESP PROTECT TRNG	12/21/94	12/21/95
020044	QUANTITATIVE MASK FIT	12/20/95	12/20/96
020045	PERSONAL SELF SURVEYS	05/16/90	
020050	SELF MONITORING	04/15/93	
02006B	HAZ COM/WST ORIENT	06/10/93	
02006F	FIRE EXITING SFTY ORIENT	06/10/93	
02006G	WASTE MANAGEMENT AWARENE	03/18/93	
02006H	HAZ MAT/WASTE JOB SPEC	04/19/91	
02006L	ASBESTOS CONTROL	03/31/88	
020060	HAZ WST SITE OPER RETRN	03/19/92	
020082	RAD EXPOSR TO UNBORN	05/18/90	

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WHC EMPLOYEE TRAINING
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[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
020100	PP-HAZWST SITE OPR-BASIC	02/23/90	
020101	SITE BASIC	02/23/90	
020107	BHVR BASED SAFETY TRNG	01/20/94	
020108	GENERAL EMP RAD RETRNG	06/10/93	
020109	GENERAL EMP RAD TRNG	06/10/93	
020130	CONFND SPC ENTRY (CSE)	05/12/95	05/12/97
020194	HEARING CONSERVATION	03/18/93	
02028E	BLDG EMERG PLN REV CKLST	11/09/90	
020702	RAD WORKER I/II REFRESH	02/16/96	02/16/98
03E025	BLDG EMERG PLAN-0263 BPC	03/13/96	03/13/97
032020	8-HR HAZ WST RFRSHR	10/03/94	10/03/95
032030	8-HR HAZ WST RFRSHR W/SK	03/18/93	
034520	PERS SELF SURVEY - ALPHA	10/08/92	
034530	PERS SELF SURVEY - BETA	03/13/96	03/13/98
040784	BASIC CRANE/RIGGING SFTY	01/23/91	
042350	CRANE TRNG UPDATE	09/21/88	
042810	LIGHT DUTY HOIST & RIGG	01/23/91	
044480	MEDIUM RISK ELECT SFTY	09/01/95	09/01/98
060510	GRCO-NPO	11/02/92	
060760	COND IND WTR HAMMER SFTY	08/03/95	08/03/96
060820	WESF PL SPEC - NPO	12/31/90	
060823	WESF EP/APC-NPO	12/30/91	
060830	WESF-BY PROD CASK HNDLNG	10/12/88	
060833	WESF - BLDG SURVEILLANCE	10/08/90	
060835	WESF POOL CELL OPERATION	04/22/91	
060838	WESF AQUEOUS MAKEUP	05/20/91	
060839	WESF SOLID WASTE	06/13/90	
060840	WESF MANIPULATOR OPRATNS	10/07/91	
065911	MATHEMATICS	08/05/94	
065912	NPO CORE CHEMISTRY	07/30/93	
065914	NPO CORE ELECTRICAL	08/06/93	
065915	NPO CORE INSTRUMENTATION	08/20/93	
065917	NPO CORE MECHANICAL	08/16/93	
080915	RESOLVING EMP CONCERNS	06/12/95	
080957	EMPLOYEE ASSISTANCE PROG	07/07/94	
100013	HAZ WST RETRN - VENDOR	09/27/95	09/27/96
120196	COMPUTR SECURITY AWARNS	07/07/94	
162234	WHC QUAL ASSURANCE PROG	12/14/88	
162236	QA PROG OVERVIEW (HGET)	06/10/93	
170656	HANDS-ON FIRE EXTINGSHR	02/15/96	02/15/97
300700	SW OPERATIONS FAC ORIENT	07/07/94	07/07/96
400470	WESF MANIPULATOR CERT	05/16/94	05/16/96
400500	BUILDING SURVEILLANCE	12/02/94	12/05/96
400600	B PLANT EP/APC - PROCESS	03/13/96	03/13/97
400700	FAC RE-ORIENT/B-PLANT	06/12/95	06/12/97
400800	B PLANT/WESF LOCK & TAG	02/19/92	
400850	B PLANT SELF SURVEY TRNG	03/13/96	03/13/98
401410	RAD CON MANUAL TRAINING	02/16/96	
404140	PLANT SPECIFIC-NPO	12/28/92	

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WHC EMPLOYEE TRAINING
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[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
404150	WESF OPERATOR EP/APC	02/18/94	02/18/95
405010	C/O - SHIFT ROUTINES	09/05/91	
405020	C/O CONTROL AREA ACT	11/27/91	
405025	C/O - COMMUNICATIONS	10/31/91	
405030	C/O - CNTRL SHIFT TRNG	03/18/92	
405050	C/O - LOCKOUTS & TAGOUTS	02/19/92	
405060	CO LOG KEEPING	04/16/92	
405065	C/O OPERATIONS TURNOVER	11/27/91	
405070	CO OPS ASPCT FAC CHEM	04/16/92	
405075	C/O REQUIRED READING	03/18/92	
405080	C/O - ORDERS TO OPERATRS	10/31/91	
990086	ESCORT RETRNG	01/05/87	
990833	WESF OC-BLDG SURV	02/12/87	
990834	WESF OC-SAMPLING	02/24/87	
990841	WESF OC-CLSDLP COOLSYS	02/24/87	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE

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* is signed and dated by the appropriate manager, please forward *
* to TRAINING RECORDS, mail stop G6-60. *
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63918 BEIGHTOL, STEVEN L ORG: W16D70 BLDG/AREA: 225B/200E

000001	HGET	05/06/96	05/06/97
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
000076	FCLTY ORIENT - B PLANT	01/22/91	
000080	SECURITY REFRESHER BRIEF	10/22/92	
000100	ESCORT TRAINING	04/05/93	
000165	ASBESTOS GEN EMPL TRNG	04/05/93	
000600	B PLNT/WESF OSR ORIENT	12/12/90	
001000	CONDUCT OF OPS - INTRO	12/17/91	
001005	OVERVIEW CONDUCT OPERTNS	09/24/93	
003000	LOCK & TAG - GENERAL	04/05/93	
003004	LOCK & TAG B-PLANT/WESF	10/12/89	
003022	LOCK & TAG - CUSTODIAL	04/15/91	
003035	LOCK & TAG AUTH WRKR	03/03/93	
003036	LOCK & TAG -REFRESHER '9	03/09/95	03/09/96
020003	RAD WORKER II RETRAIN	12/12/94	12/12/96
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	04/27/92	
020008	RAD JOB SPEC ORIENT	11/01/90	
020030	SCBA ANNUAL	03/08/96	03/08/97
020032	SCOTT SKAPAK-MSA PAPR	03/08/96	03/08/97
020041	BASIC RESP PROTECT TRNG	05/22/96	05/22/97
020044	QUANTITATIVE MASK FIT	05/22/96	05/22/97
020045	PERSONAL SELF SURVEYS	05/02/89	
020050	SELF MONITORING	05/23/94	05/23/96
02006B	HAZ COM/WST ORIENT	04/23/90	
02006D	CERTIFIED ASBESTOS WRKR	01/13/89	
02006F	FIRE EXITING SFTY ORIENT	04/05/93	
02006G	WASTE MANAGEMENT AWARENE	11/15/93	
02006H	HAZ MAT/WASTE JOB SPEC	11/29/90	
02006L	ASBESTOS CONTROL	04/24/90	
020060	HAZ WST SITE OPER RETRN	11/08/91	

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96
[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
020082	RAD EXPOSR TO UNBORN	04/23/90	
020100	PP-HAZWST SITE OPR-BASIC	12/05/89	
020101	SITE BASIC	12/05/89	
020107	BHVR BASED SAFETY TRNG	02/03/94	
020108	GENERAL EMP RAD RETRNG	04/05/93	
020130	CONFND SPC ENTRY (CSE)	05/31/95	05/31/97
020194	HEARING CONSERVATION	11/15/93	
02028D	BOMB SEARCH TEAM TRNG	08/23/83	
02028E	BLDG EMERG PLN REV CKLST	11/13/90	
020702	RAD WORKER I/II REFRESH	01/23/96	01/23/98
03E025	BLDG EMERG PLAN-0263 BPC	05/31/96	05/31/97
032020	8-HR HAZ WST RFRSHR	03/08/96	03/08/97
032030	8-HR HAZ WST RFRSHR W/SK	11/15/93	
034502	PERS SELF SURVEY-B PLANT	07/18/91	
034530	PERS SELF SURVEY - BETA	05/29/96	05/29/98
041810	FORK TRUCK OPR TRNG	10/11/88	
042720	AERIAL LIFT OPER TRNG	01/11/95	01/11/98
042810	LIGHT DUTY HOIST & RIGG	07/19/90	
044470	FORKLIFT OPERATNL SAFETY	10/04/94	10/04/97
044480	MEDIUM RISK ELECT SFTY	09/21/95	09/21/98
044670	EQUIP SPEC OJT FORK LIFT	10/04/94	10/04/97
044680	OJT EVAL CKLST AERIAL LF	01/12/95	01/11/98
060510	GRCO-NPO	06/04/91	
060620	TF P/S PL SPEC-NPO	11/10/86	
060622	TF EP/APC-NPO PROC	09/22/88	
060662	TF CERT-ROUTINES	09/19/86	
060678	TF OC SALTWELL SYSTEM	09/08/87	
060681	TF ORIENT-DMRHF	09/05/86	
060686	TF OC-AGING WASTE TANK	02/21/87	
060760	COND IND WTR HAMMER SFTY	11/17/94	11/17/95
060820	WESF PL SPEC - NPO	11/02/90	
060823	WESF EP/APC-NPO	10/23/91	
060830	WESF-BY PROD CASK HNDLNG	10/19/90	
060833	WESF - BLDG SURVEILLANCE	11/01/90	
060835	WESF POOL CELL OPERATION	10/30/90	
060838	WESF AQUEOUS MAKEUP	01/08/93	
060839	WESF SOLID WASTE	10/18/90	
060840	WESF MANIPULATOR OPRATNS	06/16/92	
065911	MATHEMATICS	08/27/93	
065912	NPO CORE CHEMISTRY	09/03/93	
065914	NPO CORE ELECTRICAL	09/10/93	
065915	NPO CORE INSTRUMENTATION	09/24/93	
065917	NPO CORE MECHANICAL	09/20/93	
080915	RESOLVING EMP CONCERNS	02/13/95	
080940	TOTAL QUALITY AWARENESS	09/12/89	
080957	EMPLOYEE ASSISTANCE PROG	02/13/95	
100013	HAZ WST RETRN - VENDOR	03/08/95	03/08/96
120196	COMPUTR SECURITY AWARNS	04/05/93	
162234	WHC QUAL ASSURANCE PROG	12/16/88	

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WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96
[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
162236	QA PROG OVERVIEW (HGET)	04/05/93	
170057	QTRC - ASBESTOS REQUAL	11/27/95	01/13/97
170500	BASIC MEDIC FIRST AID	04/10/95	04/10/97
170656	HANDS-ON FIRE EXTINGSHR	05/29/96	05/29/97
400470	WESF MANIPULATOR CERT	02/13/95	04/05/97
400480	STORAGE POOL OPERATIONS	02/09/95	02/16/97
400490	BY PRODUCTS CASK HANDLNG	07/21/94	~~07/22/96~~ 6/26/98 LB 7/22/96
400500	BUILDING SURVEILLANCE	12/13/94	12/14/96
400600	B PLANT EP/APC - PROCESS	05/31/96	05/31/97
400700	FAC RE-ORIENT/B-PLANT	05/06/96	05/06/98
400710	FACILITY ORIENT- INITIAL	05/04/94	05/04/96
400750	B PLANT/WESF OSR ORIENT	11/16/92	
400800	B PLANT/WESF LOCK & TAG	01/29/92	
400850	B PLANT SELF SURVEY TRNG	05/29/96	05/29/98
404140	PLANT SPECIFIC-NPO	10/29/92	
404150	WESF OPERATOR EP/APC	04/06/94	04/06/95
404190	WASTE CASK OPS - WESF	07/26/95	07/27/97
405000	IMPLEMENT CONDUCT OPS	12/18/91	
405010	C/O - SHIFT ROUTINES	08/21/91	
405020	C/O CONTROL AREA ACT	11/06/91	
405025	C/O - COMMUNICATIONS	10/10/91	
405030	C/O - CNTRL SHIFT TRNG	12/15/91	
405050	C/O - LOCKOUTS & TAGOUTS	01/29/92	
405060	CO LOG KEEPING	04/23/92	
405065	C/O OPERATIONS TURNOVER	11/06/91	
405070	CO OPS ASPCT FAC CHEM	04/23/92	
405075	C/O REQUIRED READING	12/15/91	
405080	C/O - ORDERS TO OPERATRS	10/10/91	
990107	EMPLOYEE INDOCTRINATION	09/20/86	

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COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE

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66174 EBERLE, MARVIN J ORG: W16D10 BLDG/AREA: 271B/200E

000001	HGET	11/20/95	11/20/96
Incl:	000165 - Asbestos Gen Empl Trng		
	003000 - Lock & Tag - General		
	020005 - Gen Emp Criticality Orie		
	02006B - Haz Com/Wst Orient		
	02006F - Fire Exting Sfty Orient		
	020108 - General Emp Rad Retrng		
	020196 - Noise Control Requal		
	162236 - QA Prog Overview (HGET)		
000072	FCLTY ORIENT - PUREX	09/26/90	
000074	FCLTY ORIENT - T PLANT	09/06/91	
000076	FCLTY ORIENT - B PLANT	01/10/91	
000077	FCLTY ORIENT - TANK FARM	01/21/85	
000078	FCLTY ORIENT - S WASTE	01/21/85	
000080	SECURITY REFRESHER BRIEF	08/20/92	
000100	ESCORT TRAINING	01/03/94	
000140	HAZARDS RECOGNITION	07/25/94	
000142	SAFETY OBSERVER -MONTHLY	08/30/94	
000165	ASBESTOS GEN EMPL TRNG	01/03/94	
000600	B PLNT/WESF OSR ORIENT	05/08/91	
001000	CONDUCT OF OPS - INTRO	12/17/91	
003000	LOCK & TAG - GENERAL	01/03/94	
003004	LOCK & TAG B-PLANT/WESF	01/22/90	
003008	LOCK & TAG - PUREX	09/26/90	
003022	LOCK & TAG - CUSTODIAL	03/04/91	
003035	LOCK & TAG AUTH WRKR	03/03/93	
003036	LOCK & TAG -REFRESHER '9	09/27/95	09/27/96
020003	RAD WORKER II RETRAIN	08/08/95	08/08/97
Incl:	020040 - DTPA Orientation		
020005	GEN EMP CRITICALITY ORIE	01/03/94	
020008	RAD JOB SPEC ORIENT	10/10/91	
020010	CRIT SAFETY - FISSILE	06/21/95	06/21/97
020030	SCBA ANNUAL	10/19/95	10/19/96
020031	SCBA QUARTERLY	04/19/93	
020032	SCOTT SKAPAK-MSA PAPR	10/19/95	10/19/96
020040	DTPA ORIENTATION	08/29/91	
020041	BASIC RESP PROTECT TRNG	05/09/96	05/09/97
020044	QUANTITATIVE MASK FIT	05/09/96	05/09/97

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WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96
[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
020045	PERSONAL SELF SURVEYS	09/28/89	
02006F	FIRE EXITING SFTY ORIENT	01/03/94	
02006G	WASTE MANAGEMENT AWARENE	09/08/93	
02006H	HAZ MAT/WASTE JOB SPEC	09/05/91	
02006L	ASBESTOS CONTROL	01/19/89	
020060	HAZ WST SITE OPER RETRN	09/03/91	
020082	RAD EXPOSR TO UNBORN	09/26/90	
020090	DRIVR ENGRY CONSERVATION	07/10/87	
020100	PP-HAZWST SITE OPR-BASIC	04/15/91	
020101	SITE BASIC	09/28/90	
020107	BHVR BASED SAFETY TRNG	02/23/94	
020108	GENERAL EMP RAD RETRNG	01/03/94	
020194	HEARING CONSERVATION	09/08/93	
020196	NOISE CONTROL REQUAL	01/03/94	
020197	MEDIC FIRST AID - BASIC	09/13/93	
02028D	BOMB SEARCH TEAM TRNG	06/27/94	
02028E	BLDG EMERG PLN REV CKLST	11/29/90	
020285	CONTROLLER EVAL TRAINING	06/06/95	06/06/97
020301	CRIT SFTY JSO-FSSL	09/06/95	09/06/97
020702	RAD WORKER I/II REFRESH	04/22/96	04/22/98
03E025	BLDG EMERG PLAN-0263 BPC	02/13/96	02/13/97
03E048	BLDG EMERG PLAN- T PLANT	11/08/95	11/08/96
032020	8-HR HAZ WST RFRSHR	12/01/94	
032030	8-HR HAZ WST RFRSHR W/SK	09/08/93	
034502	PERS SELF SURVEY-B PLANT	01/06/91	
034520	PERS SELF SURVEY - ALPHA	03/21/95	03/21/97
034530	PERS SELF SURVEY - BETA	02/21/96	02/21/98
040784	BASIC CRANE/RIGGING SFTY	06/15/90	
040788	BASIC CRANE & RIGGING RE	03/20/96	03/20/99
041900	PUREX QUAL-CRANE OPERTN	08/04/95	
041910	B QUAL-CRANE OPERATION	04/09/91	
041920	B EP/APC-CRANE OP	04/18/91	
041930	T/U QUAL-CRANE OPERATION	09/05/91	
041940	T/U EP/APC - CRANE OP	03/04/92	
041950	AR/EVPS QUAL-CRANE OPRTN	07/17/91	
041960	AR/EVPS EP/APC-CRANE OP	03/04/92	
041980	PUREX EP/APC - CRANE OP	03/04/92	
042320	ADVANCED CRANE & RIGGING	10/06/93	10/06/96
042350	CRANE TRNG UPDATE	09/19/88	
042820	WIRE ROPE/RIG HRDWR INSP	11/04/93	11/04/96
043000	WESF QUAL-CRANE OPR	09/04/91	
043140	B PLANT OP OC	05/08/90	
044480	MEDIUM RISK ELECT SFTY	02/01/96	02/01/99
080915	RESOLVING EMP CONCERNS	11/28/94	
080940	TOTAL QUALITY AWARENESS	10/27/89	
080957	EMPLOYEE ASSISTANCE PROG	11/28/94	
084112	PERSONAL STYLES IN TEAMI	04/16/96	
100012	HAZ WST SITE-40HR VENDOR	02/14/94	
100013	HAZ WST RETRN - VENDOR	10/19/95	10/19/96

--- TRAINING RECORDS INFORMATION SYSTEM ---
WHC EMPLOYEE TRAINING
DATE GENERATED 07/08/96
[redacted]

COURSE NUMBER	COURSE TITLE	DATE TAKEN	RECERT DATE
120196	COMPUTR SECURITY AWARNS	10/13/92	
131110	INTRO TO MICROCOMPUTERS	08/18/92	
132900	WP 5.1 FOR DOS FUND	10/06/92	
132903	WORDPERFECT MOD IB	11/04/92	
162236	QA PROG OVERVIEW (HGET)	01/03/94	
170030	QTRC - PERS STRESS MGMNT	09/15/93	
170032	COMM IN WORKPLACE - QTRC	11/20/92	
170500	BASIC MEDIC FIRST AID	09/13/93	
170540	QTRC - ASSERTIVENESS TRN	07/28/92	
170564	QTRC - 7 HABITS EFF PEOP	06/28/94	
170656	HANDS-ON FIRE EXTINGSHR	02/24/94	02/24/95
250700	PUREX FACILITY ORIENT	11/20/95	11/20/97
250850	SELF SURVEY AT PUREX/U03	03/21/95	
251300	PUREX QUAL-CRANE OPER	12/10/93	12/10/95
251310	PUREX EP/APC CRANE OPER	03/04/93	
350710	FACILITY ORIENTATION	05/11/95	05/11/96
350760	FACILITY REORIENTATION	11/20/95	11/20/96
351350	AR/EVPS QUAL-CRANE OPRTN	01/25/95	01/25/97
351360	AR/EVPS EP/APC-CRANE OP	03/04/93	
351490	242-A HAZ COMM TRAINING	12/08/93	
400700	FAC RE-ORIENT/B-PLANT	11/20/95	11/20/97
400800	B PLANT/WESF LOCK & TAG	05/27/92	
400850	B PLANT SELF SURVEY TRNG	02/21/96	02/21/98
401300	CRANE OPERATION QUAL BPLT/WESF	08/04/95	08/04/97
401310	EP/APC CRANE OPERATORS	07/25/94	07/25/95
401410	RAD CON MANUAL TRAINING	02/14/96	
402210	B PLANT EP/APC - GENERAL	02/09/95	02/09/96
405000	IMPLEMENT CONDUCT OPS	12/18/91	
405010	C/O - SHIFT ROUTINES	09/26/91	
405020	C/O CONTROL AREA ACT	11/14/91	
405030	C/O - CNTRL SHIFT TRNG	12/12/91	
405050	C/O - LOCKOUTS & TAGOUTS	05/27/92	
405060	CO LOG KEEPING	04/30/92	
405065	C/O OPERATIONS TURNOVER	11/14/91	
405070	CO OPS ASPCT FAC CHEM	04/30/92	
405075	C/O REQUIRED READING	12/12/91	
405085	CO OPERATIONS PROCEDURES	12/14/92	
406000	WESF QUAL CRANE OPERATOR	10/27/93	10/27/95
406020	T-PLANT EP/APC-CRANE OP	03/04/93	
450700	FCLTY ORIENT - T PLANT	07/28/94	07/28/96
991705	GEN PLANT QUAL-CRANE OP	03/24/83	
992411	TMI SDS LINR TRANSLDNG-O	10/20/82	

POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code: J4A11000
Manager: LEE, RANDALL G
Organization: MECHANICAL MAINTENANCE
Position: Millwright, jrn

Matrix Last Modified on 05/19/96
30 Days Delinquent Forecast

07/11/96 Position 3
08:03:07 Sheet 1 of 1

Course No.	Title	Retrain Course	STEVEN L DEMEYER [redacted]	DUANE A LANMAN [redacted]	ALLAN D SANDERS [redacted]	JOHN R WALKUP [redacted]
M 000001	HGET	------	05/10/97	01/02/97	04/24/97	08/14/96
M 003035	LOCK & TAG AUTH WRKR	003036	<<06/08/96>>	<<03/16/96>>	<<02/16/96>>	05/30/97
M 020001	RAD WRKR TRNG II - INIT	020003	05/12/97	02/09/97	01/23/97	08/17/97
M 02006G	WASTE MANAGEMENT AWARENESS	------	OK	OK	OK	OK
M 020130	CONFND SPC ENTRY (CSE)	020130	05/30/97	07/18/97	06/21/97	08/02/97
M 020194	HEARING CONSERVATION	------	OK	OK	OK	OK
M 020702	RAD WORKER I/II REFRESH	020702	11/02/97	11/02/97	11/02/97	11/02/97
M 031110	24 HR RCRA TSD HAZ WASTE	032020	03/27/97	01/04/97	01/31/97	09/19/96
M 044480	MEDIUM RISK ELECT SFTY	044480	04/25/99	09/21/98	09/21/98	10/02/98
M 170500	BASIC MEDIC FIRST AID	170500	05/23/97	12/20/96	<<06/24/96>>	10/04/96
D 020107	BHVR BASED SAFETY TRNG	------	OK	OK	OK	OK
D 034530	PERS SELF SURVEY - BETA	034530	05/22/97	<<05/03/96>>	01/19/97	01/23/98
D 03E025	BLDG EMERG PLAN-0263 BPC	03E025	<<05/01/96>>	<<04/17/96>>	<<05/15/96>>	<<04/17/96>>
D 040784	BASIC CRANE/RIGGING SFTY	040788	03/20/99	06/05/99	08/26/96	01/20/97
D 042720	AERIAL LIFT OPER TRNG	043920	<<04/02/96>>	06/25/99	06/25/99	08/03/97
D 042830	OVERHD CRANE MECHANICAL	042830	05/04/98	04/27/97	04/27/97	04/13/97
B 400710	FACILITY ORIENT- INITIAL	400700	05/10/98	01/02/98	04/24/98	08/14/97
D 400850	B PLANT SELF SURVEY TRNG	400850	05/22/97	<<05/03/96>>	01/19/97	01/23/98
D 402210	B PLANT EP/APC - GENERAL	402210	<<05/01/96>>	<<04/17/96>>	<<05/15/96>>	<<04/17/96>>
m 044470	FORKLIFT OPERATNL SAFETY	041890	04/08/99	08/11/96	03/07/98	03/04/97
d 170652	QTRC - FALL ARREST/RESTR	------		OK	OK	
d 170656	HANDS-ON FIRE EXTINGSHR	170656	****	<<03/23/96>>	03/19/97	****

complete 7/19/96 attached

LEGEND

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POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code: J4H00000
Manager: CRAIG, DOUGLAS W
Organization: B PLANT TRANSITION RAD CONTROL
Position: HEALTH PHYSICS TECHNICIANS

Matrix Last Modified on 05/19/96
30 Days Delinquent Forecast

07/11/96 Position 3
08:04:31 Sheet 1 of 2

Course No.	Title	Retrain Course	BRETT M AUCKLAND [redacted]	THEODORE J BIENERTH [redacted]	MICHAEL J CROCKETT [redacted]	RICK A DAUGHETY [redacted]	ALLEN D FRIDLUND [redacted]	DAVID L HARROLD [redacted]	KEVIN D JAMISON [redacted]	ORLAND R JAMISON [redacted]
M 000001	HGET	------	10/18/96	12/22/96	12/18/96	10/09/96	10/17/96	09/27/96	09/20/96	09/25/96
M 003000	LOCK & TAG - GENERAL	------	10/18/96	12/22/96	12/18/96	10/09/96	10/17/96	09/27/96	09/20/96	09/25/96
M 020001	RAD WRKR TRNG II - INIT	020003	12/22/96	11/18/96	10/21/96	12/02/96	04/04/97	02/17/97	12/13/96	11/18/96
M 020032	SCOTT SKAPAK-MSA PAPR	020032	<<02/14/96>>	02/14/97	10/19/96	10/11/96	04/16/97	<<11/28/95>>	12/14/96	09/12/96
M 020041	BASIC RESP PROTECT TRNG	020041	05/22/97	09/07/96	03/20/97	10/04/96	01/23/97	06/21/97	12/15/96	04/09/97
M 020044	QUANTITATIVE MASK FIT	020044	05/22/97	09/07/96	03/20/97	10/04/96	01/23/97	<<06/09/96>>	12/15/96	04/09/97
M 020109	GENERAL EMP RAD TRNG	020108	10/18/97	12/22/97	12/18/97	10/09/97	10/17/97	09/27/97	09/20/97	09/25/97
M 020130	CONFND SPC ENTRY (CSE)	020130	05/16/97	05/19/97	09/20/97	03/21/98	04/14/97	05/12/97	11/18/96	05/30/97
M 020194	HEARING CONSERVATION	------	OK	OK	OK	OK	OK	OK	OK	OK
M 031220	40 HOUR HAZ WST WRKR (FIELD)	032020	02/05/97	02/14/97	10/19/96	<<08/10/96>>	04/16/97	10/19/96	12/14/96	09/12/96
M 170500	BASIC MEDIC FIRST AID	170500	08/08/97	06/27/97	05/17/97	06/19/97	07/11/97	03/15/97	05/03/97	04/05/97
D 000165	ASBESTOS GEN EMPL TRNG	------	10/18/96	12/22/96	12/18/96	10/09/96	10/17/96	09/27/96	09/20/96	09/25/96
D 02006L	ASBESTOS CONTROL	02006L	<<07/24/96>>	09/21/96	<<03/06/96>>	03/20/97	02/15/97	<<06/12/96>>	04/08/97	03/08/97
D 020107	BHVR BASED SAFETY TRNG	------	OK	OK	OK	OK	OK	OK	OK	OK
D 022004	DOE RCT STE ACAD(PHSE I PRT II	------	OK	OK	OK	OK	OK	<<11/24/94>>	OK	/ /
D 022045	HPT ORAL EXAM BOARD	022045	<<03/02/96>>	<<03/16/96>>	<<03/23/96>>	<<04/20/96>>	<<04/06/96>>	<<06/09/96>>	<<05/04/96>>	<<02/16/96>>
D 022120	HPT/RCT CYCLE #1	------	OK	OK	OK	OK	OK	OK	OK	OK
D 038100	EVENT COMMAND POST TRNG	------	OK	OK	OK	OK	OK	OK	OK	OK
D 03E025	BLDG EMERG PLAN-0263 BPC	03E025	<<05/25/96>>	<<06/28/96>>	09/22/96	05/15/97	05/20/97	09/27/96	09/21/96	<<06/21/96>>
D 170648	BLOODBORNE PATHOGENS-INI	170651	05/16/97	09/05/96	<<05/16/96>>	08/31/96	09/19/96	08/31/96	08/24/96	09/05/96
D 400600	B PLANT EP/APC - PROCESS	400600	<<05/25/96>>	<<06/26/96>>	09/22/96	05/15/97	05/22/97	09/27/96	09/26/96	<<06/20/96>>
D 400710	FACILITY ORIENT- INITIAL	400700	10/18/97	12/22/97	12/18/97	10/09/97	10/17/97	09/27/97	09/20/97	09/25/97
d 000390	OJT TRAINING WORKSHOP	------	OK	OK					OK	
d 000397	OJE TRAINING	------		OK					OK	

LEGEND

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POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code: J4H00000
Manager: CRAIG, DOUGLAS W
Organization: B PLANT TRANSITION RAD CONTROL
Position: HEALTH PHYSICS TECHNICIANS

Matrix Last Modified on 05/19/96
30 Days Delinquent Forecast

07/11/96 Position 3
08:05:11 Sheet 1 of 2
--> (Continued)

Course No.	Title	Retrain Course	BONNIE J JUDY [redacted]	WILBUR S JUDYCKI [redacted]	SCOTT B MALLORY [redacted]	RODNEY E NELSON [redacted]	TROY G TAYLOR [redacted]	KATHLEEN M WARREN [redacted]	MARK S WATKINS [redacted]	JESSIE R WEATHERS [redacted]
M 000001	HGET	------	10/18/96	01/18/97	12/22/96	03/26/97	12/04/96	11/07/96	10/11/96	12/04/96
M 003000	LOCK & TAG - GENERAL	------	10/18/96	01/18/97	12/22/96	03/26/97	12/04/96	11/07/96	10/11/96	12/04/96
M 020001	RAD WRKR TRNG II - INIT	020003	04/11/97	03/21/97	03/21/97	12/06/96	04/21/97	05/12/97	01/13/97	05/12/97
M 020032	SCOTT SKAPAK-MSA PAPR	020032	<<07/20/95>>	<<08/16/95>>	04/11/97	05/15/97	03/14/97	01/30/97	<<02/14/96>>	<<04/26/96>>
M 020041	BASIC RESP PROTECT TRNG	020041	01/11/97	04/10/97	03/14/97	03/22/97	02/16/97	11/02/96	12/06/96	10/09/96
M 020044	QUANTITATIVE MASK FIT	020044	01/11/97	04/10/97	03/14/97	03/22/97	02/16/97	11/02/96	12/06/96	10/09/96
M 020109	GENERAL EMP RAD TRNG	020108	10/18/97	01/18/98	12/22/97	03/26/98	12/04/97	11/07/97	10/11/97	12/04/97
M 020130	CONFND SPC ENTRY (CSE)	020130	06/14/97	05/30/97	11/22/97	03/01/97	02/01/97	07/14/97	05/19/97	11/15/97
M 020194	HEARING CONSERVATION	------	OK	OK	OK	OK	OK	OK	OK	OK
M 031220	40 HOUR HAZ WST WRKR (FIELD)	032020	04/18/97	<<07/26/96>>	04/11/97	05/15/97	03/14/97	01/30/97	02/05/97	02/14/97
M 170500	BASIC MEDIC FIRST AID	170500	05/08/97	05/23/97	07/19/97	08/07/97	08/28/97	05/08/97	07/11/97	07/17/97
D 000165	ASBESTOS GEN EMPL TRNG	------	10/18/96	01/18/97	12/22/96	03/26/97	12/04/96	11/07/96	10/11/96	12/04/96
D 02006L	ASBESTOS CONTROL	02006L	03/13/97	03/20/97	<<03/06/96>>	03/29/97	04/23/97	03/19/97	03/13/97	03/13/97
D 020107	BHVR BASED SAFETY TRNG	------	OK	OK	OK	OK	OK	OK	OK	OK
D 022004	DOE RCT STE ACAD(PHSE I PRT II	------	OK	/ /	/ /	/ /	OK	OK	OK	OK
D 022045	HPT ORAL EXAM BOARD	022045	<<04/13/96>>	<<02/16/96>>	<<04/25/96>>	<<05/17/96>>	<<03/08/96>>	<<03/09/96>>	<<03/16/96>>	<<04/27/96>>
D 022120	HPT/RCT CYCLE #1	------	OK	OK	OK	OK	OK	OK	OK	OK
D 038100	EVENT COMMAND POST TRNG	------	OK	OK	OK	OK	OK	OK	OK	OK
D 03E025	BLDG EMERG PLAN-0263 BPC	03E025	<<05/23/96>>	<<05/24/96>>	03/26/97	08/14/96	01/18/97	09/12/96	06/26/97	09/22/96
D 170648	BLOODBORNE PATHOGENS-INI	170651	05/09/97	08/24/96	<<08/10/96>>	<<07/27/96>>	08/17/96	02/21/97	09/19/96	<<08/03/96>>
D 400600	B PLANT EP/APC - PROCESS	400600	<<05/23/96>>	<<05/24/96>>	03/26/97	<<08/09/96>>	01/18/97	08/26/96	<<06/08/96>>	09/22/96
D 400710	FACILITY ORIENT- INITIAL	400700	10/18/97	01/18/98	12/22/97	03/26/98	09/28/96	11/07/97	10/11/97	12/04/97
d 000390	OJT TRAINING WORKSHOP	------	OK	OK		OK			OK	
d 000397	OJE TRAINING	------	OK	OK		OK			OK	

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POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code: J4H00000
Manager: CRAIG, DOUGLAS W
Organization: B PLANT TRANSITION RAD CONTROL
Position: HEALTH PHYSICS TECHNICIANS

Matrix Last Modified on 05/19/96
30 Days Delinquent Forecast

07/11/96 Position 3
08:05:52 Sheet 1 of 2
--> (Continued)

	Course No.	Title	Retrain Course	VIVIAN M WYANT [redacted]	MATTHEW H YOUNG [redacted]
M	000001	HGET	------	03/01/97	10/11/96
M	003000	LOCK & TAG - GENERAL	------	03/01/97	10/11/96
M	020001	RAD WRKR TRNG II - INIT	020003	04/21/97	05/26/97
M	020032	SCOTT SKAPAK-MSA PAPR	020032	<<01/26/96>>	<<02/02/96>>
M	020041	BASIC RESP PROTECT TRNG	020041	04/02/97	03/28/97
M	020044	QUANTITATIVE MASK FIT	020044	04/02/97	03/28/97
M	020109	GENERAL EMP RAD TRNG	020108	03/01/98	10/11/97
M	020130	CONFND SPC ENTRY (CSE)	020130	05/26/97	12/07/97
M	020194	HEARING CONSERVATION	------	OK	OK
M	031220	40 HOUR HAZ WST WRKR (FIELD)	032020	01/30/97	02/01/97
M	170500	BASIC MEDIC FIRST AID	170500	07/12/97	04/03/97
D	000165	ASBESTOS GEN EMPL TRNG	------	03/01/97	10/11/96
D	02006L	ASBESTOS CONTROL	02006L	03/19/97	03/04/97
D	020107	BHVR BASED SAFETY TRNG	------	OK	OK
D	022004	DOE RCT STE ACAD(PHSE I PRT II	------	/ /	/ /
D	022045	HPT ORAL EXAM BOARD	022045	<<02/23/96>>	<<03/30/96>>
D	022120	HPT/RCT CYCLE #1	------	OK	OK
D	038100	EVENT COMMAND POST TRNG	------	OK	OK
D	03E025	BLDG EMERG PLAN-0263 BPC	03E025	09/26/96	09/15/96
D	170648	BLOODBORNE PATHOGENS-INI	170651	08/24/96	08/17/96
D	400600	B PLANT EP/APC - PROCESS	400600	09/26/96	09/16/96
D	400710	FACILITY ORIENT- INITIAL	400700	03/01/98	10/11/97
d	000390	OJT TRAINING WORKSHOP	------	OK	
d	000397	OJE TRAINING	------	OK	

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Westinghouse Hanford Company — **Internal Memo**

From: B Plant Training
Phone: 376-9264 S6-82
Date: January 18, 1994
Subject: BENEFICIAL USES SHIPPING SYSTEM (BUSS) CASK QUALIFICATION

To: D. M. Boger 1/18/94 S6-65
W. W. Bowen S6-65

cc: T. A. Brown S6-60
K. D. Knighton S6-82
M. W. Pawlak S6-65
E. D. Robbins S6-65
P. T. Saueressig S6-65
PJB File/LB

This is a letter to document the training and orientation received from Sandia National Laboratories (SNL) on the Beneficial Uses Shipping (BUSS) cask used at Waste Encapsulation and Storage Facility (WESF).

In May of 1993, in Albuquerque, New Mexico, the scope of work was to witness and/or perform hands-on training of the BUSS cask. This included disassembly and reassembly of the BUSS cask package. The draft certification training material was taken to evaluate and assure the technical adequacy. The specific activities involved the following:

- Removed the upper personnel barrier from transportation skid.
- Removed the transportation skid tie-down assemblies.
- Installed the horizontal lifting fixture.
- Installed the upper impact limiter lifting fixture.
- Transferred of the BUSS cask from the transportation skid (trailer) to the cask handling frame.
- Stabilized the BUSS cask on the handling frame.
- Removed of the impact limiter tie-down assemblies (impact limiter tape covers, impact limiter tapes and turnbuckle assemblies).
- Removed of the upper impact limiter.
- Removed of the horizontal lifting fixture.
- Lowered the bottom impact limiter.
- Removed the BUSS cask from the cask handling frame with the vertical lifting fixture.
- Removed the upper and lower covers (thermal and port).
- Installed seals in the upper and lower port covers.
- Installed the lid lifting fixture.
- Removed the lid.
- Installed the basket guide.
- Removed and reinstalled the capsule basket.
- Installed a lid seal.
- Removed the basket guide.
- Installed and torqued the lid bolts.
- Installed and properly torqued the port cover bolts.
- Installed the thermal covers.
- Removed the lid lifting fixture.

- Transferred the cask to the cask handling frame.
- Installed the lower impact limiter.
- Installed the upper impact limiter.
- Installed the impact limiter tie-down assemblies (impact limiter tape covers, impact limiter tapes and turnbuckle assemblies).

The following people have shown proficiency and met the performance requirements for the BUSS cask certification. Based on the training above these people are qualified and certified on the BUSS cask training package.

Tom A. Brown	Waste Encapsulation and Storage Facility (WESF) Operations Manager
Mike Pawlak	Cesium Recovery Program, BUSS Cask Custodian
Kathy Knighton	Technical Training Instructor
Paul Saueressig	Cesium Recovery Program, Advance Engineer

P. J. Bailey, Acting Manager
B Plant/WESF Opertions Training

rps

3.1.2

Westinghouse Hanford Company — **Internal Memo**

From: B Plant/WESF Training
Phone: 376-9264 S6-82
Date: February 9, 1994
Subject: BENEFICIAL USES SHIPPING SYSTEM (BUSS) CASK ENGINEER QUALIFICATION

To: D. M. Bogen S6-65 2/9/94
W. W. Bowen S6-65

cc: K. D. Knighton S6-82
M. M. Pereira S6-65
E. D. Robbins S6-65
PJB File/LB

The purpose of this letter is to document the training and orientation Mr. Pereira has received on Beneficial Uses Shipping System (BUSS) cask used at the Waste Encapsulation and Storage Facility (WESF).

In November and December of 1993, a process test procedure was used to evaluate the unloading the BUSS cask at WESF. This included disassembly and reassembly of the BUSS cask package per the approved process test procedure, PTP-E-995-00010, "Unload the Beneficial Uses Shipping System (BUSS) Cask". The specific activities involved the following:

- Removed the upper personnel barrier from transportation skid.
- Removed the transportation skid tie-down assemblies.
- Installed the horizontal lifting fixture.
- Installed the upper impact limiter lifting fixture.
- Transferred of the BUSS cask from the transportation skid (trailer) to the cask handling frame.
- Stabilized the BUSS cask on the handling frame.
- Removed of the impact limiter tie-down assemblies (impact limiter tape covers, impact limiter tapes and turnbuckle assemblies).
- Removed of the upper impact limiter.
- Removed of the horizontal lifting fixture.
- Lowered the bottom impact limiter.
- Removed the BUSS cask from the cask handling frame with the vertical lifting fixture.
- Removed the upper and lower covers (thermal and port).
- Installed seals in the upper and lower port covers.
- Installed the lid lifting fixture.
- Removed the lid.
- Installed the basket guide.
- Removed and reinstalled the capsule basket.
- Installed a lid seal.
- Removed the basket guide.
- Installed and torqued the lid bolts.
- Installed and properly torqued the port cover bolts.
- Installed the thermal covers.
- Removed the lid lifting fixture.

- Transferred the cask to the cask handling frame.
- Installed the lower impact limiter.
- Installed the upper impact limiter.
- Installed the impact limiter tie-down assemblies (impact limiter tape covers, impact limiter tapes and turnbuckle assemblies).
- Lowered the impact limiter platform.
- Rotated the cask in the horizontal position.
- Removed the upper impact limiter lifting fixture.
- Install impact limiter insert plugs.
- Transferred cask from cask handling frame to the transportation skid.
- Secured transportation skid tie down assemblies.
- Installed upper personnel barrier.

Mr. Pereira has shown proficiency and met the performance requirements for the BUSS cask certification as demonstrated during the process test evaluation. Based on the above process test evaluation, he is qualified and certified on the BUSS cask training package. If any additional information or documentation is required contact me at the above number.

Pat Bailey

P. J. Bailey, Manager
B Plant/WESF Training

rps

POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code: J4A13000
Manager: LEE, RANDALL G
Organization: RESOURCE POOL
Position: Riggers, jrn

Matrix Last Modified on 06/07/96
30 Days Delinquent Forecast

07/11/96 Position 3
08:20:49 Sheet 1 of 1

Course No.	Title	Retrain Course	BRUCE K TANK [redacted]
M 000001	HGET	------	<<08/04/96>>
M 020001	RAD WRKR TRNG II - INIT	020003	04/24/97
M 02006G	WASTE MANAGEMENT AWARENESS	------	OK
M 020702	RAD WORKER I/II REFRESH	020702	11/02/97
M 031110	24 HR RCRA TSD HAZ WASTE	032020	<<08/10/96>> Sch'd 7/30
M 044385	SCAFFOLD SAFETY	044385	11/01/98
M 170500	BASIC MEDIC FIRST AID	170500	08/07/97
D 003035	LOCK & TAG AUTH WRKR	003036	10/09/96
D 020107	BHVR BASED SAFETY TRNG	------	OK
D 020130	CONFND SPC ENTRY (CSE)	020130	10/04/97
D 020194	HEARING CONSERVATION	------	OK
D 034530	PERS SELF SURVEY - BETA	034530	03/06/98
D 03E025	BLDG EMERG PLAN-0263 BPC	03E025	07/08/97
D 040784	BASIC CRANE/RIGGING SFTY	040788	08/26/96
D 042720	AERIAL LIFT OPER TRNG	043920	07/14/97
D 042820	WIRE ROPE/RIG HRDWR INSP	042822	01/05/98
D 044480	MEDIUM RISK ELECT SFTY	044480	05/04/97
D 400710	FACILITY ORIENT- INITIAL	400700	08/04/97
D 400850	B PLANT SELF SURVEY TRNG	400850	03/06/98
D 402210	B PLANT EP/APC - GENERAL	402210	<<05/09/96>>
d 001005	OVERVIEW CONDUCT OPERTNS	------	
d 170652	QTRC - FALL ARREST/RESTR	------	
d 800658	RAD WORK TEAM	------	OK

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LEGEND

Upper case (M/D/C/P) = Course needed by all
Lower case (m/d/c/p) = Course needed by some
* = Retrain not to be maintained
<< >> = Course delinquent
/ / = Course needed (upper case) but not taken

Date = Course retrain date
OK = Course taken; no retrain required
**** = Course taken; retrain requirement not maintained
Blank = Course not needed (lower case) and not taken

To delete specific employee retrain dates for lower case (m, d, c, or p): See TMX Main Menu 5., TMX Course Alternates.

FACILITY EMERGENCY AND HAZARD INFORMATION CHECKLIST

RECORDS USE ONLY

EMPLOYEE *(who has sucessfully completed review)*

Name Santens Initials A. O. Payroll No. [redacted]

COURSE TITLE *Facility Emergency and Hazard Information Checklist*

DATE COMPLETED 2-19-96 COURSE NO. 03E025

REASON FOR REVIEW *(select one)* ☐ New Employee ☐ Transfer/Reassignment ☐ Annual Review

BUILDING EMERGENCY INFORMATION (PLAN, SUPPLEMENT, OR BOARD)

Plan WHC-IP-0263- X or WHC-IP-0603- _____ or Emergency Board for Bldg. _____

SEE BACK OF CHECKLIST FOR INSTRUCTIONS.

Completed	N/A	(Check as appropriate)	
☒	☐	1.	Review the emergency notification systems. Discuss the use of 911, 373-3800, PAX System, Fire Alarm Pull Boxes, and Crash Alarm Telephones.
☒	☐	2.	Identify the members of the Building Emergency Organizations:
			• Building Emergency Director (BED) • Building Warden (BW)
			• Bomb Search Team • Evacuation Bus Driver NONE
			• Accountability Aide
☒	☐	3.	Discuss the applicable emergency signals and responses. (Listen to emergency signals tape, 373-2345. For 400 area signals call 376-4444.) Discuss emergency signals that are unique to this facility.
☒	☐	4.	Discuss the accountability requirements and employee responsibilities during emergency events.
☒	☐	5.	Locate and discuss the proper use of the following:
			• exits
			• evacuation route(s) to primary and secondary staging areas
			• fixed and portable emergency equipment
			• fire extinguishers
			• safety showers
			• eye wash stations
			• PAX phones
			• fire alarm pull-boxes.
☒	☐	6.	Discuss the hazards associated with each section of the building visited and as appropriate locate and review associated contingency plan. Locate and discuss the following:
☒			• Material Safety Data Sheets and the written Hazard Communication Program for your facility and/or organization
☒			• Hazardous Waste and Hazardous Material Coordinator(s) for your facility
☒			• Hazardous Material Storage Area(s)
☒			• Hazardous Waste Accumulation and/or Storage Area(s)
☒			• Types of hazardous waste produced by you, your facility and/or organization
☒			• Proper labeling of containers at Hazardous Waste and Hazardous Material storage areas
☐			• Alternate evacuation routes for Hazardous Material/Waste Storage areas.

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Additional facility specific information provided: _____

Comments: _____

A review of this information has been completed as indicated on the checklist.

Allen L. Santens Employee Signature	2-19-96 Date
Ken Strong Authenticator Print Name	7-19-96 ~~MSIN~~
K.D. Strong Authenticator Signature	56-60 ~~Date~~

ORIGINAL TO TRAINING RECORDS G6-60

A-6000-784 (07/94)

FACILITY EMERGENCY AND HAZARD INFORMATION CHECKLIST

RECORDS USE ONLY

EMPLOYEE *(who has sucessfully completed review)*

t Name WALKUP Initials JR Payroll No. [redacted]

COURSE TITLE *Facility Emergency and Hazard Information Checklist*

DATE COMPLETED 7-19-96 COURSE NO. 03E025

REASON FOR REVIEW *(select one)* ☐ New Employee ☐ Transfer/Reassignment ☑ Annual Review

BUILDING EMERGENCY INFORMATION (PLAN, SUPPLEMENT, OR BOARD)

☑ Plan WHC-IP-0263- _____ or WHC-IP-0603- _____ or Emergency Board for Bldg. _____

SEE BACK OF CHECKLIST FOR INSTRUCTIONS.

Completed	N/A		(Check as appropriate)
☑	☐	1.	Review the emergency notification systems. Discuss the use of 911, 373-3800, PAX System, Fire Alarm Pull Boxes, and Crash Alarm Telephones.
☑	☐	2.	Identify the members of the Building Emergency Organizations:
			• Building Emergency Director (BED) • Building Warden (BW)
			• Bomb Search Team • Evacuation Bus Driver
			• Accountability Aide
☑	☐	3.	Discuss the applicable emergency signals and responses. (Listen to emergency signals tape, 373-2345. For 400 area signals call 376-4444.) Discuss emergency signals that are unique to this facility.
☑	☐	4.	Discuss the accountability requirements and employee responsibilities during emergency events.
☑	☐	5.	Locate and discuss the proper use of the following:
			• exits
			• evacuation route(s) to primary and secondary staging areas
			• fixed and portable emergency equipment
			• fire extinguishers
			• safety showers
			• eye wash stations
			• PAX phones
			• fire alarm pull-boxes.
☑	☐	6.	Discuss the hazards associated with each section of the building visited and as appropriate locate and review associated contingency plan. Locate and discuss the following:
☑			• Material Safety Data Sheets and the written Hazard Communication Program for your facility and/or organization
☑			• Hazardous Waste and Hazardous Material Coordinator(s) for your facility
☑			• Hazardous Material Storage Area(s)
☑			• Hazardous Waste Accumulation and/or Storage Area(s)
☑			• Types of hazardous waste produced by you, your facility and/or organization
☑			• Proper labeling of containers at Hazardous Waste and Hazardous Material storage areas
☑			• Alternate evacuation routes for Hazardous Material/Waste Storage areas.

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Additional facility specific information provided: _____

Comments: _____

A review of this information has been completed as indicated on the checklist.

John R. Walkup — Employee Signature — 7-19-96 — Date

K D Strong — Authenticator Print Name — 56-60 — MSIN

Ken Strong — Authenticator Signature — 7-19-96 — Date

FACILITY EMERGENCY AND HAZARD INFORMATION CHECKLIST

RECORDS USE ONLY

EMPLOYEE *(who has sucessfully completed review)*

Name Lawrence Initials DA Payroll No. [redacted]

COURSE TITLE *Facility Emergency and Hazard Information Checklist*

DATE COMPLETED 7-19-96 COURSE NO. 03E025

REASON FOR REVIEW *(select one)* ☐ New Employee ☐ Transfer/Reassignment ☒ Annual Review

BUILDING EMERGENCY INFORMATION (PLAN, SUPPLEMENT, OR BOARD)

Plan WHC-IP-0263- _____ or WHC-IP-0603- _____ or Emergency Board for Bldg. _____

SEE BACK OF CHECKLIST FOR INSTRUCTIONS.

Completed	N/A	(Check as appropriate)	
☒	☐	1.	Review the emergency notification systems. Discuss the use of 911, 373-3800, PAX System, Fire Alarm Pull Boxes, and Crash Alarm Telephones.
☒	☒	2.	Identify the members of the Building Emergency Organizations:
			• Building Emergency Director (BED) • Building Warden (BW)
			• Bomb Search Team • Evacuation Bus Driver
			• Accountability Aide
☒	☐	3.	Discuss the applicable emergency signals and responses. (Listen to emergency signals tape, 373-2345. For 400 area signals call 376-4444.) Discuss emergency signals that are unique to this facility.
☒	☐	4.	Discuss the accountability requirements and employee responsibilities during emergency events.
☒	☐	5.	Locate and discuss the proper use of the following:
			• exits
			• evacuation route(s) to primary and secondary staging areas
			• fixed and portable emergency equipment
			• fire extinguishers
			• safety showers
			• eye wash stations
			• PAX phones
			• fire alarm pull-boxes.
☒	☐	6.	Discuss the hazards associated with each section of the building visited and as appropriate locate and review associated contingency plan. Locate and discuss the following:
			☒ • Material Safety Data Sheets and the written Hazard Communication Program for your facility and/or organization
			☒ • Hazardous Waste and Hazardous Material Coordinator(s) for your facility
			☒ • Hazardous Material Storage Area(s)
			☒ • Hazardous Waste Accumulation and/or Storage Area(s)
			☒ • Types of hazardous waste produced by you, your facility and/or organization
			☒ • Proper labeling of containers at Hazardous Waste and Hazardous Material storage areas
			☒ • Alternate evacuation routes for Hazardous Material/Waste Storage areas.

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Additional facility specific information provided: _____

Comments: _____

A review of this information has been completed as indicated on the checklist.

Employee Signature — Date: 7-19-96

Authenticator Print Name: Ken Strong — MSIN: 7-19-96

Authenticator Signature: K.D. Strong — Date: 7-19-96

FACILITY EMERGENCY AND HAZARD INFORMATION CHECKLIST

EMPLOYEE *(who has sucessfully completed review)*

Last Name Aurkland Initials BA Payroll No. [redacted]

COURSE TITLE *Facility Emergency and Hazard Information Checklist*

DATE COMPLETED 7-26-96 COURSE NO. 03E025

REASON FOR REVIEW *(select one)* ☐ New Employee ☐ Transfer/Reassignment ☒ Annual Review

BUILDING EMERGENCY INFORMATION (PLAN, SUPPLEMENT, OR BOARD)

Plan WHC-IP-0263- BPC or WHC-IP-0603- _____ or Emergency Board for Bldg. _____

SEE BACK OF CHECKLIST FOR INSTRUCTIONS.

Completed	N/A	(Check as appropriate)	
☒	☐	1.	Review the emergency notification systems. Discuss the use of 911, 373-3800, PAX System, Fire Alarm Pull Boxes, and Crash Alarm Telephones.
☒	☐	2.	Identify the members of the Building Emergency Organizations:
			• Building Emergency Director (BED) • Building Warden (BW)
			• Bomb Search Team • Evacuation Bus Driver
			• Accountability Aide
☒	☐	3.	Discuss the applicable emergency signals and responses. (Listen to emergency signals tape, 373-2345. For 400 area signals call 376-4444.) Discuss emergency signals that are unique to this facility.
☒	☐	4.	Discuss the accountability requirements and employee responsibilities during emergency events.
☒	☐	5.	Locate and discuss the proper use of the following:
			• exits
			• evacuation route(s) to primary and secondary staging areas
			• fixed and portable emergency equipment
			• fire extinguishers
			• safety showers
			• eye wash stations
			• PAX phones
			• fire alarm pull-boxes.
☒	☐	6.	Discuss the hazards associated with each section of the building visited and as appropriate locate and review associated contingency plan. Locate and discuss the following:
		☒	• Material Safety Data Sheets and the written Hazard Communication Program for your facility and/or organization
		☒	• Hazardous Waste and Hazardous Material Coordinator(s) for your facility
		☒	• Hazardous Material Storage Area(s)
		☒	• Hazardous Waste Accumulation and/or Storage Area(s)
		☒	• Types of hazardous waste produced by you, your facility and/or organization
		☒	• Proper labeling of containers at Hazardous Waste and Hazardous Material storage areas
		☒	• Alternate evacuation routes for Hazardous Material/Waste Storage areas.

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Additional facility specific information provided: _____

Comments: REVIEW OF HAZARD COMMUNICATION PROGRAM PER WHC-CM-5-6, SECTION 11.3 INCLUDED.

A review of this information has been completed as indicated on the checklist.

Employee Signature — Date: 7-26-96

S-R. STARK — MSIN: S6-82

Authenticator Print Name

Authenticator Signature — Date: 7-26-96

ORIGINAL TO TRAINING RECORDS G6-60

A-6000-784 (07/94)

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

_X__Final

Checklist Item:

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3.2.3

Acceptance Criteria:

Evidence that operating personnel have been trained to operating procedure updates or additions related to the return of cesium capsules.

Discussion:

Preparedness items 2.2.2 and 2.3.1 identified and statused the procedures which are specifically required the return of cesium capsules.

Operations personnel are required to review procedure updates and then sign and date the Procedure Change Summary and Signature Sheet. The sheets for each of the procedures (8 procedures total) for capsule return are attached with signatures of operators which are qualified for Byproducts Cask handling.

Historically 8 operators have been certified/qualified for By Products Cask (BUSS cask). As identified in preparedness item 3.1.1 only 4 operators are required for receipt. At this time at least 6 have signed all changes. Therefore, the minimum of four operators has been met.

Supporting Documentation:

Copy of Plant Operating Documents Data System listing the 8 procedures and issued changes.

Outstanding Items/Limitations:

- Punch list item to ensure all operators assigned to capsule return at WESF have reviewed and signed the PCSSSs.

Completion: L. D. Brist Date: 8/2/96

Concurrence: P. T. Saueressig Date: 8/6/96

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
All EO, BO, and CO procedures	VARIOUS

A Number (if applicable)	Effective Date of Change
N/A	AS ISSUED

Affected Page/Step | Summary of Change | Reason for Change

All operating procedures are being updated to reflect re-engineering title and organization changes. The changes are being made and the procedure is being issued as a retype-revision, (i.e., a Rev A-0 procedure is becoming a Rev A-1). Outstanding PCAs are incorporated into the new revision also. The revised procedures are being transferred onto the PROC INFO directory as they are approved. Golden rods are being issued as soon as possible but there may be a 2 to 3 day delay due to the volume of procedures being processed.

The changes being made are as follows:

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OLD TERM	NEW TERM
Shift Manager	Operations Supervision
Operations Manager	Cognizant Team Coordinator
Facility Manager	Cognizant Project Activity Manager
Cognizant Engineer	System Engineer
Regulatory Compliance	Regulatory Compliance (no change)
Work Control	Near Term Planning
Maintenance Manager	Cognizant Team Coordinator

ur priority for changing procedures is as follows:

Emergency Procedures, Surveillance Procedures and Frequently used procedures will be completed by June 24 (Reengineering implementation).

All others will be completed within 30 days of reengineering implementation or "first use".

Please contact Steve Froehlich (372-0072 or Kris Hedquist 372-1436) if you have any questions.

(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
	6/13/96		6/22/96
	6-13-96		6-30-96
	6/14/96		7-24-96
	6-15-96		7-25-96
	6-15-96		7-31-96
	6-17-96		8-2-96
	6-20-96		

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-100-012, C-0	OPERATE THE GO-NO-GO GAGE AND EXAMINE CAPSULES

PCA Number (if applicable)	Effective Date of Change
N/A	1/31/96

Affected Page/Step	Summary of Change	Reason for Change
ENTIRE PROCEDURE--NEW REVISION	UPDATED PROCEDURE TO WHC-IP-1182, CHPT 16 REQUIREMENTS. INCORPORATED OUTSTANDING PCAs.	

(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
M. L. Harmon	7-25-96		8-2-96
D. W. Sederburg	7-25-96		8/8/96
L. Harmon	7-26-96		8-8-96
W. W. [illegible]	7/26/96		
Steve Bajorek	7-27-96		
K. L. Burton	7-29-96		
B. J. Lundy	8-1-96		
J. W. Lawrence	8-2-96		

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-100-023, B-0	UNLOAD THE BENEFICIAL USES SHIPPING SYSTEM (BUSS) CASK

PCA Number (if applicable)	Effective Date of Change
N/A	12-8-95

Affected Page/Step	Summary of Change	Reason for Change
ENTIRE PROCEDURE--NEW REVISION	UPDATED PROCEDURE TO WHC-IP-1182, CHPT 16 REQUIREMENTS. INCORPORATED OUTSTANDING PCAs.	

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(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
[illegible]	7-25-96	[illegible]	8-2-96
[illegible]	7-25-96	[illegible]	8-7-96
[illegible]	7-26-96	[illegible]	8/8/96
[illegible]	7/26/96	[illegible]	8-8-96
[illegible]	7-27-96		
[illegible]	7-29-96		
[illegible]	8-1-96		
[illegible]	8-2-96		

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-906-003 Rev F-0	Transfer and Storage of Capsules

PCA Number (if applicable)	Effective Date of Change
BP2-~~99~~ 96-046 LD 5/23/96	05-13-96

Affected Page/Step | Summary of Change | Reason for Change

Revised entire procedure to bring into compliance with WHC-CM-3-5 section 12.5.

Corrected minor problems.

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(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
[signature]	5/23/96	[signature]	6-12-96
[signature]	5-23-96	[signature]	6-22-96
[signature]	5-24-96	[signature]	7-24-96
[signature]	5/26/96	[signature]	8-2-96
[signature]	6-1-96		
[signature]	6-1-96		
[signature]	6-11-96		
[signature]	6/15/96		

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-909-001	WESF 15-Ton Canyon Crane
PCA Number (if applicable)	**Effective Date of Change**
n/a	11/20/95

Affected Page/Step	Summary of Change	Reason for Change
	Upgraded procedure with new format to meet the upgrade criteria established in WHC-CM-3-5 Section 12.5 Technical procedure Standards. General human factor references to switches etc. made to match the installed labels. No technical changes made.	

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(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
K A Burton	12-7-95		3-7-96
H L Dorman	12-8-95		3/8/96
	12-8-95		3-18-96
	1/30/96	ABMarsh	27 MARSH 96
	3-8-96		5-7-96
	3-7-96	B F Walle	6-22-96
L Lamman	7-24-96		8-8-96

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-909-003 Rev B-0	Operate In-Cell Hoist
PCA Number (if applicable)	**Effective Date of Change**
n/a	

Affected Page/Step	Summary of Change	Reason for Change
	Complete revision for format. No significant technical changes occured.	

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(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
	5-1-96		5/20/96
	5-1-96		6/20/96
	5-2-96		6/22/96
	5/2/96		7-24-96
	5-5-96		7-31-96
	5-7-96		8-2-96
	6-11-96		

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-909-009, D-0	REMOVE AND INSTALL TRUCK PORT, G-CELL, AND POOL CELL COVER BLOCKS

PCA Number (if applicable)	Effective Date of Change
N/A	03/28/96

Affected Page/Step	Summary of Change	Reason for Change
ENTIRE PROCEDURE--NEW REVISION	UPDATED PROCEDURE TO WHC-IP-1182, CHPT 16 REQUIREMENTS. INCORPORATED OUTSTANDING PCAs. ALSO REFLECTS OSR DELETIONS PER ECN 169399 TO WESF SAR.	

Appendix A
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(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
[illegible]	7-25-96	[illegible]	8-2-96
[illegible]	7-25-96	[illegible]	8/8/96
[illegible]	7-26-96	[illegible]	8-14-96
[illegible]	7/26/96		
[illegible]	7-27-96		
[illegible]	7-29-96		
[illegible]	8-1-96	[illegible]	8-2-96

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-909-011 C-0	Operate 25-Ton Crane
PCA Number (if applicable)	**Effective Date of Change**
n/a	

Affected Page/Step	Summary of Change	Reason for Change
Total procedure	The entire procedure was reformated minor technical wording changes were also made.	

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(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
	5-1-96		5/26/96
K.A. Burton	5-1-96		6-18-96
	5-2-96		6-22-96
	5/2/96		7-24-96
	5-5-96		8-2-96
G.L. Garman	6-11-96		

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-912-006 D-0	Enter G-Cell

PCA Number (if applicable)	Effective Date of Change
EO-0557	~~8 March 1996~~ ~~for~~ 3-19-96 3-19-96

Affected Page/Step	Summary of Change	Reason for Change

The following WESF OSRs have been deleted per ECN 169399 from the WESF SAR

Section	Description	USQ Screening
11.4.1	Fire Protection	WESF-95-130
11.4.2	HVAC	WESF-95-158
11.4.4	Hydrogen in Process Vessels	WESF-95-160
11.4.9	BUSS Cask Drop	WESF-95-161

All references to these OSR have been deleted from the procedure.

OSD-B-257-0051 Rev E-0 has been changed to incorporate the OSR limits as operational limits.

See PCA for details on each procedure change.

(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
	3-20-96		7-7-96
	3-20-96		7-24-96
	3-20-96		7-24-96
	3/21/96		
	3-22-96		
	3-22-96		
	3-22-96		
	3-27-96		
	3-25-96		
	27 MAR 1996		
	4/5/96		
	4/8/96		
	4-17-96		
	5/20/96		

(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-912-006 D-0	G-Cell Entry
PCA Number (if applicable)	**Effective Date of Change**
EO-0565	19 March 1996

Affected Page/Step | Summary of Change | Reason for Change

The following WESF OSRs have been deleted per ECN 169399 from the WESF SAR

Section	Description	USQ Screening
11.4.1	Fire Protection	WESF-95-130
11.4.2	HVAC	WESF-95-158
11.4.4	Hydrogen in Process Vessels	WESF-95-160
11.4.9	BUSS Cask Drop	WESF-95-161

All references to these OSR have been deleted from the procedure.

OSD-B-257-0051 Rev E-0 has been changed to incorporate the OSR limits as operational limits.

See PCA for details on each procedure change.

(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
	3-20-96		5/20/96
	3-20-96		7-1-96
	3-20-96		7-20-96
	3/21/96		7-24-96
	3-22-96		
	3-22-96		
	3-22-96		
	3-22-96		
	3-25-96		
	27 MARCH 96		
	4/5/96		
	4/6/96		
	4-17-96		

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(If room for additional signatures is needed, they may be placed on the back)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
Eo-912-006, D-0	Enter G Cell
PCA Number (If applicable)	**Effective Date of Change**
EO-00570	04/03/96

Affected Page/Step	Summary of Change	Reason for Change
Page 8, Step [15]	Clarified that step [15] was performed in conjuction with step [16].	Clarification
Page 8, Step [15]	Correct the K-3 supply damper number (K3 DPC 1-1) and added K-3 exhaust duct pressure number (K3 DPI 3-22).	Correction and Clarification.
Page 9, Step [16]	Correct the K-3 supply damper number (K3 DPC 1-1).	Correction.
Page 9, Step [19]	Correct the K-3 supply damper number (K3 DPC 1-1).	Correction.

(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
	4-15-96		4-24-96
	4/17/96		5-7 96
	4-17-96		5 7 96
	4/18/96		5/21/96
	4-20-96		7-7-96
	4-20-96		
	4-21-96		7-24 96
	4-21-96		

(If room for additional signatures is need

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-912-006, D-0	Enter G Cell
PCA Number (if applicable)	**Effective Date of Change**
EO-00571	04/04/96

Affected Page/Step	Summary of Change	Reason for Change
Page 9, Step [16]	Incorrect units for dose rate mrad/hr versus mrem/hr.	Clarification

(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
[signature]	4-15-96	[signature]	5-7-96
[signature]	4/17/96	[signature]	
[signature]	4/18/96	[signature]	5/20/96
[signature]	4-20-96	[signature]	4-20-96
[signature]	4-20-96	[signature]	7-24-96
[signature]	4-21-96		
[signature]	4-21-96		
[signature]	4-24-96		

(If room for additional signatures is needed,

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
912-006, D-0	Enter G Cell
... Number (if applicable)	Effective Date of Change
EO-00571	04/04/96

Affected Page/Step	Summary of Change	Reason for Change
Page 9, Step [16]	Incorrect units for dose rate mrad/hr versus mrem/hr.	Clarification

(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
	4/5/96		5.7.96
	4-6-96		5/20/96
	4-6-96		7-7-96
	4-6-96		
	4-6-96		7-24-96
	4/6/96		
	4/8/96		
	5-7-96		

(If room for additional signatures is needed, th

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.1.1 - July 9, 1996

Acceptance Criteria:

Documentation that shows outstanding WESF work packages, including those that require engineering, are evaluated to determine those that require completion prior to cesium capsule receipt. Management has concurred with the decisions on those packages that are not required for cesium capsule receipt.

Discussion:

The Capsule Management Team reviewed the attached list of outstanding WESF work packages with regard to their impact for safe receipt of ARECO cesium capsules.

Work packages addressing OSR Preventive Maintenance and instrument calibrations due during July, 1996; corrective maintenance involving the ventilation systems which would impact receipt of capsules; and work required on equipment directly associated with BUSS Cask handling were the focus of this review.

The activities listed below as were identified by the team as requiring completion prior to capsule return.

Repair BUSS Cask trailer	2B-96-01164
Repair K3-7-1 actuator	2B-96-01135
Prepare 2 spare manipulators	2B-96-01112
Reassemble BUSS Cask trailer	2B-96-01190
Complete OSR PMs/Instrument Calibrations (July)	2B-96-01107 (diesel weekly test), 2B-96-01110 (pool cell weight factor instruments), 2B-96-01114 (PS-K1-1-1), 2B-96-01115 (radiation monitoring instruments).

Supporting Documentation:

Attached is the work control data base listing Capsule Management work packages.

Outstanding Items/Limitations:

OSR PMs and calibrations, subsequent to July, will be completed within their specified periodicity, as well as those PMs directly associated with BUSS Cask and handling equipment.

Completion: R.D. Warren — Date: 7/26/96
R. D. Warren/C. Clemmons

Concurrence: Paul T. Saueressig — Date: 7/26/96
P. T. Saueressig

DOC JX NUM.....	System Code	Work Item Title.....	Doc. Loc..... Current	Current... Workstatus	Work Status Chg. Dt. Current
2B-90-02423	C12	REMOVE CAUSTIC FROM CONDUITS IN WESF	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-91-00972	C12	CONVERT SUBSTATION C8-S26 CIRCUIT BREAKERS	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-93-01169	C12	ISOLATE GROUND AND NEUTRAL AT WESF	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-32358	C12	FAB LABEL PER WHC-IP-1182	SCHUMACHER,RF	WRK-NRR	02/06/96
2B-95-00679	C12D	PM 2C22019 BUS, 480 V, C8-S26 SUB. INSPECT.	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-96-00676	C12D	FAB. & INSTALL BREAKER HOIST IN C8-S26	ANDERSON,BS	SCH-MAT	05/16/96
2B-96-00798	C12D	INSTALL TBX FOR PROJECT W252 TEMP POWER		WPP-RES	06/06/96
2B-96-01176	C12D	ENGRAVE AND INSTALL EQUIPMENT TAGS IN C8S26	CAPSULE MANAGEMENT	WRK-NRR	07/15/96
2B-94-00855	C12E	DISC. & REMOVE ABANDONED DIESEL CONTROLS 225BC	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-95-01068	C12E	WESF BACKUP ELECTRICAL SYSTEM SEQUENCER TUNEUP	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-96-00653	C12E	WESF DIESEL GENERATOR ENGINE TUNE-UP	CLEMMONS,C	WPP-RES	04/17/96
2B-96-00915	C12E	PM 2C22010 225-B DIESEL ENGINE & STANDBY GENER	CAPSULE MANAGEMENT	WRK-REL	06/21/96
2B-96-01098	C12E	PM 2C22007 STANDBY GEN AUTO TRANSFER			
2B-96-01107	C12E	PM 2C22010 225B DIESEL ENGINE & STNDBY GEN OSR	CLEMMONS,C_	WPP-APP	06/25/96
2B-96-01108	C12E	PM 2C22007 225-B STNDBY GEN. AUTO TRAN (OSR)	CLEMMONS,C_	WPP-APP	06/25/96
2B-96-00032	C12F	INSTALL YARD LIGHTING AT 225B	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-96-00113	C12F	RELAMP - WESF AND WESF SUPPORT BUILDINGS	SCHUMACHER,RF	WRK-NRR	02/06/96
2B-96-00905	C12F	RELAMP - WESF & WESF SUPPORT BUILDINGS - JUN96	SCHUMACHER,RF	WRK-NRR	06/03/96
2B-96-01165	C12F	RELAMP WESF AND SUPPORT BUILDINGS - JULY 96	CAPSULE MANAGEMENT	WRK-REL	07/12/96
2B-93-01185	C12G	IDENTIFY AND LABEL LIGHTING PANEL CTS. 225B	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-00373	C12G	225BE, GROUND TRANSFORMER,CORRECT PANEL GROUND	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-95-00741	C12G	INSTALL REELITE IN HOT SHOP	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-96-00649	C12G	INSTALL RECEPTICLES K3 HEAT TRACE	STORM,MP	WPP-RES	05/02/96
2B-91-01053	C12H	INSTALL ALTERNATE POWER SOURCE 225BD & PNL C	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-96-00067	C12H	REPLACE MCC CIRCUIT BREAKERS	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-93-00787	C12J	PM 2C22017 480 VT MOTOR CONT. CTRS 2 & 4 (OSR)	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-94-00869	C12J	PM 2C22018 480-VOLT MOTOR CONTROL CENTERS #3	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-00960	C12J	PM2C22016 480-V MOTOR CONTROL CENTER #1 (225-B	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-96-00549	C12J	LOAD SURVEY OF 225B & 225BC MCC COMPARTMENTS	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-94-01128	C12L	DISCONNECT HEAT TRACE,225BC COOLING TOWER LINE	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-00588	C12P	RELAMP WESF OPERATING GALLERY	CAPSULE MANAGEMENT	WRK-REL	07/12/96
2B-96-00740	C12P	POOL CELL EMERGENCY LIGHTING	STORM,MP	WPP-RES	05/02/96
2B-96-01015	C20	REPL. STRAINER/RAW WATER LINE TO AFTERCOOLER.	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-96-01104	C20	PM 2C24001 CLEAN RAW WATER	CLEMMONS,C_	WPP-APP	06/25/96

DOC JX NUM.....	System Code	Work Item Title.....	Doc. Loc..... Current	Current... Workstatus	Work Status Chg. Dt. Current
2B-90-02122	C20A	STRAINERS/FILTERS INST PRESS GAUGE ON RAW WATER LINE TO POOL CEL	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-93-00890	C20A	C/W CBRS CALIB. PI/TE/PS-IA/RW-1-6. - WESF.	NUNN,LL	WPP-ENG	04/19/96
2B-96-00568	C20A	VALVE PC-9-5000-2 IS HARD TO OPEN	STEEL,MD	WRK-NRR	04/23/96
2B-96-00715	C20A	INSULATE RAW WATER LINE WESF OP GALLERY	SHAW,GC	WRK-NRR	04/23/96
2B-96-00725	C20A	TROUBLESHOOT PROBLEM WITH VALVE 225BC-6400-5.	STEEL,MD	WRK-NRR	05/02/96
2B-95-00844	C21	REMOVE RPBA FROM SERVICE AT G CELL IN WESF.	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-93-00419	C21A	INST HOSE BIBS ON SANITARY WATER LINES - WESF	SHANNON,WR	PWR-PSR	06/27/96
2B-96-00373	C21C	REMOVE WESF SAFETY SHOWERS/EYEWASH	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-01005	C21C	SUPPORT DEIONIZED WATER INSTALLATION			
2B-95-00793	C22	INSTALL NEW STEAM TRAP IN WESF POOL CELL AREA.	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-00919	C22	REMOVE THE INTEGRATOR AT THE WESF PRV STATION	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-32749	C22	REMOVING/INSTALLING INSULATION	JONES,SE	WRK-NRR	02/07/96
2B-96-00219	C22	STEAM VALVE AMU-5000-1 IS LEAKING.	STEEL,MD	WRK-NRR	02/20/96
2B-96-00594	C22	REMOVE INSULATION ON STEAM PIPING AT WESF AMU	SHAW,GC	WRK-NRR	04/04/96
2B-96-00751	C22	REPACK VALVE AMU-5100-2 WESF AMU.	STEEL,MD	WRK-NRR	04/29/96
2B-96-00879	C22	REMOVE/INSTALL INSULATION K3 REHEAT COIL PIPE	SHAW,GC	WRK-NRR	05/17/96
2B-96-00913	C22	EXTEND STEAM BLOWDOWNS AT STEAM TRAP STNS/WESF	STEEL,MD	WRK-NRR	05/23/96
2B-96-00979	C22	REPAIR STEAM LEAK IN PRE-HEAT PIPING AT K4.	STEEL,MD	WRK-NRR	06/04/96
2B-96-00988	C22	INST. STM. TRAPS AND ISOLATION VALVES/K1,2,&3.	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-93-00966	C23	INSTALL NEW PRESSURE RELIEF VALVES	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-94-00142	C23	PM2C23019 LUB. & INSPECT. OF WESF 1&2 COMPRESS	GAINEY,T	PWR-PSR	06/27/96
2B-95-00626	C23	INSTALL PORTABLE AIR COMPRESSORS AT WESF.	DS READY FILE	SCH-CDN	07/16/96
2B-95-00925	C23	WESF SAHARA AIR DRYER STRIP CHART RECORDER	DAVIS,SJ	WPP-ENG	11/10/95
2B-95-01041	C23	WESF DESICCANT AIR DRYER TOWER INSTALLATIONS	GAINEY,T	PWR-PSR	06/27/96
2B-95-32410	C23	TROUBLESHOOT SYSTEMS, EQUIP	STEEL,MD	WRK-NRR	02/09/96
2B-96-00087	C23	WESF PORTABLE AIR COMP ELECTRICAL INSTALLATION	DEACTIVATION SUPPORT	PWR-PSR	06/21/96
2B-96-00790	C23	CLEAN WATER STRAINER AT WESF	STEEL,MD	WRK-NRR	05/03/96
2B-96-00950	C23	REPLACE SAFETY RELIEF VALVE ON 225BC AIR RCVR		WPP-RES	06/06/96
2B-96-00975	C23	PM 2C24005 AIR DRYER INSPECTION 225-BC	CAPSULE MANAGEMENT	PWR-PSR	06/18/96
2B-96-01001	C23	MOVE COMPRESSORS/B PLT TO WESF/WESF TO B PLT.	STORM,MP	WPP-ENG	06/10/96
2B-96-01010	C23	REPAIR WESF AIR DRYER	CLEMMONS,C	WPP-RES	06/10/96
2B-96-01053	C23	C/W PM/S CALIB. WFT/WFR/WFAS-100-1/4 AT WESF.	CAPSULE MANAGEMENT	WRK-REL	06/27/96

DOC JX NUM.....	System Code	Work Item Title.....	Doc. Loc..... Current	Current... Workstatus	Work Status Chg. Dt. Current
2B-90-01929	C23A	INSTALL DEW POINT DEMAND CONTROLLER-SAHARA	GAINEY,T	PWR-PSR	06/27/96
2B-90-03415	C23A	REPAIR KAHN AIR DRYER	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-93-00310	C23A	REPLACE THE INSTR. AIR HDR. IN WESF TRK PORT	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-93-01042	C23A	CHK/REP/RECALIB. PI'S WITH NEW ISOLATION VLVS.	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-94-01279	C23A	REPLACE PRESSURE RELIEF VALVE IN WESF HVAC	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00790	C23A	PM 2C22012 225-BC AIR DRYER ELECTRICAL INSPECT	GAINEY,T	PWR-PSR	06/27/96
2B-95-00929	C23A	TEST THE 225B/WESF INSTRUMENT AIR	GAINEY,T	WPP-ENG	07/12/96
2B-93-00889	C23B	C/W CBRS CALIB. PS/PI/DPI-PA-1-6. - WESF.	GAINEY,T	PWR-PSR	06/27/96
2B-96-00959	C23B	REP. AIR LEAK AT VLV/WESF PORTABLE COMPRESSOR.	STEEL,MD	WRK-NRR	05/31/96
2B-95-00948	C24	UNPLUG WEIGHT FACTOR DIP TUBES/TK 202 AT WESF.	NUNN,LL	WPP-APP	01/25/96
2B-96-00694	C24	WESF AMU LABELING OF ROOMS, NOZZELS, AND LINES	BRIST,LD	WPP-RES	05/02/96
2B-93-00873	C24A	DRAIN MANOMETERS IN TRANSMITTER ROOMS	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-94-00896	C24A	HEAT TRACE FOR TK 207	BRIST,LD	PWR-PSR	06/27/96
2B-96-00457	C24A	HAUL EXCESS MATERIAL TO 1167 BLDG (BSA/3/14/96	JONES,SE	WRK-NRR	03/26/96
2B-93-01436	C25	CHECK AIR BALANCE OF 225B	GAINEY,T	WPP-ENG	07/15/96
2B-95-00585	C25	REPLACE MANIP. SHOP HEAT PUMP WITH A/C UNIT.	GAINEY,T	WPP-ENG	07/15/96
2B-95-01252	C25	PM 2C24004 HEAT PUMP FILTER CHANGE/INSP. MANIP	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-32587	C25	CRAFT SUPPORT TO ENG/PLN & OPS	CLARK,GC	WRK-NRR	02/09/96
2B-95-32795	C25	MOVING/STAGING EQUIPMENT	THOMAS,AR	WRK-NRR	02/07/96
2B-96-00076	C25	PM 2C23009 LUBE & INSPECTION OF MISC EQUIPMENT	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-00552	C25	ENGRAVE AND INSTALL LABELS FOR PI'S AND PRV'S.	THOMAS,AR	WRK-NRR	05/02/96
2B-96-00661	C25	HVAC COMPONENT RELABEL	MCDANIEL,KS	WPP-RES	05/02/96
2B-96-00894	C25	RELOCATE AIRLOCK DOOR LIMIT SWITCH	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-96-00982	C25	PM 2C24002 REFRIG COMPRESSOR/CHILLED H20 SYST.	JONES,SE	WRK-REL	06/19/96
2B-96-01035	C25	REPLACE K2 AND K3 SUPPLY ROLL FILTERS	CLEMMONS,C	WPP-RES	07/08/96
2B-96-01114	C25	C/W PM/S CALIB PS-K1/K2/K3/K4 AND DPI K3	RCT	PWR-PSR	07/03/96
2B-96-30137	C25	REPL COVERS/SCREWS ON PANELS	JONES,SE	WRK-NRR	03/04/96
2B-96-30209	C25	CRAFT SUPPORT TO ENG/PLN & OPS	THOMAS,AR	WRK-NRR	03/04/96
2B-90-02685	C25A	K-1 VENTILATION UPGRADE CABLE BARRIERS NEW CKT	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-95-00605	C25A	BLANK SUPPLIED AIR DUCT, CEILING TO AIR LOCK	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-96-01036	C25A	REPLACE K-1 SUPPLY BAG FILTERS	CLEMMONS,C	WPP-RES	07/08/96
2B-90-00620	C25C	REPAIR CELL INLET DAMPERS AT WESF	GAINEY,T	WPP-ENG	07/15/96
2B-95-00413	C25C	REPLACE PROCESS CELL SUPPLY FILTERS	CRAWFORD,RE	WPP-RES	12/04/95
2B-96-00648	C25C	MODIFY LINKAGE ON K3-6-1 INLET DAMPERS.	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-00878	C25C	K3 SUPPLY FAN TEMP SWITCH BYPASS		WPP-RES	06/06/96
2B-95-01218	C25D	REPLACE BREAKER FOR K4-6-1 SUPPLY FAN	CAPSULE MANAGEMENT	PWR-PSR	06/17/96

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2B-95-32680	C25D	TROUBLESHOOT SYSTEMS, EQUIP	STEEL,MD	WRK-NRR	02/07/96
2B-96-01183	C25D	TROUBLESHOOT EVAPORATOR SECTION OF K4-6-1	CAPSULE MANAGEMENT	WRK-NRR	07/15/96
2B-92-00394	C25E	K-1 EXH. FANS INSTRUMENT AIR ISOLATION VALVS	LITIGATION FILE	PWR-PSR	02/12/96
2B-94-00309	C25E	REPLACE K1 EXH. ISOLATION DAMPER MOTORS	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-94-00851	C25E	SYNCHRONIZE K1 EXHAUST FLOW DAMPERS	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00868	C25E	INSTALL ISOLATION VALVES AT K1 EXHAUST.	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-01228	C25E	K1-1 EXHAUST PRE-FILTER	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-00337	C25E	INSTALL AEROSOL TEST PORT ON K1 EXHAUST DUCT	JONES,SE	WRK-REL	06/11/96
2B-96-00923	C25E	FABRICATE DOP TEST PORT	STEEL,MD	WRK-NRR	06/10/96
2B-96-00933	C25E	ERECT SCAFFOLD AT WESF K1 EXHAUST DUCT	STEEL,MD	WRK-NRR	06/10/96
2B-96-00937	C25E	REPAIR K1-7-1 EXHAUST FAN MOTOR BEARINGS		WPP-RES	06/06/96
2B-93-00411	C25F	K2-7-1 EXHAUST FAN DAMPER	GAINEY,T	WPP-ENG	07/15/96
2B-95-00616	C25F	C/W CBRS CALIB PS-K2-1-3 AT WESF.	GAINEY,T	PWR-PSR	06/27/96
2B-90-02065	C25G	A-CELL AIRLOCK FILTERS	CAPSULE MANAGEMENT	PWR-PSR	06/18/96
2B-90-02693	C25G	K3 SUPPLY AIR FILTER MODIFICATION	LITIGATION FILE	PWR-PSR	02/12/96
2B-90-02822	C25G	INSTRUMENT AIR TEST/CALIB SOURCE AT K3 FANS	LITIGATION FILE	PWR-PSR	02/12/96
2B-95-00166	C25G	INSTALL OUTLET DAMPERS ON K3 EXHAUST FANS	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00352	C25G	ELIMINATE TAH-5E AND TAH 5W ALARM	GAINEY,T	PWR-PSR	06/27/96
2B-95-00414	C25G	REPLACE PROCESS CELL EXHAUST FILTERS	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00466	C25G	REPLACE PROBES LDE-1W AND LDE-1E	CAPSULE MANAGEMENT	PWR-PSR	06/20/96
2B-95-01005	C25G	K3/LDE CALIBRATION CABLE	ANDERSON,BS	SCH-MAT	04/18/96
2B-96-00129	C25G	IDENTIFICATION TAGS FOR DP GAGES	THOMAS,AR	WRK-NRR	03/01/96
2B-96-00262	C25G	FABRICATE DAMPER INDICATOR PLATE	STEEL,MD	WRK-NRR	03/01/96
2B-96-00303	C25G	INSPECT/REPAIR/TEST SS-K3-2-1 AND PRV-K3-2-1	HUTCHINS,GE	WPP-RES	03/05/96
2B-96-00340	C25G	REP/REPL CANYON FAIRCHILD CONTROLLER	HUTCHINS,GE	WPP-RES	05/02/96
2B-96-01135	C25G	REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25	CLEMMONS,C	WPP-RES	06/27/96
2B-90-00715	C25H	REPAIR FAN DAMPER ON K5 COOLING TOWER	GAINEY,T	PWR-PSR	06/27/96
2B-95-00340	C25J	REPAIR DOORS, LATCHES, SEALS - K1 FILTER BLDG	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-91-00725	C25K	FAB 4 EA K-3 FILTER GASKETS	GAINEY,T	PWR-PSR	06/27/96
2B-92-01043	C25K	PROVIDE CRAFT SUPPORT FOR K-3 FILTER OTP(WEST)	GAINEY,T	FWC-DOC	01/16/96
2B-92-01068	C25K	PROVIDE CRAFT SUPP. FOR K-3 FLTR OTP-EAST/WEST	GAINEY,T	FWC-DOC	01/16/96
2B-93-00906	C25K	B455, TIE-IN RLW HEADERS AND VENT LINES	GAINEY,T	PWR-PSR	06/27/96
2B-96-30064	C25K	CHANGE PRE-FILTERS ON SUPLY EX	STEEL,MD	WRK-NRR	03/04/96
2B-90-02838	C27A	WASTE CASK CHAIN TO HOOK ADAPTER	CAPSULE MANAGEMENT	PWR-PSR	06/18/96
2B-95-00161	C27A	INSPECT DOORS ON WASTE CASK	NUNN,LL	PWR-PSR	06/27/96
2B-96-01174	C27A	TRUCK DRIVER TO SUPPORT WASTE CASK			
2B-90-02913	C30	INST NITO. PURGE LINE-WESF PROCESS CELL WINDOWS	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-91-00816	C30	DRAIN AND FILL OIL FROM SHIELDING WINDOWS	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00491	C30	REPLACE IN CELL SUMP DETECTORS	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-00635	C30C	CHANGEOUT C CELL COMPACTOR AIR HEPA FILTER	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-94-00970	C30F	REPLACE F CELL SUMP DETECTOR	CAPSULE MANAGEMENT	PWR-PSR	06/17/96

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2B-95-00215	C30G	INSTALL AIR OPERATED SHEARS IN G CELL FOR TEST	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00273	C30G	REWORK G-CELL CAPSULE TRANSFER CART	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-00323	C30G	REPAIR/REPLACE G CELL AIRLOCK DOOR SEALS	NUNN,LL	PWR-PSR	06/27/96
2B-95-32152	C30M	CRAFT SUPPORT TO ENG/PLN & OPS	STEEL,MD	WRK-NRR	02/06/96
2B-95-32168	C30M	GENERAL EQUIP MOVES BY RIGGING	STEEL,MD	WRK-NRR	02/06/96
2B-90-03055	C31	REPLACE PUMP TRENCH FLOOR DRAIN SUMP DETECTOR	RASMUSSEN,JH	WPP-ENG	01/03/96
2B-90-03277	C31	GAMMA SCANNER INSTALLATION IN POOL CELL.	SHANNON,WR	PWR-PSR	06/27/96
2B-94-00587	C31	INSTALL FLOW METER IN THE R.H20 LINE AT WESF.	CAPSULE MANAGEMENT	PWR-PSR	06/18/96
2B-95-00164	C31	RE-ATTACH DOOR JAMB PIECES TO POOL CELL DOOR.	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00192	C31	REPAIR/REPLACE WESF POOL CELL 5 RECIRC PUMP	SHANNON,WR	PWR-PSR	01/03/96
2B-95-00217	C31	CAMERA RACK FOR POOL CELL CATWALK	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00359	C31	CLUNK TEST LIFTING DEVICE	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-95-00469	C31	INSTALL AN EXTENTION PLATFORM ON CATWALK	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-00833	C31	REPAIR SPARE RECIRC. PUMP MOTOR IN ELECT. SHOP	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-96-00263	C31	FABRICATE POOL CELL TONG STORAGE BRACKETS	STEEL,MD	WRK-NRR	03/01/96
2B-96-00554	C31	W-252 CLEAN POOL CELL HEAT EXCHANGERS, 1 & 3-7	CLARK,GC	WPP-RES	03/29/96
2B-96-00854	C31	CLEANOUT PUMP TRENCH SUMP		WPP-RES	06/06/96
2B-96-00862	C31	PM 2C23008 ANNUAL LUB AND INSPEC. 225B POOL CE	CAPSULE MANAGEMENT	WRK-REL	07/10/96
2B-96-00865	C31	FABRICATE AND INSTALL PLATFORM WESF POOL CELLS		WPP-RES	06/06/96
2B-96-00900	C31	RELABEL PI'S FOR WESF POOL CELL PUMPS.	HUTCHINS,GE	WRK-NRR	05/22/96
2B-96-01154	C31	FABRICATE & INSTALL SIGN FOR WESF PIPE			
2B-96-30108	C31	PAINTING IF EQUIP NOT REMOVED	STEEL,MD	WRK-NRR	03/04/96
2B-95-32998	C31A	CRAFT SUPPORT TO ENG/PLN & OPS	THOMAS,AR	WRK-NRR	03/01/96
2B-96-01110	C31A	C/W PM/S CALIB POOL CELL WF AND TK 100 WF WESF	RCT	PWR-PSR	07/01/96
2B-94-00787	C31B	REPLACEMENT OF POOL CELL TEMPERATURE RECORDER	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-96-30030	C31B	TROUBLESHOOT SYSTEMS, EQUIP	SCHUMACHER,RF	WRK-NRR	03/04/96
2B-95-00064	C31C	REPAIR PC 5 LEAK DETECTOR	RASMUSSEN,JH	PWR-PSR	02/26/96
2B-95-00949	C31C	VIDEO INSPECT POOL CELL L.D. SUMPS 3, 4, 6,& 7	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-00677	C31C	PM 2C22001 - 225-B CAPSULE STORAGE BASIN LEAK	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-94-00313	C31E	REPAIR POOL CELL PUMP.(SPARE)	WILLIAMS,JM	SCH-MAT	10/12/95
2B-96-00642	C31E	REPAIR LEAK ON THE TK 210 WATER PUMP	STEEL,MD	WRK-NRR	06/10/96
2B-96-00724	C31E	FABRICATE AND INSTALL VALVE AND LINE LABELS	SAUERESSIG,PT	WPP-RES	05/02/96
2B-96-01175	C31E	INSTALL NEW DEIONIZED WATER SYSTEM			
2B-95-32239	C31F	TROUBLESHOOT SYSTEMS, EQUIP	STEEL,MD	WRK-NRR	02/06/96
2B-96-01051	C31F	VERIFY/RELOCATE/FAB & INST. VALVE TAGS/LABELS.	STEEL,MD	WRK-NRR	06/20/96
2B-96-01148	C31F	REPLACE CUNO FILTER			
2B-96-01180	C31F	CHANGE ION EXCHANGE RESIN	CLEMMONS,C_	WPP-RES	07/12/96

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2B-95-01048	C31J	W-252 225BG BLDG & OTHER OUTSIDE CONSTRUCTION	CLARK,GC	WRK-REL	03/04/96
2B-95-01049	C31J	W-252 EXCAVATION AND YARD PIPING INSTALLATION	CLARK,GC	WRK-REL	04/12/96
2B-95-01050	C31J	W-252 WESF PUMP INSTALLATION, CELLS 9 & 10	CLARK,GC	WRK-REL	06/18/96
2B-95-01052	C31J	W-252 TEMPORARY COOLING, CLOSED LOOP TIE-IN	CLARK,GC--WCC FILE	SCH-RTW	04/19/96
2B-96-00932	C31J	CHK/REP/REPL LEAKING ISOLAT. VLVS. FOR PI'S-S1	LOWERY,JL	PWR-PSR	05/28/96
2B-96-00449	C32		DAVIS,SJ	WPP-RES	05/02/96
2B-96-00765	C32	INVESTIGATE OSCILLATION ON TK 100 WF	THOMAS,AR	WRK-NRR	05/02/96
2B-96-00505	C33	W452 - WESF SHIFT OFFICE PHYSICAL MODIFICATION	CRARY,NL	WRK-REL	06/06/96
2B-96-00508	C33	W452 - EQUIPMENT INSTALLATION.	CRARY,NL	WRK-REL	06/17/96
2B-95-33007	C33A	ROOF/WALL/SIDING REPAIRS	JONES,SE	WRK-NRR	03/01/96
2B-96-01106	C33A	PM 2C23011 INSPECT/MANIPULATOR REPAIR CARTS	CLEMMONS,C	WPP-APP	06/25/96
2B-96-01112	C33A	WESF MANIPULATORS - JULY 1996	CLEMMONS,C	WPP-APP	06/25/96
2B-96-01105	C41	PM 2C23017 ACECO 25-T CRANE (OUTSIDE PAD)	CLEMMONS,C	WPP-APP	06/25/96
2B-94-01099	C41A	REPLACE BROKEN BUSHING ON 25 TON CRANE	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-96-00021	C41A	25 TON CRANE, REPLACE HOIST CONTACTS	WESF OPERATIONS	WPP-APP	02/09/96
2B-95-01255	C41B	PM 2C35006 10-T POOL-CELL CRN ANN. COND/INSP	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-00927	C41B	PM 2C22002 225-B 10-TON CAPSULE STORAGE CRANE	SCHUMACHER,RF	FWC-DOC	06/18/96
2B-96-00640	C41C	THIRD PARTY INSPECTION WESF OTIS ELEVATOR	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-94-00470	C41D	REPLACE 15 TON CRANE TROLLEY MOTOR	SCHWEHR,BA	PWR-PSR	07/03/96
2B-95-00551	C41D	FABRICATE PARTS FOR SWIVEL 15 TON CRANE SWIVEL	CAPSULE MANAGEMENT	PWR-PSR	06/18/96
2B-95-00654	C41D	REPLACE ROLLERS FOR CRANE RETRIEVER	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-96-00866	C41D	REPLACE ROLLERS FOR RETRIVER CABLE		WPP-RES	06/06/96
2B-96-01006	C41E	SUPPORT 3RD PARTY INSPECTION OF G CELL HOIST.	JONES,SE	WRK-NRR	06/10/96
2B-96-00131	C41H	INSTALL SCAFFOLDING WESF 2ND FLOOR AMU	STEEL,MD	WRK-NRR	02/08/96
2B-96-00567	C41H	CHECK SCAFFOLDING FOR THE MONTH OF APRIL	FRIAR,SL	WRK-NRR	04/02/96
2B-96-00801	C41H	CHECK SCAFFOLDING FOR MONTH OF MAY	STEEL,MD	WRK-NRR	05/10/96
2B-96-00962	C41H	INSTALL HOIST IN WESF OPERATION GALLERY	WESF OPERATIONS	FWC-DOC	06/06/96
2B-96-00970	C41H	INSPECT SCAFFOLDING AT B PLANT & WESF	STEEL,MD	WRK-NRR	06/03/96
2B-96-30131	C41H	INSTALLING/REMOVING RIGGING	STEEL,MD	WRK-NRR	03/04/96
2B-94-00155	C93	INSTALL HEATER IN K3 INSTRUMENT CABINETS	CAPSULE MANAGEMENT	PWR-PSR	06/13/96
2B-96-00524	C93	CHART RECORDERS	THOMAS,AR	WRK-NRR	04/12/96
2B-96-00526	C93	CHART RECORDERS	THOMAS,AR	WRK-NRR	04/26/96
2B-96-00931	C93	CHART RECORDERS (DAILY) JUNE 1996	THOMAS,AR	WRK-NRR	05/31/96
2B-96-30225	C93	FAB LABEL PER WHC-IP-1182	THOMAS,AR	WRK-NRR	03/04/96
2B-96-00564	C93-	WESF INSTRUMENT SHOP HOUSEKEEPING	PICKETT,RD	WRK-NRR	04/02/96
2B-96-00178	C96	VERIFY OVERLOAD VACUUM PUMPS P-AS-1, -2	SCHUMACHER,RF	WRK-NRR	02/13/96
2B-96-01115	C96	C/W PM/S CALIB STATUS PANEL/RAMP AND RIT/RE	RCT	PWR-PSR	07/03/96
2B-96-30164	C96	GAS BOTTLE CHANGEOUT	STEEL,MD	WRK-NRR	03/04/96
2B-96-01039	C96A	2C18003 - FUNCT TEST VICTOREEN AREA	WARREN,RD	FWC-DOC	07/10/96

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2B-96-01153	C96A	MONIT.WESF G-CELL RAD MONITOR CALIBRATION/VALIDATION			
2B-96-01158	C96A	RAMP-CELL-G INSTRUMENT IDENTIFICATION LABEL			
2B-96-01167	C96A	LABEL POOL CELL ROTOMETERS	CLEMMONS,C	WRK-NRR	07/03/96
2B-93-00129	C96B	INSTALL NEW HOFFMAN VACUUM PUMP	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-94-01357	C96B	REWIRE HOFFMAN VACUUM PUMP CONTROLS	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-00062	C96C	MODIFY S-3 ANNUNCIATOR	CAPSULE MANAGEMENT	WRK-REL	06/25/96
2B-96-00537	C96C	ENGRAVE AND INSTALL NEW LABEL " 225B-CAM "	THOMAS,AR	WRK-NRR	03/28/96
2B-96-00718	C96E	PERFORM TEST SETTINGS ON RPM-PCM-942/608-01.WP	CAPSULE MANAGEMENT	PWR-PSR	06/21/96
2B-96-00942	C96E	C/W PM/S CALIB. HFM/PCM/PM WEEKLY INSP. W/B PT	KNIGHT,K	FWC-DOC	07/11/96
2B-96-01177	C96E	SERVICE PORTAL MONITORS WESF	CAPSULE MANAGEMENT	WRK-NRR	07/11/96
2B-96-01020	C96F	TROUBLESHOOT ALARMS/ALERTS FOR RIT/RE'S-225BD.	THOMAS,AR	WRK-NRR	06/14/96
2B-95-32692	C96G	FAB LABEL PER WHC-IP-1182	THOMAS,AR	WRK-NRR	02/07/96
2B-96-01179	C96G	BETA MONITOR TESTING			
2B-95-32657	C97	FAB LABEL PER WHC-IP-1182	THOMAS,AR	WRK-NRR	02/07/96
2B-96-01137	C97A	REPLACE CAM PUMP AT WESF STACK SAMPLER			
2B-92-01523	C99	INSTALL NEW DOOR AT TRUCKPORT	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-95-00501	C99	INVENTORY TOOLS FOR TOOL BOX IN 225B CANYON.	NUNN,LL	PWR-PSR	06/27/96
2B-95-00739	C99	REMOVE OLD CDL SAMPLE PIGS FROM 225-BD	CAPSULE MANAGEMENT	PWR-PSR	06/14/96
2B-95-31918	C99	REP/REPL/ADJ/LUB LATCHES	JONES,SE	WRK-NRR	02/06/96
2B-95-32204	C99	MOVING/STAGING EQUIPMENT	JONES,SE	WRK-NRR	02/06/96
2B-95-32207	C99	FAB LABEL PER WHC-IP-1182	STEEL,MD	WRK-NRR	02/06/96
2B-95-32274	C99	REP/REPL/ADJ/LUB LATCHES	JONES,SE	WRK-NRR	02/06/96
2B-95-32992	C99	TROUBLESHOOT SYSTEMS, EQUIP	JONES,SE	WRK-NRR	03/01/96
2B-96-00175	C99	INSTRUMENT TECH SUPPORT	THOMAS,AR	WRK-NRR	03/01/96
2B-96-00368	C99	SUPPORT DRILL AT WESF.	THOMAS,AR	WRK-NRR	03/07/96
2B-96-00495	C99	ALTER SCAFFOLD IN WESF AMU	STEEL,MD	WRK-NRR	03/25/96
2B-96-00580	C99	DRIVERS AND RIGGERS TO HAUL EXCESS SAFES	JONES,SE	WRK-NRR	04/30/96
2B-96-00977	C99A	UPDATE DIRECTIONAL SIGNS	STEEL,MD	WRK-NRR	06/04/96
2B-95-00604	C99B	PAINT WESF OPERATING GALLERY	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-95-32700	C99B	PAINTING IF EQUIP NOT REMOVED	STEEL,MD	WRK-NRR	02/07/96
2B-95-32740	C99B	PAINTING IF EQUIP NOT REMOVED	STEEL,MD	WRK-NRR	02/07/96
2B-95-32887	C99B	PAINTING/ADDING NON-SKID ADDIT	STEEL,MD	WRK-NRR	02/07/96
2B-96-30068	C99B	PAINTING IF EQUIP NOT REMOVED	STEEL,MD	WRK-NRR	03/04/96
2B-96-30235	C99B	PAINTING IF EQUIP NOT REMOVED	STEEL,MD	WRK-NRR	03/04/96
2B-95-32138	C99C	CRAFT SUPPORT TO ENG/PLN & OPS	STEEL,MD	WRK-NRR	02/06/96
2B-95-32545	C99C	CRAFT SUPPORT TO ENG/PLN & OPS	STEEL,MD	WRK-NRR	02/09/96
2B-96-00952	C99C	PM 2C23022 ROLLUP DOORS INSPECTION BPLANT/WESF	CAPSULE MANAGEMENT	WRK-REL	07/10/96
2B-96-01102	C99C	PM 2C23021 WESF BI-FOLD COMTAMINATION DOORS	CLEMMONS,C	WPP-APP	06/25/96
2B-95-32694	C99D	CRAFT SUPPORT TO ENG/PLN & OPS	STEEL,MD	WRK-NRR	02/07/96
2B-95-32841	C99D	UNPLUG/CLEAN DRAINS	STEEL,MD	WRK-NRR	02/07/96
2B-95-32842	C99D	CRAFT SUPPORT TO ENG/PLN & OPS	STEEL,MD	WRK-NRR	02/07/96
2B-95-32843	C99D	PIPEFITTER SUPPORT POOL CELL	STEEL,MD	WRK-NRR	02/07/96
2B-95-32146	C99E	CRAFT SUPPORT TO ENG/PLN & OPS	JONES,SE	WRK-NRR	02/06/96

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2B-95-32776	C99E	REP/REPL/ADJ/LUB LATCHES	JONES,SE	WRK-NRR	02/07/96
2B-95-32922	C99E	PAINTING/ADDING NON-SKID ADDIT	STEEL,MD	WRK-NRR	02/07/96
2B-96-00897	C99E	REPAIR CEILING WESF SWP LOBBY	LEE,RG	WRK-NRR	05/21/96
2B-96-00981	C99E	CARPENTER SUPPORT FOR MILLWRIGHT PVC PIPE CUTS	JONES,SE	WRK-NRR	06/04/96
2B-96-01172	C99E	INSTALL DOOR STOP ON SERV. GAL DOOR AT WESF			
2B-96-30094	C99E	ANCHOR CABINETS	JONES,SE	WRK-NRR	02/28/96
2B-96-30243	C99E	MINOR REPAIRS CEILING/FLOOR	JONES,SE	WRK-NRR	02/28/96
2B-95-32682	C99F	REMOVING/INSTALLING INSULATION	JONES,SE	WRK-NRR	02/07/96
2B-95-32689	C99F	REMOVING/INSTALLING INSULATION	JONES,SE	WRK-NRR	02/07/96
2B-95-32957	C99F	REMOVING/INSTALLING INSULATION	STEEL,MD	WRK-NRR	02/28/96
2B-96-00792	C99F	WRAP AND PACKET TWO ASBESTO FILE SAFES	JONES,SE	WPP-RES	05/21/96
2B-96-30148	C99F	REMOVING/INSTALLING INSULATION	STEEL,MD	WRK-NRR	02/28/96
2B-91-00894	C99H	STRUCTURAL COVERBLOCKS WESF CANYON #28	CAPSULE MANAGEMENT	PWR-PSR	07/12/96
2B-96-01184	C99K	TROUBLESHOOT TRUCK PORT BI-FOLD DOOR	CAPSULE MANAGEMENT	WRK-NRR	07/15/96
2B-96-30001	C99K	CRAFT SUPPORT TO ENG/PLN & OPS	CLARK,GC	WRK-NRR	03/04/96
2B-95-32610	C99Q	MINOR ELECTRICAL REPAIRS	SCHUMACHER,RF	WRK-NRR	02/09/96
2B-96-00209	C99Q	PM 2C22005 225-B ELECTRICAL LUBRICATION	ACQUAVELLA,JJ	PWR-PSR	06/04/96
2B-95-00864	C99R	RECEIVE AND UNLOAD CESIUM SHIPMENT WRM#-5499	SAUERESSIG,PT	WRK-REL	04/08/96
2B-95-01269	C99R	PM 2C23038 (BUSS) CASK LID INSPECTION	CAPSULE MANAGEMENT	PWR-PSR	06/17/96
2B-96-00384	C99R	REMOVE OSR LABELS FOR TRUCKPORT INDICATOR LTS	SAUERESSIG,PT	WRK-NRR	03/25/96
2B-96-00461	C99R	REMOVE AND LUBRICATE LIFTING BRIDLE	STEEL,MD	WRK-NRR	03/21/96
2B-96-00462	C99R	REMOVE LOWER PERSONNEL BARRIER TO SUPPORT PM	SAUERESSIG,PT	WPP-RES	05/02/96
2B-96-01100	C99R	BUSS CASK TRIFOIL LABEL			
2B-96-01109	C99R	INSPECT HOISTING EQUIPMENT FOR BUSS CASK/ARECO			
2B-96-01120	C99R	INSPECT CESIUM CAPSULE RIGGING EQUIMENT.			
2B-96-01151	C99R	TRUCKDRIVER SUPPORT FOR BUSS CASK			
2B-96-01159	C99R	VISUAL INSPECTION ON BUSS CASK WIRE ROPE			
2B-96-01164	C99R	REPAIR WELD ON BUSS CASK TRAILER			

290 Records Processed

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.1.2 - July 29, 1996

Acceptance Criteria:

Documentation that shows all work packages identified in Section 4.1.1 have been completed.

Discussion:

Checklist item 4.1.1 identifies the work packages for completion prior to ARECO capsule return.

Supporting Documentation:

The attached copies of work packages and/or PM/S activity completion reports reflect completed work identified as requirements prior to ARECO capsule return.

Outstanding Items/Limitations:

Work packages as of this date requiring completion:

2B-96-01164 Repair BUSS Cask Trailer ~~(~~work completed; waiting work package close out documentation~~)~~ see 4.2.3.1 closed out PJS 8/2/96

2B-96-01107 PM 2C22010 225B Diesel Engine & Standby Generator Monthly/Weekly Test (scheduled for completion 7/31/96) - Work Completed as scheduled for month of July. 8/1/96 RDW

2B-96-01112 WESF Manipulators - July (Provide two ready spares prior to capsule return, scheduled for completion 8/2/96) Work completed as scheduled. Two spare manipulators are available. 8/1/96 RDW

August and September calibration and PM activities are not considered in this evaluation, but will be scheduled and completed within their periodicity.

Completion: R.D. Warren C. Clemmons Date: 7/31/96
R. D. Warren/C. Clemmons

Concurrence: Paul T. Saueressig Date: 8/1/96
P. T. Saueressig

*** RECORD COPY *** *** RECORD COPY ***

==========WORK DOCUMENT (W110)==========

Page: 1 09:27:27 17 JUL 1996

1. Document Number 2B-96-01190/W *GENERIC WORK ITEM*
2. Work Item Title REASSEMBLE BUSS CASK

---

3. Components
   Component Number Name
   N/A

   Temporary Number Name
   N/A

4. System C99R *BUSS CASK*

5. Location
   Facility 2C *WESF*
   Bldg/Rm 225B/CRANE PAD Other Other

6. Symptom, Problem, or Condition
   REASSEMBLE PERSONNEL BARRIER AND REPLACE BOLTS ON TRANSPORTATION SKID ASSEMBLY IN SUPPORT OF ARECO CAPSULE RETURN.

7. Originator Name WARREN,RD Date 07/16/96
   Telephone No. 372-0110 MSIN S6-70

8. Charge Code KW64D

---

9. Priority 2
10. Phase Designator JUL96 *SCHEDULED FOR JULY 1996*
11. Cognizant Engineer PEREIRA,MM Phone 2-0036
12. Planning Required Y
13. Screener/Ops Review Signature X SAUERESSIG,PT Date 07/17/96

---

14. Resolution By Signature X WARREN,RD Date 07/17/96

15. Approvals

Code	Type	Signature	Date
CE	COGNIZANT ENGINEER	X SAUERESSIG,PT	07/17/96

16. Resources Required

Res Code	Description	No.	Act Hrs
23	MILLWRIGHT	2	

==========WORK DOCUMENT (W110)==========

*** RECORD COPY *** *** RECORD COPY ***

WORK DOCUMENT (W110)

Page: 2 09:27:27 17 JUL 1996

1. Document Number 2B-96-01190/W *GENERIC WORK ITEM*
2. Work Item Title REASSEMBLE BUSS CASK

	Signature	Date
17. Pre-Work Review	Paul J Sauerseig	7/23/96
18. Tagout Number		

	Type	Signature	Date
19. Work Release	P	SEE PARTIAL RELEASE SHEET	

20. Work Suspension (See Work Suspension Sheet)
PIC _____ _____

21. Reference Documents	Type
2C23041	PM
2C23035	PM
FOR 2B9607-130	QJHA

22. PIC CAPSULEMANAGEMENT,TEAM PIC Org. CAPSULE MANAGE

Resolution/Retest

1. PERFORM STEPS 7.6 AND 7.7 OF PM 2C23035 TO REASSEMBLE PERSONNEL BARRIER.
2. PERFORM HEXAGONAL MOUNTING BLOCK INSPECTION, STEPS 7.3.1 THROUGH 7.3.4. OF PM 2C23041.
3. PERFORM STEP 7.5 OF PM 2C23041 USING NEW RETAINING SCREWS.
4. COMPLETE APPLICABLE SECTIONS OF PM DATA SHEET.

	Signature	Date
23. Field Work Complete	Paul J Sauerseig	7/23/96
24. Ops_Acceptance	Paul J Sauerseig	7/23/96
25. Post Review	[signature]	7/23/96

No RWP required BJ Judy 7-18-96

B PLANT MAINTENANCE

PREVENTIVE MAINTENANCE PROCEDURE

2C23035

Revision 0
Change B

BENEFICIAL USES SHIPPING SYSTEM (BUSS) CASK PERSONNEL BARRIER INSPECTION

Approval Designator SQ

Prepared by:	PDCS	D. D. Barkost, Engineer
Validated by:	B. Maint.	M. D. Steel
Approved by:	B. Maint.	P. T. Saueressig, Cog Engineer
	B. Maint.	E. D. Robbins, Cog Engineer Manager
	ESQ/SFT	W. P. Nelson
	ESQ/QA	D. D. McAfee
	B. Maint.	M. W. Pawlak
Released by:	B PLANT	L. R. Coffman

RELEASE DATE: 06/24/96

Revision Status

Change Level	Date	Change Document	Page(s)	Description
Rev. 0	12/15/94	2U-94-0871	All	New Procedure.
[A]	2/16/95	95-0006	6	Remove Steps 7.3 and 7.4 and renumbered remaining steps.
			9	Updated Data Sheet
[B]	6/24/96	B96-0151	3,5,7	To accommodate transition to Re-Engineering, made the following administrative changes: 1) Changed Person In Charge (PIC) or Supervision to Team Coordinator (TC) or Designee; 2) Changed Operations management to Configuration Control Authority (CCA); 3) Changed Maintenance and Operations Management to TC or Designee and CCA; 4) Changed Package to Document.

1.0 PURPOSE AND SCOPE

This procedure provides a safe, uniform method for inspection of the Beneficial Uses Shipping System (BUSS) Cask Personnel Barrier.

2.0 REFERENCES

2.1 WHC-QAB-93-002, Quality Assurance Bulletin, "Revised U.S. Department of Energy Guidance Relative to Identification of Suspect/Counterfeit Graded Fastener Headmarks."

2.2 VI-22542, Vendor Information, BUSS Cask Maintenance Manual, Section 3.4, "Personnel Barrier."

3.0 PERSONNEL REQUIREMENTS

3.1 Millwright (MW).

3.2 Crane Operator (COP), as required.

3.3 Radiological Control Technician (RCT), as required.

4.0 PRECAUTIONS AND LIMITATIONS

4.1 If during performance of this procedure, any of the following conditions are found, **immediately** stop work, place equipment in a safe condition, and notify Team Coordinator (TC) or Designee:

- Any equipment malfunction which could prevent fulfillment of its functional requirements.
- Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.

4.2 Contact TC or Designee for additional instructions if changing plant conditions affect work or delays in work extend past end of shift.

4.3 If any waste is generated during performance of this instruction consult Facility/Plant/Area Hazardous Waste Coordinator for specific instructions to ensure compliance with WHC and DOE environmental standards, as applicable, for disposal.

4.4 This is a general compliance procedure. Sections or steps within sections of this procedure may be performed out of sequence, as required for maintenance or plant conditions.

5.0 SPECIAL TOOLS, EQUIPMENT, AND MATERIALS

NOTES

Measuring and Test Equipment (M&TE) used to collect qualitative data during performance of this procedure shall meet the following requirements:

- Be within its current calibration cycle as evidenced by an affixed calibration label.
- Be capable of desired range.
- Have an accuracy consistent with state-of-the-art limitations:
  - equal to or greater than input tolerance specified on Data Sheet,

  OR, if device being calibrated is not CBRS associated,

  - at least 4 times greater than specified device tolerance.

5.1 Calibrated Torque Wrench, capable of 20 ft-lbs.

5.2 Neverseez, or equivalent lubrication.

7.0 INSTRUCTIONS

NOTE

Refer to the following drawings in Volume II, BUSS Cask Safety Analysis Report for Packaging (SARP) for as-fabricated information.

- S52614 Personnel Barrier, Lower
- S52615 Personnel Barrier, Upper

7.1 INSPECT personnel barrier (Reference Figure 1 for inspection points).

NOTE

The upper section of barrier will have been removed as part of cask removal.

7.2 REMOVE lower sections of barrier from skid by removing 9 screws from each section.

7.3 INSPECT visually, frame, screen, and mounting bolts for signs of damage or cracking of welds. Pay particular attention to mounting flanges of each lower section and requisite welds.

7.4 INSPECT visually, floating nut-plates on barrier upper section for corrosion, function, and thread condition.

7.5 LUBRICATE threads with Neverseez, or equivalent lubrication.

7.6 REASSEMBLE barrier lower sections to skid AND TORQUE assembly screws to 20 ft-lbs.

7.7 RECORD reassembly and torque actions on Data Sheet.

8.0 RESTORATION

None.

9.0 TESTING AND ACCEPTANCE

None.

10.0 DISPOSITION

10.1 Inform TC or Designee and CCA inspection is complete.

10.2 Return Work Document to TC or Designee.

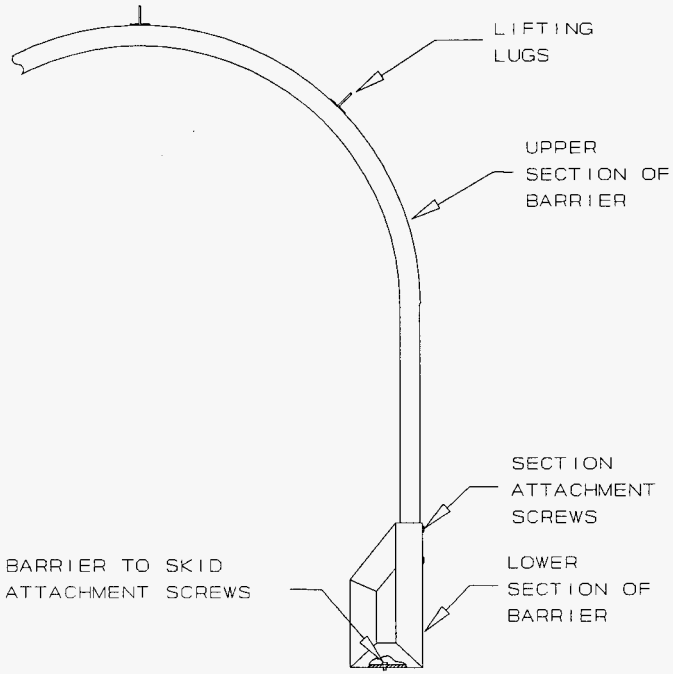
11.0 BIBLIOGRAPHY

11.1 WHC-CM-1-10, Safety Manual, WKS 8.1, "Operations Lock and Tag", WKS 10, "Personal Protection", WKS 12, "Hand and Portable Power Tools".

11.2 HSRCM-1, Hanford Site Radiological Control Manual, Chapter 2, Part 3, "Posting," and Chapter 3, Part 2, "Work Preparation."

11.3 Volume II, BUSS Cask Safety Analysis Report for Packaging (SARP), "As-Fabricated Drawings."

11.4 VI-22542, Vendor Information, BUSS Cask Maintenance Manual, Section 3.4, "Personnel Barrier."



Appendix A
Page 288
WHC-SD-WM-RRR-010 Rev. 0

FIGURE 1. PERSONNEL BARRIER.

DATA SHEET (Sheet 1 of 1)

INSPECTION DATE: 7/23/96

Step #/Desc.	Satisfactory	Unsatisfactory	Initial	Date	Comments
7.2 Remove Lower Sections					
7.3 Inspect Frame, Screen and Mounting Bolts					
7.4 Inspect Floating Nut-Plates		N A			
7.5 Lubricate Threads					
7.6 Reassemble Lower Sections (Torque 20 ft-lbs.)	X			7-23-96	
Wrench I.D. Number: 813-65-01-021			Calibration Due Date: 7/02/97		

Additional Comments: _____

Performed By:

Duane A Lammers — Print Name

Signature

7-23-96 — Date

B-PLANT

PREVENTIVE MAINTENANCE PROCEDURE

2C23041

Revision 0
Change D

BENEFICIAL USES SHIPPING SYSTEM (BUSS) CASK TRANSPORTATION SKID INSPECTION

Approval Designator SQ

Prepared by:	PDCS	*D. D. Barkost
Validated by:	B MAINT	*M. D. Steel
Approved by:	B MAINT	*P. T. Saueressig, Cog Engineer
	B MAINT	*E. D. Robbins, Cog Engineer Manager
	ESQ/SFT	*W. P. Nelson
	ESQ/QA	*D. D. McAfee
Released by:	B PLANT	L. R. Coffman

RELEASE DATE: 6/24/96

* Indicates original signator

Revision Status

Change Level	Date	Change Document	Page(s)	Description
Rev. 0	8/25/94	2U-94-0877	All	New procedure.
[A]	10/10/94	94-1968	6	Added NOTE after Step 7.3.4.
[B]	10/27/94	94-2117	6	Added Step 7.3.5 (b).
[C]	9/28/95	B95-0134	4,7,8,12	Update to current IP-1140 standards, Add step 5.3., Add to step 7.5 in Section 7.0 and on data sheet 2 of 2., Add step 11.2., Renumber Section 11 steps., Add step 11.6.
[D]	6/24/96	B96-0151	3,5,8	To accommodate transition to Re-engineering, made the following administrative changes: 1) Changed PIC or Supervisor to TC or designee; 2) Changed Operations Managment to Configuration Control Authority (CCA).

1.0 PURPOSE AND SCOPE

This procedure provides a safe, uniform method for inspection of the Beneficial Uses Shipping System (BUSS) Cask Transportation Skid.

2.0 REFERENCES

2.1 WHC-QAB-93-002, Quality Assurance Bulletin, "Revised U.S. Department of Energy Guidance Relative to Identification of Suspect/Counterfeit Graded Fastener Headmarks."

3.0 PERSONNEL REQUIREMENTS

3.1 Millwright (MW).

3.2 Crane Operator, as required.

3.3 Radiological Control Technician (RCT), as required.

3.4 Non-Destructive Test (NDE) Personnel.

4.0 PRECAUTIONS AND LIMITATIONS

4.1 If during performance of this procedure, any of the following conditions are found, **immediately** stop work, place equipment in a safe condition, and notify Team Coordinator (TC) or designee:

- Any equipment malfunction which could prevent fulfillment of its functional requirements.
- Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.

4.2 Contact TC or designee for additional instructions if changing plant conditions affect work or delays in work extend past end of shift.

4.3 If any waste is generated during performance of this procedure, consult Facility/Plant/Area Hazardous Waste Coordinator for specific instructions to ensure compliance with WHC and DOE environmental standards, as applicable, for disposal.

5.0 SPECIAL TOOLS, EQUIPMENT, AND MATERIALS

NOTES

Measuring and Test Equipment (M&TE) used to collect qualitative data during performance of this procedure shall meet the following requirements:

- Be within its current calibration cycle as evidenced by an affixed calibration label.
- Be capable of desired range.
- Have an accuracy consistent with state-of-the-art limitations:
  - equal to or greater than input tolerance specified on Data Sheet,

  OR, if device being calibrated is not CBRS associated,

  - at least 4 times greater than specified device tolerance.
- Torque wrenches with in-lb range may be substituted for torque wrenches with ft-lb range.

5.1 Calibrated Torque Wrench, capable of 10 ft-lbs.

5.2 Calibrated Torque Wrench with Allen drive, capable of 50 ft-lbs.

5.3 Calibrated torque wrench with a range of 10 to 200 inch-lbs, as applicable.

5.4 Dye-Penetrant for specific metal(s).

6.0 **PREREQUISITES**

6.1 Components required in this procedure will be made readily available and easily accessible prior to performance of the inspection.

6.2 Obtain release from Configuration Control Authority (CCA) prior to beginning performance of this procedure.

6.3 If potential for radiological contamination exists, request RCT perform equipment survey prior to beginning maintenance or prior to removal of equipment or component from its installed location.

7.0 INSTRUCTIONS

NOTE

Refer to the following drawings in Volume II, BUSS Cask Safety Analysis Report for Packaging (SARP) for as-fabricated information.

- S50032 Cradle, BUSS Cask
- S52606 Pallet, BUSS Cask
- S52607 Mounting Block Assembly
- S52608 Block, Mounting
- S52609 Ware Strip

7.1 REMOVE cask from skid prior to inspection (instructions in the BUSS Cask Operations Manual for removal).

7.2 INSPECT skid and hexagonal base (see Figure 1 for inspection points).

7.3 Hexagonal Mounting Block Inspection

7.3.1 REMOVE hexagonal mounting block assembly from skid.

7.3.2 INSPECT 2 attachment screws, 2 alignment pins, and each hole.

7.3.3 INSPECT 2 attachment screws for suspect/counterfeit parts.

7.3.4 IF suspect/counterfeit part(s) encountered,
THEN ISSUE an Occurrence Report (OR).

NOTE

Step 7.5 can be performed after Step 7.3.4 has been completed.

7.3.5 REMOVE 2 brass wear strips by removing the five Allen drive countersunk screws from each bar.

a. INSPECT wear strips for signs of damage or wear (minor dents or scrapes are permissible).

b. INSPECT screws for damage AND RECORD on Data Sheet.

7.3.6 PERFORM inspection of all welds using dye-penetrant method appropriate to specific metal on mounting block (see Figure 2 for weld locations).

7.3.7 RE-INSTALL wear strips to mounting block.

a. TORQUE wear strip mounting screws to 50 (47-53) ft-lbs.

7.4 Transportation Skid Inspection

7.4.1 INSPECT transportation skid welds for visual signs of cracks, paying particular attention to tiedown mounts and skid-to-trailer attachment flanges. Do not remove paint unless weld cracks are evident.

7.4.2 PERFORM non-destructive test (NDT) on evident weld cracks using dye-penetration method AND RECORD on Data Sheet (paint removal on evident weld cracks by sandblasting or other facility approved technique).

7.4.3 RE-PAINT skid, as necessary, to repair scuffing, wear, or removed paint from weld crack inspection. Use zinc chromate primer and flat white epoxy base enamel. Follow paint manufacturer's recommendations on application.

7.5 RE-INSTALL hexagonal mounting base to transportation skid AND TORQUE 2 retaining screws to 10 (9-11) ft-lbs (120 inch-lbs).

8.0 RESTORATION

None.

9.0 TESTING AND ACCEPTANCE

None.

10.0 DISPOSITION

10.1 Inform TC or designee and CCA inspection is complete.

10.2 Return Work Package to TC or designee.

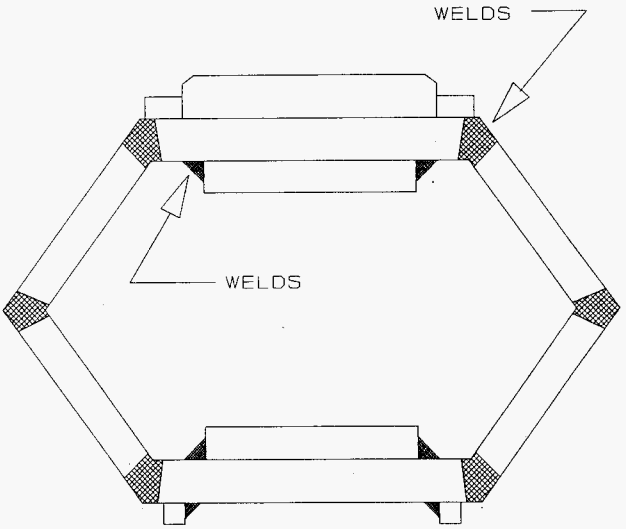
11.0 BIBLIOGRAPHY

11.1 WHC-CM-1-10, Safety Manual, WKS 10, "Personal Protection," WKS 12, "Hand and Power Tools," WKS 8.1, "Operations Lock and Tag."

11.2 HSRCM-1, Hanford Site Radiological Control Manual, Chapter 2, Part 3, "Posting," and Chapter 3, Part 2, "Work Preparation."

11.3 Volume II, BUSS Cask Safety Analysis Report for Packaging (SARP).

11.4 Vendor Information, BUSS Cask Operations Manual.


WELDS
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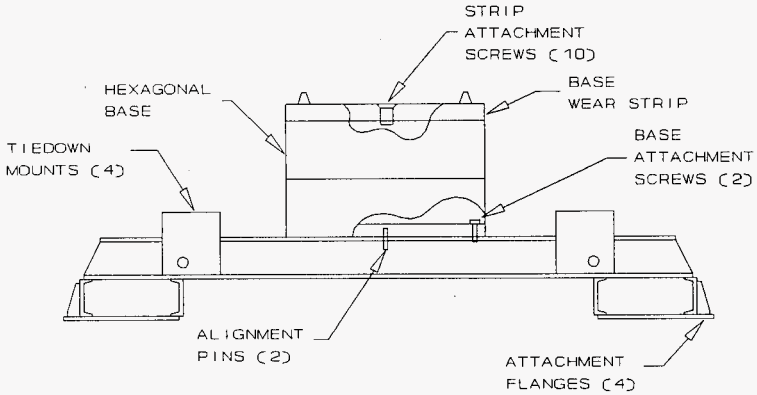
STRIP
ATTACHMENT
SCREWS (10)
HEXAGONAL
BASE
BASE
WEAR STRIP
TIEDOWN
MOUNTS (4)
BASE
ATTACHMENT
SCREWS (2)
ALIGNMENT
PINS (2)
ATTACHMENT
FLANGES (4)

DATA SHEET (Sheet 1 of 2)

INSPECTION DATE: 7/23/96

Step #/Desc.	Satisfactory	Unsatisfactory	Initial	Date	Comments
~~7.1 Cask Removed from Skid?~~	Y / N	N	A		
7.3.1 Remove Mounting Block					Unnessasory to Remove Block do
7.3.2 Inspect Screws, Pins, and Holes	Y		[illegible]	7-23-96	Replace Bolts
7.3.3 Suspect Parts	Suspect/Counterfeit Parts Y (N) N		[illegible]	7-23-96	
7.3.4 Issue OR?	Occurrence Report Y (N) N		[illegible]	7-23-96	
7.3.5 Remove Wear Strips					
7.3.5.a Inspect Wear Strips					
7.3.5.b Inspect Screws					
7.3.6 NDT Welds					
7.3.7 Reinstall Wear Strips (Torque 50 [47-53] ft-lbs)		N	A		
Wrench I.D. Number: _____			Calibration Due Date: _____		
7.4.1 Inspect Skid Welds					
7.4.2 NDT Welds					
7.4 .3 Repaint Skid					

DATA SHEET (Sheet 2 of 2)

INSPECTION DATE: 7/23/96

Step #/Desc.	Satisfactory	Unsatisfactory	Initial	Date	Comments
7.5 Mount Base to Skid (Torque 10 [9-11] ft-lbs) (120 inch-lbs)	X			7-23-96	
Wrench I.D. Number: 813-88-01-021			Calibration Due Date: 7/02/97		

Additional Comments: _____

Performed By:

Diane A. Laarman — Print Name
Signature
7-23-96 — Date

*** *INFORMATION ONLY* ***

==========**WORK DOCUMENT (W110)**==========

Page: 1 13:44:47 30 JUL 1996

1. **Document Number** 2B-96-01135/W *GENERIC WORK ITEM*
2. **Work Item Title** REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25

---

3. **Components**

Component Number	Name
N/A	

Temporary Number	Name
FDM-1-24	FAN DAMPER MOTOR, K3-7-1

4. **System** C25G *K3 EXHAUST SYSTEM (INCLUDES PR*

5. **Location**
   Facility 2C *WESF*
   Bldg/Rm 225BB **Other** N/A **Other** N/A

6. **Symptom, Problem, or Condition**
   FDM-1-24 DOES NOT OPERATE SMOOTHLY, OPERATING RANGE OF FDM IS NOT CORRECT. GAUGE PI-225BB-2 STICKS. GAUGES PI-225BB-2, PI-225BB-3, PI-225BB-4 AND PI-225B-1 ARE WEATHERED.

7. **Originator Name** CLEMMONS,C **Date** 06/27/96
   Telephone No. 372-0100 **MSIN** S6-70

8. **Charge Code** KWWHV

---

9. **Priority** 2
10. **Phase Designator** JUL96 *SCHEDULED FOR JULY 1996*
11. **Cognizant Engineer** GAINEY,T **Phone** 373-0964

12. **Planning Required** Y

	Signature	Date
13. **Screener/Ops Review**	X CLEMMONS,C	07/17/96

	Signature	Date
14. **Resolution By**	X CLEMMONS,C	07/17/96

15. **Approvals**

Code	Type	Signature	Date
SE	SYSTEM ENGINEER	GAINEY,T	07/18/96
TC		SAUERESSIG,PT	07/18/96

16. **Resources Required**

Res Code	Description	No.	Act Hrs
18	INSTRUMENT TECHNICIAN	2	7
22	ELECTRICIAN	1	2
54	RADIOLOGICAL CONTROL TECHS	1	2
05	POWER OPERATOR	2	8
23	MILLWRIGHT	1	4

==========**WORK DOCUMENT (W110)**==========

*** *INFORMATION ONLY* ***

*** INFORMATION ONLY ***

=WORK DOCUMENT (W110)=

13:44:47 30 JUL 1996

Page: 2

1. **Document Number** 2B-96-01135/W *GENERIC WORK ITEM*
2. **Work Item Title** REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25

ENG	B PLANT ENGINEERING	1	8

=WORK DOCUMENT (W110)=

*** INFORMATION ONLY ***

1. **Document Number** 2B-96-01135/W *GENERIC WORK ITEM*
2. **Work Item Title** REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25

		Signature	Date
17. **Pre-Work Review**		SAUERESSIG,PT	07/18/96
18. **Tagout Number**			
	Type	**Signature**	**Date**
19. **Work Release**	F	SAUERESSIG,PT	07/18/96

20. **Work Suspension** (See Work Suspension Sheet)
PIC _____ _____

21. **Reference Documents**

	Type
H-2-96639 SHT 2	DRWG
H-2-96639 SHT 3	DRWG

22. **PIC** CAPSULEMANAGEMENT,TEAM **PIC Org.** CAPSULE MANAGE

Resolution/Retest

1.0 SCOPE

1.1 K3-FDM-1-24 will be replace with a new actuator. K3-FDM-1-25 will be calibrated to match K3-FDM-1-24. Both actuators will be set to provide the same flow at a specific loading pressure. If any values as stated in the work steps are unobtainable, proceed under the direction of the system engineer and record the values used on the JCS Craft Log.

1.2 The ventilation system of 225B will not be affected by this work. There will be a minor imbalance in the fan controls until both actuators are calibrated and linkage adjusted.

2.0 PREREQUISITES

2.1 Calibrate replacement air motor: set as close as possible for 3-15 psi. Measure and record piston travel and operating span.

PISTON TRAVEL	4.0	IN.
PISTON STROKE BEGINS AT	3.1	PSI.
PISTON STROKE ENDS AT	15.	PSI.

2.2 Lock and tag power for exhaust fan K3-7-1 in the off position. MCC 2, COMPARTMENT A2.

2.3 Record the following K3 system readings.

DUCT PRESSURE -8.0 INCHES H2O
DAMPER LOADING PRESSURE 7.3 PSI

3.0 WORK INSTRUCTIONS FOR K3-7-1 ACTUATOR (K3-FDM-1-24)

3.1 Clamp the K3-7-1 control damper in place and remove connecting link (see sketch).

3.2 Close air valves 225B-810-1 and 225B-810-20 to isolate air motor FDM-1-24.

3.3 Remove and replace damper motor assembly. Leave clamping bolts for lever arm loose (see sketch).

3.4 SLOWLY open air valves 225B-810-1 and 225B-810-20 and allow to build up pressure without disturbing the signal to K2-7-2.

3.5 Reconnect linkage, DO NOT ADJUST.

3.6 Tighten clamping bolts on lever arm.

SYSTEM ENGINEER APPROVAL GAINEY,T 7/18/96
Signature

3.7 Remove clamping device from control damper.

4.0 SWITCHING FAN

4.1 Adjust K3 duct pressure to -10 to -12 inches of water.

4.2 Remove lock and tag from MCC 2, compartment A2 and turn on power to K3-7-1.

4.3 Switch from K3-7-1 to K3-7-2 per EO-060-002.

4.4 Return duct pressure to -8 inches of water.

5.0 WORK INSTRUCTIONS FOR K3-7-2 ACTUATOR (K3-FDM-1-25)

5.1 Lock and tag power for exhaust fan K3-7-2 in the off position. MCC 3, COMPARTMENT A2.

5.2 Record the following K3 system readings.

1. **Document Number** 2B-96-01135/W *GENERIC WORK ITEM*
2. **Work Item Title** REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25

==========

DUCT PRESSURE -8.0 INCHES H2O
DAMPER LOADING PRESSURE 6.8 PSI

5.3 Clamp the K3-7-2 control damper in place and remove connecting link (see sketch).

5.4 Close air valves 225B-810-4 and 225B-810-21 to isolate air motor K3-FDM-1-25.

5.5 Calibrate the K3-7-2 actuator (K3-FDM-1-25) to match the values of K3-FDM-1-24 shown in step 2.1.

5.6 SLOWLY open air valves 225B-810-4 and 225B-810-21 and allow to build up pressure without disturbing the signal to K2-7-1.

5.7 Reconnect linkage, DO NOT ADJUST.

5.8 Remove clamping device from control damper.

6.0 MATCHING ACTUATOR OPERATION

6.1 Set the K3-6-1 control valve loading pressure to 8.5 psi.

6.2 Switch duct pressure controller to manual per EO-060-002.

6.3 Set the K3 duct pressure to -8 inches of water.

6.4 Clamp the control damp of the operating fan in place.

6.5 Remove the connecting link from the damper and lever arm.

6.6 Adjust the controller output to 8 psi.

6.7 Adjust the connecting link to fit between the damper arm and the lever arm and install the connecting link.

6.8 Remove clamp from the control damper.

6.9 Return the K3 duct pressure controller to Auto per EO-060-002.

6.10 Raise duct pressure to -10 to -12 inches of water.

6.11 Switch fan operation per EO-060-002.

6.12 Verify the K3-6-1 control damper loading pressure is 8.5 psi. Adjust if necessary.

6.13 Return K3 duct pressure to -8 inches of water.

6.14 Clamp the control damp of the operating fan in place.

6.15 Remove the connecting link from the damper and lever arm.

6.16 Adjust the controller output to 8 psi.

6.17 Adjust the connecting link to fit between the damper arm and the lever arm and install the connecting link.

6.18 Remove clamp from control damper.

6.19 Return the K3 duct pressure controller to Auto per EO-060-002.

7.0 OPERABILITY TESTING

7.1 Switch fans from K3-7-2 to K3-7-1 and back per EO-060-002 to verify fans are functioning per procedure.

7.1.1 Observe the action/reaction of the fans to system changes. If reactions are too slow or too fast, report situation to the system engineer.

8.0 GAUGE CHANGE

8.1 Replace the following gauges at the K3 Exhaust fan area. Power operator will need to switch the K3 filters to change PI-225B-3 and 4.

8.1.1 PI-225B-1
8.1.2 PI-225B-2
8.1.3 PI-225B-3
8.1.4 PI-225B-4

9.0 WORK IS COMPLETE

1. **Document Number** 2B-96-01135/W *GENERIC WORK ITEM*
2. **Work Item Title** REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25

9.1 The work area will be cleaned and all excess material will be disposed of properly.

9.2 Notify Operations that the job is complete.

9.3 Complete the J-5 with a brief description of work completed or any observation of equipment that might need future service and/or lessons learned.

	Signature	Date
23. Field Work Complete	SAUERESSIG,PT	07/24/96
24. Ops_Acceptance	SAUERESSIG,PT	07/24/96
25. Post Review	_____	_____

cument Number 28-96-01135/W GENERIC WORK ITEM
rk Item Title REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25

Problem Description

N/A

Action Taken

N/A

Work Record Turnover Summary

Date	Turnover Comments	Name	Craft/ Resource Type	Hours
07/18/96	PREJOB WENT OVER PACKAGE WITH TEAM MEMBERS INVOLVED. WENT STEP BY STEP THROUGH WORK STEPS. FOUND THAT K3-7-2 HAS ONLY A 3 1/2 IN MOTOR STROKE. BOTH VLAVE POSITIONERS ARE CALIBRATED TO 3 PSI START TO STROKE & 15 PSI THEY ARE FULLY STROKED. SWITCHED FANS BACK & FORTH POWER OPERATOR SEEMS HAPPY WITH IT.	HUTCHINS,G	18	7

*** *INFORMATION ONLY* ***

==========J-7 WORK CHANGE NOTICE - Detail (W175)==========

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1. **Document Number** 2B-96-01135/W *GENERIC WORK ITEM*
   Work Item Title REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25

	Signature	Date
2. Originator	CLEMMONS,C_	07/18/96

3. **WCN Number** 01 **Non-ADP WCN Number** N/A

4. **Reason for Change**
   LOCK AND TAG REMOVAL STEP NOT INCLUDED.

5. **Approval Signatures**

Code	Description	Signature	Date
SE	SYSTEM ENGINEER	GAINEY,T	07/18/96

	Signature	Date
6. Incorporated By	CLEMMONS,C_	07/18/96

7. **Change Instructions**

Page	Step/Para	Description
1	5.9	REMOVE THE LOCK AND TAG FROM K3-7-2. TURN THE CIRCUIT BREAKER ON.

==========J-7 WORK CHANGE NOTICE - Detail (W175)==========

*** *INFORMATION ONLY* ***

*** *INFORMATION ONLY* ***

==========J-7 WORK CHANGE NOTICE - Detail (W175)==========

Page: 1 13:45:41 30 JUL 1996

1. **Document Number** 2B-96-01135/W *GENERIC WORK ITEM*
   Work Item Title REPLACE K3 FDM-1-24, CALIBRATE FDM-1-25

	Signature	Date
2. Originator	WARREN,RD	07/25/96

3. **WCN Number** 02 **Non-ADP WCN Number**

4. **Reason for Change**
   GAUGES IDENTIFIED FOR REPLACEMENT IN SECTION 8.0 ARE UNAVAILABLE A SEPARATE WORK DOCUMENT WILL BE INITIATED TO REPLACE THE GAUGES AT A LATER DATE. REPLACEMENT OF GAUGES WAS NOT IN THE ORIGINAL SCOPE INTENT FOR THIS WORK PACKAGE.

5. **Approval Signatures**

Code	Description	Signature	Date
CE	COGNIZANT ENGINEER	X GAINEY,T	07/25/96

	Signature	Date
6. Incorporated By	WARREN,RD	07/25/96

7. **Change Instructions**

Page	Step/Para	Description
6	SECTION 8.0	DELETE SECTION 8.0 AND ALL WORK STEPS THEREIN ENTIRELY.

==========J-7 WORK CHANGE NOTICE - Detail (W175)==========

*** *INFORMATION ONLY* ***

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.2.1.1

Acceptance Criteria:

Documentation that shows cranes, hoists, and forklifts needed to receive the BUSS cask are available and will be committed to task during the windows planned to receive cesium capsules.

Discussion:

The 25 ton crane (outside bridge crane for unloading from or loading onto the trailer), the 15 ton crane (WESF canyon crane), and the G Cell hoist are all a permanent part of the facility. The forklift used for moving the cask between the 25 ton crane pad and into the WESF truck port is the property of WESF and used only at WESF.

See Preparedness item 4.2.4.2 for completion of any routine preventive maintenance for the above equipment.

Supporting Documentation:

See attached pages from property listing dated 6/21/96 and note the "Sub Cust Org" column for each piece of equipment. The Org code for the WESF facility manager is 16E00.

Outstanding Items/Limitations:

None.

Completion: ~ APPROVED FOR L. L. Nunn Date: 7/22/96

Concurrence: P. T. Saueressig Date: 7/23/96

Requested By	Org Code	Sub Cust Org	Change Org Code	User Name	Change User Name	Property Name	Property Number	Mfg Name	Mfg Model	Serial Number	Location
??	??	16H00	WILLIAMS RJ		COMPUTER	C42004	W	48633	USJ5018877	271B 101 200E	
added	W16E20		Davis SJ		Computer	B92730					M0-029
BHL	W16F00		SHREVE		COMPUTER	C23918	W	38620EM1	4120HBF1075	MO408 G 200E	
DOD	W16D30		FROEHLICH SC		COMPUTER	C01099	W	286G212	AT09124522	MO400 2B 200E	
DDW	W16F00		STARK SR		COMPUTER	B93458	W	38620EM1	4924HS1H006	MO232 200E	
DDW	W16F00		WILSON DW		COMPUTER	C26728	W	38625E	4131HAL7014	222B 12C 200E	
DDW	W16F00		SERKOWSKI MM		COMPUTER	C27653	W	386SX	SX91112902	222B 1 200E	
DDW	W16F00		WILSON DW		COMPUTER	C32925	W	LTE38660	6209HAT3180	222B 3 200E	
DDW	W16F00		WAY KJ		COMPUTER	C36819	W	386SX	AT92054015	MO995 1 200E	
DDW	W16F00		LAUGHERY PH		COMPUTER	C36826	W	386SX	AT92050615	222B 9 200E	
DDW	W16F00		WILSON DW		COMPUTER	C39241	W	38625	USK2001432	222B 3A 200E	
DDW	W16F00		ROBINSON PA		COMPUTER	C39331	W	38625	USK2001397	222B 9B 200E	
DDW	W16F00		YARGER JS		COMPUTER	C39356	W	38625	USK2001413	271B 208 200E	
DDW	W16F00		ROEGE PE		COMPUTER	C44744	W	48633E	USR3020221	222B 10 200E	
DDW	W16F00		LAUGHERY PH		COMPUTER	C46224	W	48633E	USR3024592	222B 3 200E	
DDW	W16F00		WILSON RA		COMPUTER	C47031	W	48633E	USD7005773	MO995 6 200E	
DDW	W16F00		BENDER KP		COMPUTER	C49292	W	48633E	USD7009654	222B 12D 200E	
DDW	W16F00		RIDGE TM		COMPUTER	C49293	W	48633E	USD7009874	222B 2 200E	
DGC	W33000	W16H00		WILLIAMS RJ		MONITOR	C13576	EBERLINE	TCM2	NONE 271B	200E
DGC	W33000	W16H00		WILLIAMS RJ		PLAYER	C45759	PANASONIC	PV4250	UNKNOWN 271B	105COU 200E
DGC	W16H00		WILLIAMS RJ		COMPUTER	C11868	W	286G212	AT90069312	271B 101 200E	
DGC	W16H00		WILLIAMS RJ		COMPUTER	C19339	W	386SX	SX91044306	271B 102 200E	
DGC	W16H00		WILLIAMS RJ		COMPUTER	C32462	W	386SX	SX92021719	271B 101 200E	
DGC	W16H00		WILLIAMS RJ		COMPUTER	C36925	W	386SX	AT92059119	271B 300C 200E	
DGC	W16H00		WILLIAMS RJ		COMPUTER	C41274	W	48633E	USJ5018527	271B 105 200E	
DGC	W16H00		HAMM J		COMPUTER	C44663	W	48633E	USR3019548	271B 101C 200E	
DGC	W16H00		BEERS DD		COMPUTER	C46244	W	48633E	USR3025428	MO408 J 20	222B/8B
DGC	W16H00		HATHAWAY SL		COMPUTER	C46681	W	48633E	HKR3013748	271B 101C 200E	
DKS	W16D00		GEHMAN TA		COMPUTER	C50684	W	48633E	USD7014754	271B 211A 200E	
DOD	W16000	W16E00		PENNOCK JL		COMPRESSOR	304461	INGERSOLL	P375WD	142967U8494 225B	OUTSID 200E
DOD	W16000	W16E00		PENNOCK JL		COUNTER	B27392	EBERLINE	HFM6	212 225B	3RDAMU 200E
DOD	W16000	W16E00		PENNOCK JL		COUNTER	B29732	EBERLINE	HFM6	151 225B	AIRLOC 200E
DOD	W16000	W16E00		PENNOCK JL		COUNTER	B39300	EBERLINE	PCM1B	608 225B	SWPLOB 200E
DOD	W16000	W16E00		PENNOCK JL		FORKLIFT	504173	CLARK	C500Y350D	23500108431 225B	200E
DOD	W16000	W16E00		PENNOCK JL		MANLIFT	403971	ECONOMY	SP2130	GG66324D 225B	PIPESH 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	C05480	EBERLINE	AMS3	762 225B	AMUTR1 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	C05485	EBERLINE	AMS3	804 225B	AMUTR2 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	C05421	EBERLINE	AMS3	788 225B	CAMSHO 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	B27379	EBERLINE	PM6	140 225B	ENTRAN 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	A66617	EBERLINE	AMS3	779 225B	GCELL* 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	A66628	EBERLINE	AMS3	814 225B	GCELL* 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	C05435	EBERLINE	AMS3	806 225B	PCAIRL 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	C25579	EBERLINE	AMS3	813 225B	POOLCE 200E
DOD	W16000	W16E00		PENNOCK JL		MONITOR	C25550	EBERLINE	AMS3	818 225B	SAMPLE 200E

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Requested By	Org Code	Sub Cust Org	Change Org Code	User Name	Change User Name	Property Name	Property Number	Mfg Name	Mfg Model	Serial Number	Location
EDR	W16000	W16D00		EBERLE MJ		RECORDER	C50224	SONY	SVO1610	UNKNOWN	221B CRANEC 200E
EDR	W16D30		FRIAR SL		COMPUTER	C14809	W	38625M84	4028AR7B053	271B 207A 200E	
EDR	W16D20		GUNDERSON MJ		COMPUTER	C32499	W	386SX	SX92020719	222B 200E	
EDR	W16D10		HASSON JW		COMPUTER	C34920	W	386SX	SX92043204	271B 204 200E	
EDR	W16D20		KUTSCH DB		COMPUTER	C41149	W	48633E	USI5010991	271B 200A 200E	
EDR/TAB	W16D10		PINKAL JR		COMPUTER	C44072	W	48633E	USR3017480	271B 1STAMU 200E	
JLP	W16000	W16E00				BAG CUTTER-SE	256552	SHOP MADE			225B A*CELL 200E
JLP	W16000	W16900		PENNOCK JL		BUILDING	256373	METAL			225BC 200E
JLP	W16000	W16E00		PENNOCK JL		BUILDING	256374	METAL			225BD 200E
JLP	W16000	W16900		PENNOCK JL		BUILDING	261009				225BE 200E
JLP	W16000	W16900		PENNOCK JL		BUILDING IND	256372	CONCRETE			225B 200E
JLP	W16000	W16D00		ROBBINS ED	[redacted]	BUSS CASK	C45110	SANDIA LAB	R1	USA9511B	225B 200E
JLP	W16000	W16900				CASK	256553	SHOP MADE			225B CANYON 200E
JLP	W16000	W16E00				CIRCUIT BREAK	A24231	HATCH		C8X115	225B WEST 200E
JLP	W16000	W16E00				CIRCUIT BREAK	A24232	HATCH		C8X114	225B WEST 200E
JLP	W16000	W16E00				CLEANER	A19961	HOFFMAN		117190	225BE EBPD15 200E
JLP	W16000	W16E00				COIL	256441	TRANE			225B 200E
JLP	W16000	W16E00				COIL	256442	TRANE			225B 200E
JLP	W16000	W16E00				COIL	256443	TRANE			225B 200E
JLP	W16000	W16E00				COMPRESSOR	FA24246	JOY	WNOL112	201921	225BC 200E
JLP	W16000	W16E00				COMPRESSOR	FA24247	JOY	WNOL112	201920	225BC 200E
JLP	W16000	W16E00		NUNN LL		COMPRESSOR	304454	SULLAIR	375PQDD2W	00483616GHJ	MO863 134454 200E
JLP	W16000	W16E00				CONTROL PANEL	FA24230		BETA		225B INSTRU 200E
JLP	W16000	W16E00				CONTROL PANEL	A24229	HARROP			225B OPER*G 200E
JLP	W16000	W16E00	[redacted]			CRANE	A24235	ACECO	[redacted]		225B 200E
JLP	W16000	W16E00	[redacted]			CRANE	256531	CHECO	[redacted]		225B CANYON 200E
JLP	W16000	W16E00	[redacted]			CRANE	A24224	COFFING	[redacted]		225B G*CELL 200E
JLP	W16000	W16E00				CRANE	A24223	CHECO			225B PC 200E
JLP	W16000	W16E00				DECONTAMINATI	256521	BENDIX COR			225B F*CELL 200E
JLP	W16000	W16E00				DECONTAMINATI	256522	BENDIX COR		E125	225B G*CELL 200E
JLP	W16000	W16E00				DRYER	A24216	KAHN		3919	225B HVAC 200E
JLP	W16000	W16E00				DUCT	256487				225B 200E
JLP	W16000	W16E00				ELECTROPOLISH	262411	SHOP MADE			225B F*CELL 200E
JLP	W16000	W16E00				FACSIMILE	C49995	BROTHER	BRPPF1550M	H51651358	MO863 6 200E
JLP	W16000	W16E00				FAN	A24220	ALADDIN			225B 200E
JLP	W16000	W16E00				FAN	A24221	ALADDIN			225B 200E
JLP	W16000	W16E00				FAN	A24237	ALADDIN			225B 200E
JLP	W16000	W16E00				FAN	A24238	ALADDIN			225B 200E
JLP	W16000	W16E00				FAN	A24251	ALADDIN			225B 200E
JLP	W16000	W16E00				FAN	256433	ALADDIN			225B ROOF 200E
JLP	W16000	W16E00				FILTER	262360	SHOP MADE			225B PIT*EA 200E
JLP	W16000	W16E00				FILTER	261897	SHOP MADE	K-3		225B WESTPI 200E
JLP	W16000	W16E00				FILTER	256491	SHOP MADE			225BB UNDERG 200E
JLP	W16000	W16E00				FILTER	256492	SHOP MADE			225BB UNDERG 200E

? ? SHOULD BE JAN & 16E00

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equested By	Org Code	Sub Cust Org	Change Org Code	User Name	Change User Name	Property Name	Property Number	Mfg Name	Mfg Model	Serial Number	Location
JLP	W16000	W16E00				FILTER HOUSIN	FA24249	FLANDERS		FSM-85-2	225B AMU 200E
JLP	W16000	W16E00		PENNOCK JL		FILTER HOUSIN	256376	CONCRETE		K1	225BA 200E
JLP	W16000	W16E00		PENNOCK JL		FILTER HOUSIN	256377	CONCRETE		K3	225BB 200E
JLP	W16000	W16E00				FIRE ALARM EQ	A24302				225B 200E
JLP	W16000	W16E00		PENNOCK JL		FURNACE	B29720	HARROP			225B B&C 200E
JLP	W16000	W16E00				GENERAL SYSTE	256423				225B 200E
JLP	W16000	W16E00				GENERAL SYSTE	262922	SHOP MADE			225B 200E
JLP	W16000	W16E00				GENERATOR	A24301	CALLANAN			225B HVAC 200E
JLP	W16000	W16E00				HEAT EXCHANGE	256594	SPIRAL			225B PC1 200E
JLP	W16000	W16E00				HEAT EXCHANGE	256595	SPIRAL			225B PC3 200E
JLP	W16000	W16E00				HEAT EXCHANGE	256596	SPIRAL			225B PC4 200E
JLP	W16000	W16E00				HEAT EXCHANGE	258293				225B PC5 200E
JLP	W16000	W16E00				HEAT EXCHANGE	258294				225B PC6 200E
JLP	W16000	W16E00				HEAT EXCHANGE	258295				225B PC7 200E
JLP	W16000	W16E00				HEAT EXCHANGE	262278				225B SAMPLE 200E
JLP	W16000	W16E00				HOIST	262032	LODESTAR			225B CMS 200E
JLP	W16000	W16E00				HOIST	262033	LODESTAR			225B CMS 200E
JLP	W16000	W16E00				HOIST	262034	LODESTAR			225B HMS 200E
JLP	W16000	W16E00				HOIST	262035	LODESTAR			225B MANIPU 200E
JLP	W16000	W16E00				HOIST	262036	COFFING			225B MANIPU 200E
JLP	W16000	W16E00				HOOD	258315	SHOP MADE			225B MANIPU 200E
JLP	W16000	W16E00				INSTRUMENTATI	256386				225B 200E
JLP	W16000	W16E00				INSTRUMENTATI	256488				225B 200E
JLP	W16000	W16E00				INSTRUMENTATI	256533				225B 200E
JLP	W16000	W16E00				INSTRUMENTATI	256599				225B 200E
JLP	W16000	W16E00				INSTRUMENTATI	262279				225B 200E
JLP	W16000	W16E00				INSTRUMENTATI	256563				225B AMU 200E
JLP	W16000	W16E00				INTERCOMMUNIC	256493				225B 200E
JLP	W16000	W16E00				MOTOR CONTROL	FA24288	CUTLER HAM	B429P1	6LF-9814674	221B ELEC*G 200E
	W16D40		BURTON KA		COMPUTER	C44063	W	48633E	USR3017610	271B 206A 200E	
PTS	W16000	W16E20		JENNINGS-MILL		CAMCORDER	C12035	SONY	CDV101	204225	MO408 200E
PTS	W16000	W16E20		JENNINGS-MILL		CAMCORDER	C12034	SONY	CDV101	204226	MO863 200E
PTS	W16000	W16E00		NUNN LL		CAMCORDER	B45904	PANASONIC	AG170	E8HD02887	MO863 4 200E
PTS	W16000	W16E00		NUNN LL		CAMERA	C30107	PANASONIC	WVCL304	17A03896	272B 200E
PTS	W16000	W16E00		NUNN LL		CAMERA	C30108	PANASONIC	WVCL304	16A02170	272B 200E
PTS	W16000	W16E00		BRIST LO		CAMERA	C49015	PENTAX	ZOOM 105R	6908007	MO408 C 200E
PTS	W16000	W16E00		NUNN LL		CAMERA	C00851	ETV	1250	450	MO863 4 200E
PTS	W16000	W16E00		SAUERESSIG PT		FACSIMILE	B92986	3M	2225	109496	MO029 A 200E
PTS	W16000	W16000				MANIPULATOR	FA20602	MINARICK	US717	261	2101M 200E
PTS	W16000	W16E00		NUNN LL		MONITOR	C00870	JVC	TMR9U	16408008	MO863 4 200E
PTS	W16000	W16E00		NUNN LL		RECORDER	C00872	JVC	BRS611U	16410251	MO863 DECK 200E
PTS	W16000	W16E00		PENNOCK JL		TRAILER	6405740	BUTLER	GB3012A	848882	225B OUTSID 200E
	W16A20		ANDERSON BS		COMPUTER	C14810	W	38625M84	4028AR7B057	MO408 J 20	need to excess
	W16E00		PAWLAK MW		COMPUTER	C17915	W	38625M84	4011AR7B003	MO029 C 20	need to excess

Requested By	Org Code	Sub Cust Org	Change Org Code	User Name	Change User Name	Property Name	Property Number	Mfg Name	Mfg Model	Serial Number	Location
DoD	W16000	W16000				TANK	256540	SHOP MADE	LLOY		225B D*CELL 200E
	W16000	W16900				TANK	256541	SHOP MADE			225B D*CELL 200E
	W16000	W16900				TANK	256542	SHOP MADE			225B D*CELL 200E
	W16000	W16900				TANK	262413	SHOP MADE			225B D*CELL 200E
	W16000	W16900				TANK	256545	SHOP MADE			225B E*CELL 200E
	W16000	W16900				TANK	256548	SHOP MADE			225B E*CELL 200E
	W16000	W16900				TANK	256544	SHOP MADE			225B F*CELL 200E
	W16000	W16900				TANK	256543	SHOP MADE			225B G*CELL 200E
	W16000	W16900				TANK	256597	SHOP MADE			225B PC 200E
	W16000	W16900				TANK	256559	SHOP MADE			225B SOUTH* 200E
DoD	W16000	W16900		SMITH DK		TANK	A30699	HOOVER	H282989	794111	225BC TANK10 200E
TAB	W16000	W16000				TANK	185108			101	271B AMU 200E
	W16000	W16000				TANK	226836	SHOP MADE			271B AMU 200E
	W16000	W16000				TANK	229031	EVANS		H-321	271B AMU 200E
	W16000	W16000				TANK	F185091			H-305	271B AMU 200E
	W16000	W16000				TANK	FA24254			M-401	271B AMU 200E
	W16000	W16000				TANK	FA24255			M-402	271B AMU 200E
	W16000	W16000				TANK	FA24307	NW COPPER			276B 200E
	W16000	W16D00		SMITH DK		TELEVISION	C40266	SONY	KV27EXR25	7119263	271B B103 200E
	W16000	W16900				TELEVISION EQ	A24250	COHU			225B AMU 200E
	W16000	W16000				TELEVISION EQ	227213				272B CELL*1 200E
TAB	W16000	W16000				TELEVISION SY	269335	COHU			221B CANYON 200E
RGL	W16000	W16900				TOTALIZER	A20277	FISCHER PO	50PR1221		2101M 200E
RGL	W16000	W16000				TOWER	225297	SHOP MADE		H261003	2101M 200E
RGL	W16000	W16000				TOWER	225298	SHOP MADE		H260998	2101M 200E
EDR	W16000	W16000				TOWER	257711	SHOP MADE			221B 200E
	W16000	W16000				TOWER	262377	SHOP MADE			221B 200E
	W16000	W16000				TOWER	226913	SHOP MADE			221B CANYON 200E
	W16000	W16000				TOWER	226945	SHOP MADE			221B CANYON 200E
	W16000	W16000				TOWER	226946	SHOP MADE			221B CANYON 200E
	W16000	W16000				TOWER	226947	SHOP MADE			221B CANYON 200E
	W16000	W16000				TOWER	226998	FANSTEEL			221B CANYON 200E
EDR	W16000	W16000				TOWER	229091	AUBENDERSO			221B CANYON 200E
DoD	W16000	W16900				TOWER	227207	SHOP MADE			225B POOL*1 200E
	W16000	W16900				TOWER	227208	SHOP MADE			225B POOL*1 200E
	W16000	W16900				TOWER	A24248	BALTIMORE	IL		225BC WEST 200E
	W16000	W16E00	[redacted]	PAWLAK MW	[redacted]	TRAILER	403969	NELSON	ART207D	9A14S27P101	225B 200E
	W16000	W16900				TRANSFORMER	A24233	STANDARD		C5521P	225B WEST 200E
DoD	W16000	W16900				TRANSFORMER	A24234	STANDARD		C5520P	225B WEST 200E
TAB	W16000	W16000				TRESTLE	269064	STEEL PIPE			211B 200E
TAB	W16000	W16000				TRESTLE	269065	STEEL PIPE			211B 200E
TAB	W16000	W16000				TRESTLE	269066	STEEL PIPE			211B 200E

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WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

_X_Final

Checklist Item:

4.2.1.2

Acceptance Criteria:

Documentation that shows cranes, hoists, and forklifts to be used are current with all hoisting and rigging manual (successful completion of load tests, results of third party inspections, and performance of preventive maintenance).

Discussion:

Requirements for crane PM's on the 25T (Crane Pad), 15T (Canyon Crane) and G Cell hoist and forklift were determined by the previous crane cognizant engineer are compiled in the following Tables.

25-Ton Aceco Crane Status				
PM #	**Description**	**Frequency (Schedule)**	**Last Done (Date)**	**Next Due (Date)**
Other Inspections				
n/a	NDE:Crane Hook (Hoist & Rigging Manual Sec 4.3)	5 yr	04-27-92	Apr 97
n/a	NDE:40,000 lb spreader bar hook (Hoist & Rigging Manual Sec 4.3)	5 yr	04-02-93 2B-93-0403	Apr 98
n/a	3rd Party Inspection	2 yr	12-95 2B-95-01138	Dec 97
Preventive Maintenance				
2B35037	Hoisting Equipment Load Test & NDE	5 yr	04-21-92 2B-92-0578	Apr 97
2C22011	Electrical Inspections	12 mo	11-95 2B-95-00872	Nov 96
2C23017	Inspections and Lubrications	6 mo	7-95 2B-96-1105	1/97
2C35007	Annual Condition Inspection Report (was 2B35005)	12 mo	05-96 2B-96-00427	May 97
2C35008	Hoist and Lower Block Inspection (was 2B35003)	1 mo	Aug 95 2B-96-0837	Aug 96 2B-96-1206
2C35010	Hook and Drum Inspection Report (was 2B35016)	12 mo	Mar 96 2B-96-0257	Mar 97

15-Ton Canyon Crane Status				
PM #	Description	Frequency (Schedule)	Last Done (Date)	Next Due (Date)
	Other Inspections			
n/a	NDE : Crane Hook (Hoist & Rigging Manual Sec 4.3)	5 yr	06-10-92	Jun 97
2B35051	NDE : 30,000 lb spreader bar hook (Hoist & Rigging Manual Sec 4.3)	5 yr	01-08-92	Jan 97
n/a	3rd Party Inspection	2 yr	08-11-95 2B-95-00648	Aug 97
	Preventive Maintenance			
2B35036	Hoist Equipment Load Test	5 yr	05-06-92 2B-92-0521	May 97
2C22003	Crane & 1-Ton hoist Inspections	12 mo	08-22-95 2B-95-0686	Aug 96 2B-96-1213
2C23001	Crane & 1 Ton Aux Hoist Inspections	6 mo	04-22-96 2B-96-0705	Oct 96
2C23005	Inspections and Functional Test	12 mo	07-01-96 2B-96-00841	Jul 97
2C23007	Retriever Inspection	12 mo	04-19-96 2B-96-0407	Apr 97
2C35002	15-Ton Checo Crane Hoist Rope & Lower Block Inspection	1 mo	July 96 2B-96-00256	Aug 96 2B-96-1205
2C35004	15-Ton Checo Annual Condition Inspection Report	12 mo	04-19-96 2B-96-00256	Apr 97
2C35009	15 ton Main Crane & 1 Ton Aux Hook & Drum Inspection (was 2B35012)	12 mo	08-17-95 2B-95-0580	Aug 96 2B-96-1214

G-Cell Hoist Status				
PM #	Description	Frequency (Schedule)	Last Done (Date)	Next Due (Date)
	Preventive Maintenance			
2C35015	Chain Hoist Inspection	12 mo	03-07-94	Mar 94 2B-96-1245
	Hoisting Equipment Load Test	5 Yr	03-15-93	Mar 98
	3rd Party Inspection	2 yr	06-96	Jun 98

WESF Forklift:

DOE-RL-92-36, Section 6.0 Forklifts, Item 6.11.3.2, "Maintenance Inspection Frequency" requires annual inspection of forklifts or 150 hrs of operation. Fleet maintenance performed a checklist inspecton on December 17, 1996 at 116 hours of operation. As of July 24, 1996, the BUSS cask forklift has 128.6 hours of operation. Based on the expected low use of the forklift, this PM is expected to be valid through the ARECO shipments.

Supporting Documentation:

Auditable copies of the PM's listed above have been compiled and are in a crane book maintained by the BUSS cask custodian.

Fork lift inspection attached.

Outstanding Items/Limitations:

Overdue Items:

G cell hoist annual condition report is 3 years overdue. Maintenance engineering is adding the G cell hoist to an existing hoist inspection routine. Package 2B-96-1245, "2C35014 Chain Hoist Inspection" has been prepared and needs to be on the final readiness punchlist.

Items due in August:

The following items are due in August which implies that these PM are required to be completed if the unloading operation extends into September.

2B-96-1205, 2C35002, "15T Checo crane hoist rope and lower block inspection"
2B-96-1206, 2C35008, "25T hoist and lower block inspection"
2B-96-1213, 2C22003, "Crane and 1 T hoist inspections" (15T)
2B-96-1214, 2C35009, "15T main crane and 1 T aux hook and drum inspection"

Completion: _____ Date: 7/30/96
L. L. Nunn

Concurrence: _____ Date: 7/30/96
P. T. Saueressig

128.6

Type: T5

FORKLIFT PM CHECKLIST

This checklist is for all forklifts. Hour meter reading 1116

Mechanic to designate by [X] each item is ok. N A if item is not applicable.

Reference manufacturer's service manual for adjustment and inspection instructions.

	NEEDS 1 MONTH OR ANNUAL OR SET WITH 150 HOURS 500 HOURS
Electric lift-Contact points	N/A X
Electric lift-S.C.R. control system	N/A
Electric traction motors	N/A
Instruments	✓
Battery and cables	✓
Starting system	✓
Charging system	✓
Distributor-Tune up	✓
Engine	✓
Crankcase vent. P.C.V. valve	✓
Cooling system	✓
Exhaust system	✓
Clutch-st rq-travel	✓
ransmission-A.T.C.	✓
Rear axle-steering gear	✓
FR suspension	✓
FR wheel bearings	✓
Rear wheel bearings	✓
Wheel and master cylinder	✓
FR brake lining	✓
Rear suspension	✓
FR differential	✓
FR brake chambers	✓
Rear brake chambers	N/A
Brakes-service parking	✓
Tires	✓
Power control system	N/A
Air system	✓
Hydraulic system	✓
Sprockets-pulleys	✓
Boom/mast assembly and attachments	✓
Fuel tanks	✓
Heater	✓
Doors-body-windows	✓
Horn-wipers-lights	✓
Check all instruction stickers and warning labels. Note: All stickers and labels should be easily readable	✓
Special equipment	✓

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Comments:

Date completed: 10-2-95 Mechanic: R Blevins

Vehicle Fleet Management System
Job Card
For Job #95L00275

75 4173 2711 Yard 37

SHOP: 08 PLANNER: PJB JOB LOCATION: SHOP PRIORITY: 3 ODO/HR: 16 GSA ACT#: AUTH AMT: $

EQUIP.ID: LUBE LICENSE #: CHARGE CODE: VLUBE DATE ENTERED: 12/05/95 ACCEPTED: 12/05/95 CLOSED: N

REQUESTER: P BRADY PHONE: 3-2404 AREA: 200E BUILDING: 2711E SCHED START: SCHED COMP:

JOB COMMENTS

C/B 45

[ ] Warranty Service-->Est$ _____ [ ] Odo/Hr Meter Chg-->Old _____ [ ] Unplanned Job [ ] Void

PARTS AND MATERIALS

EQUIP NUM	INVOICE NUM	MFG LINE	CHARGE CODE	INVOICED TO	PART NUM	PART DESCRIPTION	QTY	UNIT PRICE	CORE COST	ADMIN ADDER	EXTENDED COST	TOE	INVOIC DATE

Job Total Labor Hours: 0.00 Job Total Labor Cost: 0.00 Job Total Parts and Material Cost: 0.00 Job Total Cost: 0.00

Verify Odo/Hr Reading before signing Mechanic Signature Gary Robins Manager _____

WESF PREPAREDNESS FOR ARECO CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__x__Final

Checklist Item:

4.2.1.3

Acceptance Criteria:

Documentation that shows all lifting yokes, shackles, and slings required for receiving cesium capsules, transported in the BUSS cask, have been identified and are compliant with the Hoisting and Rigging Manual requirements (inspections, load tests, and design safety factor) or discrepancies formally waived.

Discussion:

BUSS cask lifting fixtures are specifically engineered for lifting the BUSS cask and are controlled via the BUSS cask Safety Analysis for Packaging. The initial design, load test and NDE for the lifting fixtures is attached. By inspection the lifting fixtures exceed the design load factors required by the hoisting and rigging manual.

Annual inspection of the lifing fixtures was performed in June 1996.

Supporting Documentation:

Initial design, load test and NDE from Sandia National laboratories [2B-96-0111/P] PM 2C35013, "Annual BUSS Cask Lift Equipment"

Outstanding Items/Limitations:

None.

Completion: _____ Date: 7/26/96
L. L. Nunn

Concurrence: _____ Date: 7/26/96
P. T. Saueressig

*. *INFORMATION ONLY* ***

=========================J-1 WORK REQUEST (W110)=========================

Page: 1 13:33:09 06 MAY 1993

1. Document Number 2B-93-00446/W *GENERIC WORK ITEM*
2. Work Item Title INSPECT-TAG BUSS CASK LIFTING FIXTURES

==

3. System C99R *RSI OFF SITE*

4. Components
   Component Number Name

   Temporary Number Name

5. Location

   Facility 2C *WESF*
   Bldg/Rm 225B Other Other

6. Associated Components
   Component Number Name

		Date	Organization
7. Originator Name	SAUERESSIG,PT	05/06/93	16420
Telephone No.	2-0071 MSIN S6-65		

8. Charge Code KB17E

9. Work Item Description

   PERFORM INSPECTION AND TAG THE BUSS CASK LIFTING FIXTURES. FIXTURES ARE SUPPLIED TO WHC BY SANDIA NATIONAL LABS WITH LOAD TEST DATA AND NDE RESULTS. ENGINEERING WILL SUPPLY THE SNL DRAWINGS AS ADDITIONAL INFORMATION. PROMPT COMPLETION IS REQUIRED TO FULFILL CESIUM PROGRAM COMMITMENTS

	Signature	Date
10. Operations Review	BROWN,TA [signature]	05/06/93
11. Priority	2	
12. Phase Designator	P3 *3RD QUARTER (APRIL 1-JUNE 30)*	
13. Correct Maint. Assessment	N	
14. Personnel Safety Related	N	
15. Cognizant Engineer	SAUERESSIG,PT Paul T Saueressig	
16. Cognizant Manager	ROBBINS,ED	

17. Reference Documents Type

S49072	Drwg	DBID 8E118	Load
S49069	DRWG	9/20/84 Sandia Lab	Ltr
AD1560	PR	DBID 8E0155	Maint
DBID 8E134	ML	DBID 8E133	Maint
9/21/84 Lifter Analysis	Ltr	DBID 8E117	Maint
9/14/84 Lifter Analysis	Ltr.		

9/13/93

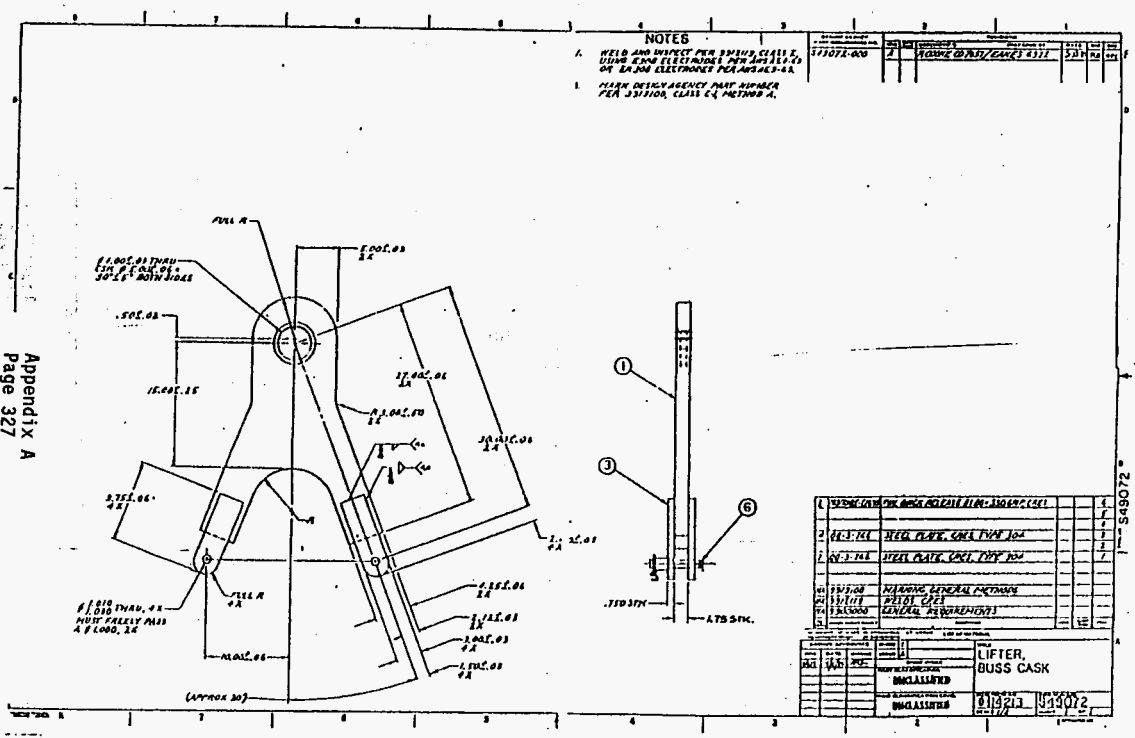
18. Comments

=========================J-1 WORK REQUEST (W110)=========================

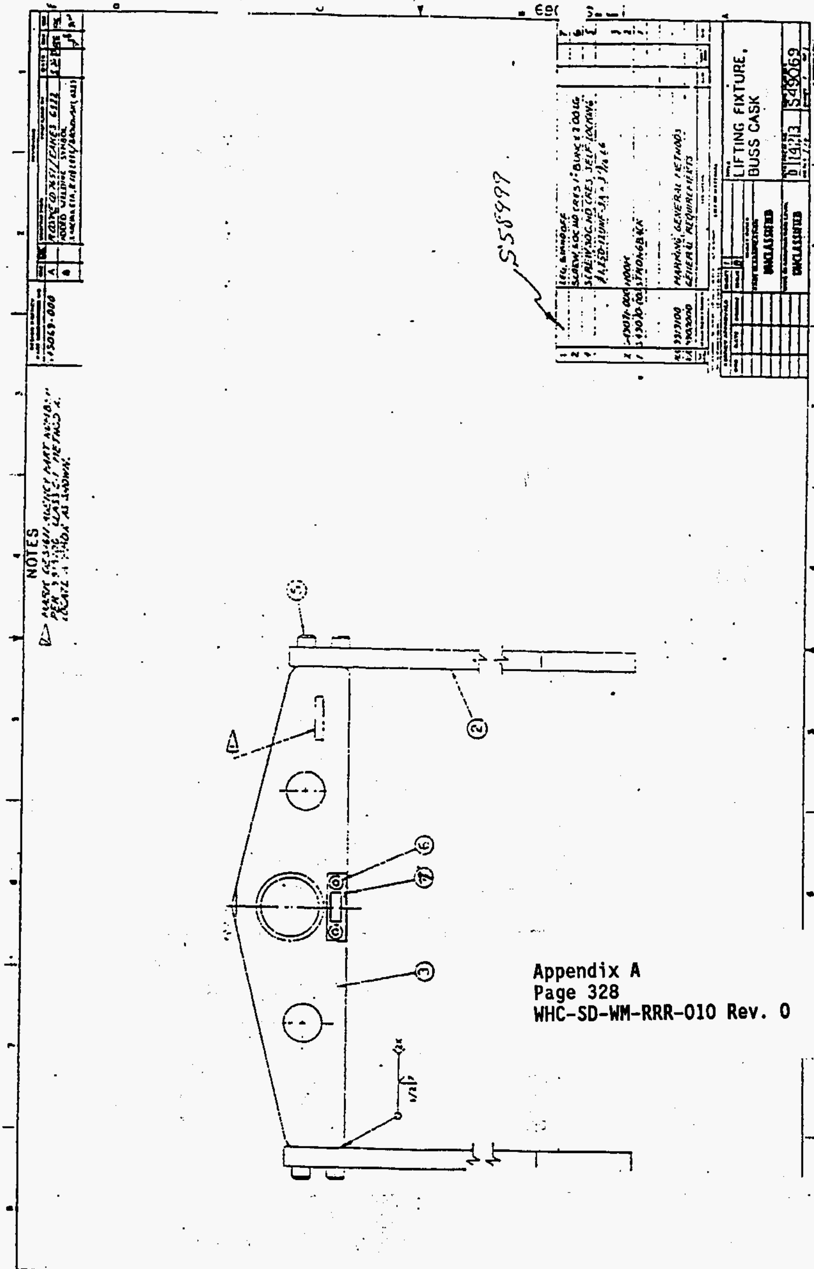
*** INFORMATION ONLY ***

1. Document Number 2B-93-00446/W *GENERIC WORK ITEM*
2. Work Item Title INSPECT-TAG BUSS CASK LIFTING FIXTURES

THIS J-1 WAS INITIATED BY THE COG ENGINEER. WORK CONTROL MAY
VALIDATED IT FOR ENGINEERING - PTS


NOTES
1. WELD AND INSPECT PER AWS/D1.1 CLASS T, USING E308 ELECTRODES PER AWS A5.4 OR E4,308 ELECTRODES PER ANSI/AWS A5.4.
2. MARK DESIGN AGENCY PART NUMBER PER 331100, CLASS C4 METHOD A.
FULL R
.500±.05
15.00±.25
17.00±.01
R3.00±.50
9.75±.06
FULL R
4 Ø.810 THRU, 4 X Ø1.010 MUST FREELY PASS A Ø1.000, 2X
11.00±.06
(APPROX 30°)
.750 STK.
.875 STK.
LIFTER, BUSS CASK
UNCLASSIFIED
S49072

4/95


NOTES
LIFTING FIXTURE,
BUSS CASK
UNCLASSIFIED

BUSS CASK ANCILLARY EQUIPMENT

TOOLS, TEST EQUIPMENT, HANDLING EQUIPMENT

PART NUMBER	DESCRIPTION	QTY.	PKG/SHIPPED	DATE	VERIFIED BY
S49072-000	LIFTER (ref pg 8)	1	R -101	4/23/93	MP · DRB
S49069-000	LIFTING FIXTURE (ref pg 9-10)	2	R -102, -103	4/23/93	MP · DRB
S48501-000	HANDLING FRAME	1 (-101)		5-10-93	DRB
S49071-000	BASKET GUIDE ASSY (ref pg 10)	1 (-02)		4-23-93	DRB MP
S48590-000	LID LIFT FIXTURE -101	1	R	4/23/93	MP · DRB
S52602-000	PALLET W/TIEDOWN HARDWARE	1		5-10-93	DRB MRS
S50057-000	BASKET ASSY, 4H (ref pg 4)			5-10-93	DRB MRS
S50058-000	BASKET ASSY, 6H (ref pg 5)			4-23-93	DRB MP
S50059-000	BASKET ASSY, 12H (ref pg 6)			5-10-93	DRB MRS
R35032-000	HELIUM BACKFILL PLUMBING ASSY	1		4/23/93	MP · DRB
R35032-100	HYDRO TEST PLUMBING ASSY	1		4/23/93	MP · DRB
R35032-200	LID LEAK TEST PLUMBING ASSY	1		4/23/93	MP · DRB
R35032-300	PORT LEAK TEST PLUMBING ASSY	1		4/23/93	MP · DRB
	-CONTINUED ON NEXT PAGE-				

NOTES/COMMENTS:

J-4 RESOLUTION/RETEST (W140)

1. Document Number 2B-93-00446/W *GENERIC WORK ITEM*
   Work Item Title INSPECT-TAG BUSS CASK LIFTING FIXTURES

2. Essential Systems N/A
3. Resolution
   NOTE: SEE ATTACHED DATA FROM THE SANDIA LABS ON THE LOAD TEST AND NDE DATA.
   1. INSPECT THE BUSS CASK LIFTING FIXTURES PER THE ANNUAL PM REQUIREMENTS. THIS WILL BE THE FIRST INSPECTION BY WHC.
   2. THERE ARE TWO LIFTING YOKES THAT WILL BE CHECKED ON THIS PM. THE YOKES ARE LOCATED ON THE 25 TON CRANE PAD AT WESF.
   3. SEE ATTACHED DIRECTIONS ON THE INSPECTION.
   4. CONTACT STEVE FRIAR IF THERE IS A PROBLEM.
   5. COMMENTS: Pound + Ferguson
   6. THIS CHECK WILL BE ADDED TO THE ANNUAL PMS FOR LIFTING EQUIPMENT AT B PLANT.

Lifter Analysis G
9/21/84
9/14/84 Lifter Analysis Ltr
DBID 8E118 LOAD

4. Impact Level/Approval Requirements #-3-Q RRR 5/18/93

5. Tech Spec/OSR Requirements/Reference

7/13/93 AD-1560 PR
DBID 8E134 MN

6. Reference Documents Type

9/20/84 Sandia National Lab Ltr
DBID 8E155 Maintenance Manual
DBID: 8E133 ~~(c) & (6) & (3) & (6)~~ maint Manual
DBID: 8E117 ~~(c) & (3).~~ Maint Manual S49069 Dwg
~~DBID: 8E049 (1) & (a).~~ S49072 Dwg

~~DBID: 8E115 (1-95)~~
~~DBID: 8E133 (c) & (6)~~

5/18/93

7. Comments
   Listed are the fixtures Inspected on 5/18/93. Horizontal Fixture S49072-101
   Vertical Fixtures, S49069-102 & S49069-103

8. Retest Requirement N
9. Mode N/A
10. Retest
    N/A

11. QC Involvement in Retest NONE

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12. PIC FRIAR,SL

13. PIC Org. PROD CONTROL

	Signature	Date
14. Resolution By		5/12/93

15. Plant Forces Work Review Required N Number N/A

16. Approvals	Signature	Date
Cognizant Engineer		5/18/93
Cognizant Manager		5/18/93
Environmental Assurance	NA	
Health/Safety Assurance	NA	
Quality Assurance		5/18/93

1. Document Number 2B-93-00446/W *GENERIC WORK ITEM*
   Work Item Title INSPECT-TAG BUSS CASK LIFTING FIXTURES

Additional Approvals: [signature] 5/15/93

17. Resources Required

Res Code	Description	No.	Est Hrs	Act Hrs
35	IRONWORKER/RIGGER	2	1	2
32B	CRANE OPERATOR MSTR PROCESS	1	1	1

	Signature	Date
18. Field Work Complete	[signature] N/A	5/14/93
19. Retest Satisfactory	N/A	
20. QC Verify Retest (If Required)	N/A	5/18/93

8-95

ANNUAL CONDITION REPORT

3.0 INSTRUCTIONS

3.1 Inspect each spreader bar for deformed, cracked or corroded members and weldments.

3.2 Check for loose damaged or missing bolts, rivets, nuts, pins, etc.

3.3 Visual inspect all load and hook eyes for damage, corrosion, deformation cracks, excessive wear, and signs of over stressing.

3.4 Inspect the paint on each spreader bar for signs of corrosion formation and signs of hidden cracks paying extra attention to welded areas that are covered with paint.

3.5 If any conditions are found that may impact the safe operation of the equipment, immediately attach a DO NOT USE tag to the equipment and notify the Operations and Maintenance Managers.

3.6 If any major or structural repairs are required the equipment must be load tested in accordance with ASME/ANSI B30.20 or ~~WHC-CM-6-4~~ DOE-RL-92-36 section ~~6.0~~ 11.0 C. Brewer 5-18-93

STEP	COMMENTS	INITIALS	DATE
3.1	ok	Stokka	5-18-93
3.2	ok	Stokka	5-18-93
3.3	ok	Stokka	5-18-93
3.4	ok	Stokka	5-18-93
3.5	ok	Stokka	5-18-93
3.6	ok	Stokka	5-18-93

ADDITIONAL COMMENTS: _____

*N/A STEPS ARE APPLICABLE TO INSPECTION

9/95

118(5) of 5

MTS SYSTEMS CORPORATION

TRANSDUCER – TRANSDUCER CONDITIONER CALIBRATION REPORT

14000 TECHNOLOGY DRIVE
EDEN PRAIRIE, MN 55344

CUSTOMER: Sandia C71927-001

SYSTEM NO.: 93528

TRANSDUCER TYPE: 464 80

SERIAL NO.: 750

CONDITIONER MODEL: ______

LAB TEMP.: 70°F

DVM I.D. NO.: 1145

INDICATOR UNIT I.D. NO.: ______

STANDARDIZER I.D. NO.: ______

ZERO SUP: ______

CAL FACTOR INITIAL: ______

CAL FACTOR FINAL: ______

CAL FAC SW: ON / OFF (1 2 3 4 5 6)

RETRACTION: POS ☐ NEG ☐

ADDITIONAL EQUIPMENT: ______

Range 1

RANGE & FULL SCALE: CL1: 44821 SN212

STANDARD CELL/DEVICE I.D. NO.: ______

SHUNT CAL. INITIAL: ______ FINAL: ______

RESISTOR: ______ Ω

EXCITATION INITIAL: ______ FINAL: ______

448 ΔK SW: ON ☐ OFF ☐

ADJUSTMENT: ☐ REQUIRED ☐ NOT REQUIRED

Initial Cal Data	Module Output 464	Error of Reading 44821
100%	10.006	10.005
80%	8.000	8.001
60%	6.005	6.005
40%	3.998	3.998
20%	2.004	2.004
0%	0.000	0.001
-20%	-2.000	-1.998
-40%	-4.005	-4.001
-60%	-6.008	-6.006
-80%	-8.009	-8.007
-100%	-10.009	-10.006

Final Cal Data	Module Output	Error of Reading
100%		
80%		
60%		
40%		
20%		
0%		
-20%		
-40%		
-60%		
-80%		
-100%		

Range 2

RANGE & FULL SCALE: CL2: 44821 SN668

STANDARD CELL/DEVICE I.D. NO.: ______

SHUNT CAL. INITIAL: ______ FINAL: ______

RESISTOR: ______ Ω

EXCITATION INITIAL: ______ FINAL: ______

448 ΔK SW: ON ☐ OFF ☐

ADJUSTMENT: ☐ REQUIRED ☐ NOT REQUIRED

Initial Cal Data	Module Output 464	Error of Reading 44821
100%	9.983	9.981
80%	7.999	7.998
60%	6.008	6.007
40%	4.005	4.005
20%	2.004	2.005
0%	0.000	0.000
-20%	-2.001	-2.000
-40%	-4.004	-4.003
-60%	-6.008	-6.007
-80%	-8.006	-8.006
-100%	-9.997	-9.997

Final Cal Data	Module Output	Error of Reading
100%		
80%		
60%		
40%		
20%		
0%		
-20%		
-40%		
-60%		
-80%		
-100%		

Range 3

RANGE & FULL SCALE: CL3: 44822 SN148

STANDARD CELL/DEVICE I.D. NO.: ______

SHUNT CAL. INITIAL: ______ FINAL: ______

RESISTOR: ______ Ω

EXCITATION INITIAL: ______ FINAL: ______

448 ΔK SW: ON ☐ OFF ☐

ADJUSTMENT: ☐ REQUIRED ☐ NOT REQUIRED

Initial Cal Data	Module Output 464	Error of Reading 44822
100%	10.013	10.010
80%	8.006	8.004
60%	6.004	6.001
40%	4.001	3.999
20%	2.000	2.000
0%	-0.001	0.001
-20%	-2.007	-2.007
-40%	-4.001	-3.999
-60%	-5.999	-5.996
-80%	-8.005	-8.002
-100%	-10.013	-10.010

Final Cal Data	Module Output	Error of Reading
100%		
80%		
60%		
40%		
20%		
0%		
-20%		
-40%		
-60%		
-80%		
-100%		

Range 4

RANGE & FULL SCALE: ______

STANDARD CELL/DEVICE I.D. NO.: ______

SHUNT CAL. INITIAL: ______ FINAL: ______

RESISTOR: ______ Ω

EXCITATION INITIAL: ______ FINAL: ______

448 ΔK SW: ON ☐ OFF ☐

ADJUSTMENT: ☐ REQUIRED ☐ NOT REQUIRED

Initial Cal Data	Module Output	Error of Reading
100%		
80%		
60%		
40%		
20%		
0%		
-20%		
-40%		
-60%		
-80%		
-100%		

Final Cal Data	Module Output	Error of Reading
100%		
80%		
60%		
40%		
20%		
0%		
-20%		
-40%		
-60%		
-80%		

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MTS MEASUREMENT STANDARDS ARE ... STANDARDS AND TECHNOLOGY

PERFORMED BY: B. G[illegible] 10 '92

PROCEDURE FOLLOWED: Static

10-4-95

MTS SYSTEMS CORPORATION
14000 TECHNOLOGY DRIVE
EDEN PRAIRIE, MN 55344

TRANSDUCER – TRANSDUCER CONDITIONER CALIBRATION REPORT

220 Fin Cal

CUSTOMER Sandia C7-927-401 SYSTEM NO.
TRANSDUCER TYPE 661.31A-02 SERIAL NO. 520 CONDITIONER MODEL 448 CAL NO. 212
DVM I.D. NO. 11459 INDICATOR UNIT I.D. NO. 11456 STANDARDIZER I.D. NO. 1109 TEMP. 70°F
ZERO SUP. CAL FACTOR INITIAL CAL FACTOR FINAL CAL FAC SW ON / OFF 1 2 3 4 5 6
RETRACTION POS ☒ NEG ☐ ADDITIONAL EQUIPMENT

RANGE #, FULL SCALE		Initial Cal Data	Module Output	Error % of Reading	Adjustment	Final Cal Data	Module Output	Error % of Reading
1 ±220 kip		100%	10.001		☐ Required ☒ Not Required	100%		
Standard Cell/Device I.D. No. 10630		80%	7.995			80%		
Shunt Cal. Initial 9.207		60%	5.991			60%		
Final		40%	3.991			40%		
Resistor Ω		20%	1.994			20%		
Excitation Initial 8.500		0%	0.000			0%		
Final		-20%	-2.003			-20%		
448 ΔK SW ON ☒ OFF ☐		-40%	-4.005			-40%		
		-60%	-6.005			-60%		
		-80%	-8.002			-80%		
		-100%	-9.995			-100%		

RANGE #, FULL SCALE		Initial Cal Data	Module Output	Error % of Reading	Adjustment	Final Cal Data	Module Output	Error % of Reading
2 ±100 kip		100%	9.997		☐ Required ☒ Not Required	100%		
Standard Cell/Device I.D. No. 10630		80%	7.991			80%		
Shunt Cal. Initial 9.013		60%	5.991			60%		
Final		40%	3.993			40%		
Resistor Ω		20%	1.994			20%		
Excitation Initial 8.810		0%	0.000			0%		
Final		-20%	-2.000			-20%		
448 ΔK SW ON ☐ OFF ☐		-40%	-3.997			-40%		
		-60%	-6.001			-60%		
		-80%	-8.00[illegible]			-80%		
		-100%	-9.99[illegible]			-100%		

RANGE #, FULL SCALE		Initial Cal Data	Module Output	Error % of Reading
3 ±40 kip		100%	10.00[illegible]	
Standard Cell/Device I.D. No. 11212		80%	8.00[illegible]	
Shunt Cal. Initial 9.072		60%	6.00[illegible]	
Final		40%	4.0[illegible]	
Resistor Ω		20%	2.00[illegible]	
Excitation Initial 8.800		0%	0.0[illegible]	
Final		-20%	-1.99[illegible]	
ΔK SW ON ☒ OFF ☐		-40%	-3.9[illegible]	
		-60%	-5.9[illegible]	
		-80%	-7.9[illegible]	
		-100%	-9.980	

MTS 520
MTS 750
FAX TO MIKE PAVLIK 509-372-0232
MAIL W/Z: WSS

RANGE #, FULL SCALE		Initial Cal Data	Module Output	Error % of Reading	Adjustment	Final Cal Data	Module Output	Error % of Reading
4 220 kip		100%	10.013		☐ Required ☒ Not Required	100%		
Standard Cell/Device I.D. No. 11212		80%	8.010			80%		
Shunt Cal. Initial 9.027		60%	6.008			60%		
Final		40%	4.006			40%		
Resistor Ω		20%	2.004					
Excitation Initial 8.800		0%	0.000					
Final		-20%	-1.994					
ΔK SW ON ☒ OFF ☐		-40%	-3.991					
		-60%	-5.991					
		-80%	-7.989					
		-100%	-9.986					

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MTS MEASUREMENT STANDARDS ARE TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

PERFORMED BY B. Szymanski DATE July 9 92

PROCEDURE FOLLOWED Cal # 1234A

Page 4 of 11
11/95

WHITE (FIELD SERVICE ENGINEER) YELLOW (CUSTOMER) PINK (REGIONAL SERVICE MANAGER)

LOAD TEST DATA SHEET

Test Date 8-21-92 Fixture Serial No. 549069-101

Facility Used: LOAD TEST FRAME, 70K lb CAPACITY BUILDING 837, SNLA

Load Cell Mfg MEASUREMENTS SYSTEM INT'L Model MSI 6062C

Serial No. 19123/24177 Cal Exp Date 9-29-91 *

Applied Load: 36,400 lbs.

% of Max Working Load 150%

Start Time: 14:10

Stop Time: 14:25

Test Duration: 15 MINUTES

Final Disposition:

Acceptable ✓ Unacceptable ___

* LOAD CELL CAL DATE IS EXPIRED. OBTAIN & FILE COPY OF RE-CAL WHEN PERFORMED. DB

10-2-92 DOCUMENTATION OF CALIBRATION FOR THE LOAD CELL RECEIVED AND REVIEWED. CELL ACCURACY WITHIN 0.5% AT RANGE USED FOR TEST. TEST ACCEPTED BY DRB 8613

Comments or operational problems: PULLED TO 38,000 AND HELD FOR 15 MINUTES. LOAD DECREASED TO 36,400 lbs OVER 15 MINUTES DUE TO HYDRAULIC LEAK DOWN. TEST PERFORMED PER SECTION 8 OF THE BUSS MAINTENANCE MANUAL AND USED TEST FIXTURE 235028-000.

Conducted by: Mark Cantrell 7613 Dept 8-21-92 Date

Witnessed by: DR Barnett 6643 Dept 8-21-92 Date

BUSS Cask Maintenance Manual — Revision 0, May 1992

LOAD TEST DATA SHEET

Test Date 10-14-92 Fixture Serial No. S/9069-102

Facility Used: 887 Load test tower SNLA

Load Cell Mfg Transweigh Model MSI626OC

Serial No. 12123/24177 Cal Exp Date 9-30-93

Applied Load: 38,520 SEE BELOW

% of Max Working Load ~150%

Start Time: 3:50 PM

Stop Time: 4:00

Test Duration: 39 760#

Final Disposition:

Acceptable X Unacceptable ____

Comments or operational problems: fixture plus spanning beam weighs 1240# - subtract this from 39760# applied load = fixture load of 38520#. TEST PERFORMED PER SECTION 8 OF THE BUSS CASK MAINTENANCE MANUAL, AND USED TEST FIXTURE RI5029-000

Conducted by: Matthew R. Pearson 7813-2 Dep: 10-14-92 Date

Witnessed by: Richard D. Parker 7813-2 Dep: 10-14-92 Date

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13745

LOAD TEST DATA SHEET

Test Date 10-14-92 Fixture Serial No. 849069-103

Facility Used: 887 load test tower SHLA

Load Cell Mfg TransWeigh Model: MS1 6260C

Serial No. 19123/24177 Cal Exp Date 9-30-93

Applied Load: 40 000 lbs. (38,780 see below)

% of Max Working Load ~150%

Start Time: 247 PM

Stop Time: 2:57 PM

Test Duration: 10 min

Final Disposition:

Acceptable X Unacceptable ____

Comments or operational problems: fixture plus spanning beam weighs 1220# — subtract this from 40000# applied load = fixture had load of 38,780#.

Conducted by: Matthew R. Pennington 7813-2 Dept 10-24-92 Date

Witnessed by: Richard D. Parker 7813-2 Dept 10-14-92 Date

TEST WAS PERFORMED PER SECTION 8 OF THE BUSS CASK MAINTENANCE MANUAL AND USED TEST FIXTURE B35023-000.

DI ID: 8E133 (4) of 6

Sandia National Laboratories

Standards Laborator Report

date: Sept 30, 1992

to: L. M. Garcia, 7813-2

Calibration Expiration Date
Sept 30, 1993

S. L. Toledo

from: S. L. Toledo, 2761-3

subject: Calibration of Measurement System Scale

As requested a 70,000 lb capacity Measurement System Scale S/N 19123/24177 was calibrated on-site at a location east of Bldg. 887. A Sandia designed load cell S/N 80-4, whose calibration expires 10-30-92, and a Measurement Group Strain Indicator, S/N 70245, calibration expires 10-1-92 were used as a standard for the calibration. The calibrated scale is expected to be accurate within three percent over the calibration period unless the scale is damaged or modified. A blue calibration sticker has been issued for this Measurement System Scale.

The tabulation below shows the readings from the Strain Indicator and the average of three readings from the Measurement System Scale.

Strain Indicator Readings lbs.	Measured Applied Force lbs.
0	180
5000	5007
10000	9893
15000	14893
20000	19960
25000	25006
30000	29927
35000	34880
40000	39973
45000	44833
50000	49753
55000	54926
60000	59453

copy

15/95

JDBID: BE13355 of 6

Sandia National Laboratories

Standards Laboratory Report

date: April 23, 1991

to: L. M. Garcia, 7813-2

S. L. Toledo

from: S. L. Toledo, 7542

subject: Calibration of Measurement System Scale

A 70,000 lb. capacity Measurement System Scale, S/N 19123/24177, was calibrated on-site at a location east of Bldg. 887. A Sandia designed load cell, S/N 80-4, whose calibration expires 9/29/91, and a Measurements Group Strain Indicator, S/N 70245, whose calibration expires 11/2/91, were used a standard for the calibration. The attached table shows the results for the three calibration runs. There was some difficulty encountered in applying the desired load due to the hoist mechanism and stretch in the nylon straps used in the load path. The average of the three errors for each load step shows a maximum error of 1.2% at approximately 30,000 lbs. and the minimum error of 0.2% at approximately 70,000 lbs.

The calibrated scale is expected to be accurate within three percent over the calibration period unless the scale is damaged or modified. A blue calibration sticker has been issued for this scale.

Copy to:

7542 R. A. May/Calibration File

16/95

Test #1 4-23-91 Test #2

Load Cell	Scale	% Error
0	0	0
11330	11500	1.5
20400	20700	1.47
28720	29000	.974
37530	37720	.506
49570	50000	.867
59880	60000	.200
71180	70,690	.309

Load Cell	Scale	% Error
0	0	0
12320	12400	.649
20810	21000	.913
30610	31000	1.274
39710	40000	.730
49740	50000	.523
60730	61000	.445
70710	70700	-.014

DBI. BE1336(6) of 6

Test #3

Load Cell	Scale	% Error
0	0	0
11900	12000	.840
22630	22800	.751
29880	30280	1.338
40620	41000	.935
49680	50000	.644
59550	60000	.756
69760	70,000	.344

Average % Error

0
.996
1.045
1.195
.724
.681
.467
.213

17 of 95

DB10 SGL 155
COPY

Sandia National Laboratories

Albuquerque New Mexico 87185

date September 11, 1984

to H. R. Yoshimura, 6323

from: A. Gonzales, 6323

subject: Lifting Fixture Analysis

This is a detailed analysis of the BUSS Cask Lifting Fixture. As Figure 1 shows, the lifting fixture consists of a strongback center piece with lifting hooks fastened on both sides. The lifting fixture is required to lift a load of three times the cask weight. The cask weight will be taken as 30000 lbs fully loaded. The entire apparatus is made out of ASTM A514 Alloy Steel with a yield strength of 90000 psi.

Hook Analysis

As the entire lifting device must lift 3W = 90000 lbs, each hook assembly must then take one half the load or 45000 lbs. Referring to Figure 2, the material yielding possibilities are:

a. In tension along the cross-section
b. The hook cross-section at point of maximum moment
c. Bolt cross-section
d. Bolt tearout of hook material

Each of these possibilities will be analyzed in the following sections.

a. Tension along Cross-Section

In the hook assembly arm the point of minimum cross-section is along the bolt. (See Figure 3.) The area is 10.5 in^2. With the load of 45000 lb the resulting stress is 4300 psi which is far less than the 90000 psi yield stress.

b. Hook cross-section

Section A-A in Figure 2 is the critically stressed portion of the hook. This section was analyzed as a curved beam using advanced mechanics of materials[1] procedures.

For a symmetric cross-section it is assumed that radial and shearing stresses are negligible with respect to circumferential stresses. Thus a one-dimensional state of stress exists. Using equation 8-2.11[1].

$$\sigma = \frac{N}{A} + \frac{M_x (A - A_m r)}{Ar(RA_m - A)}$$

18/95

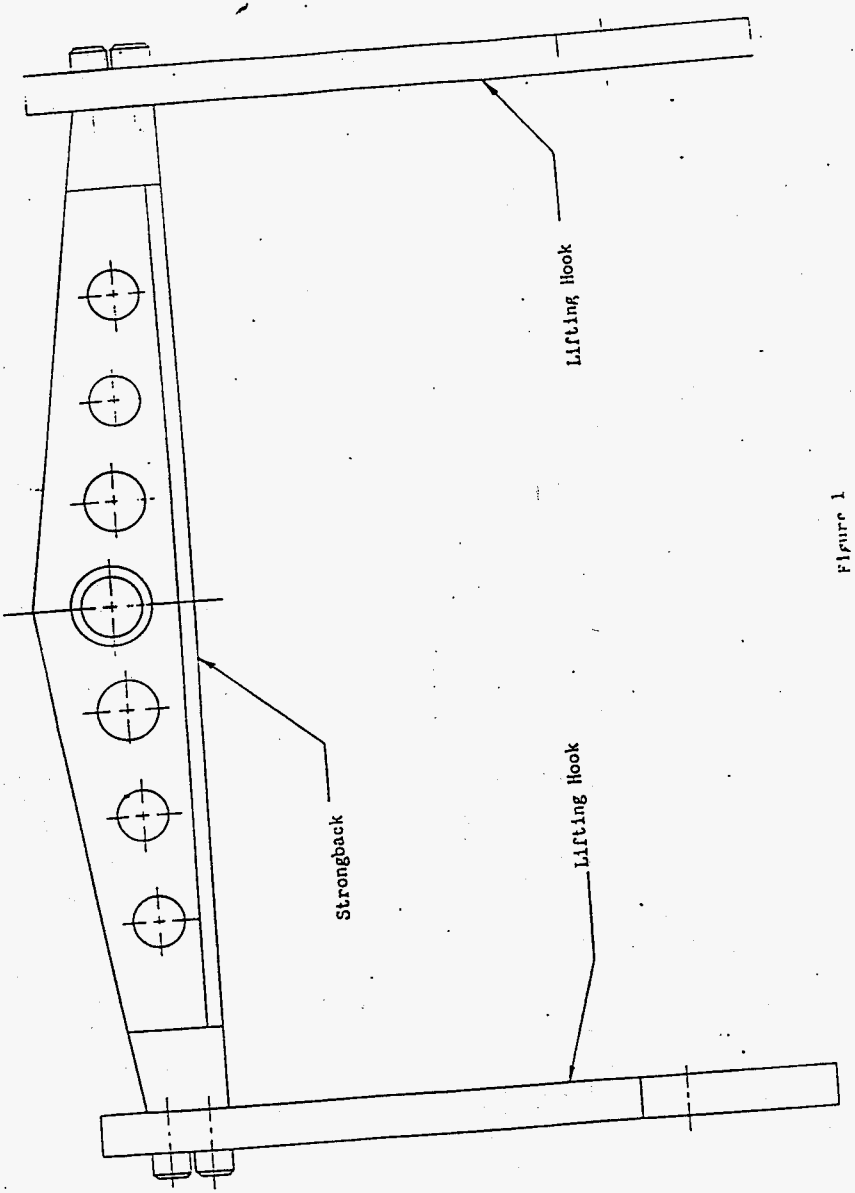


Figure 1

19-75

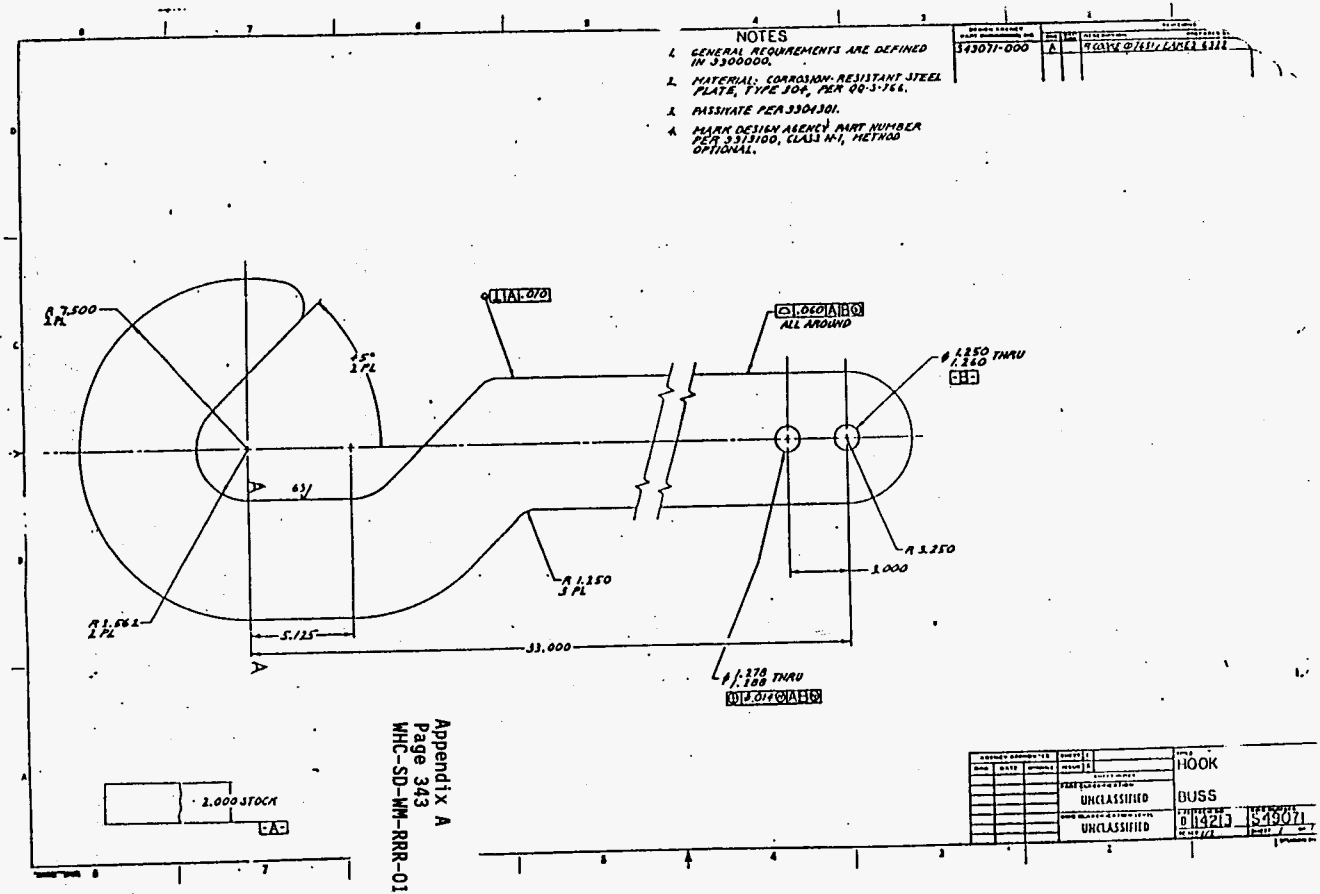


Figure 2

20795

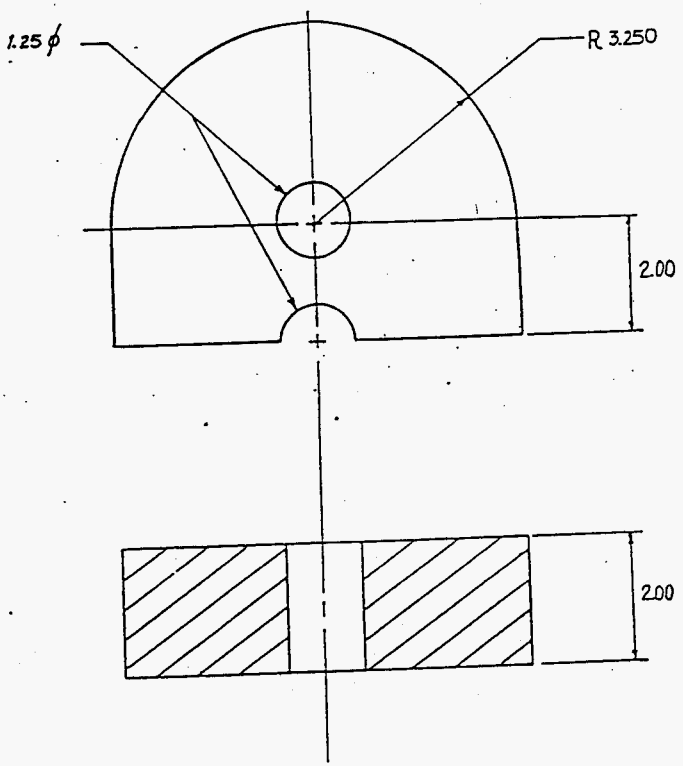


Figure 3

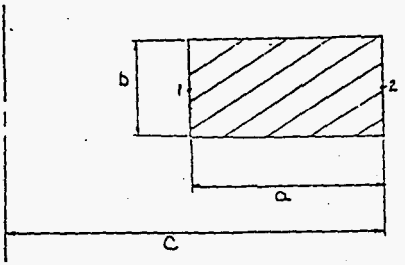
21/95

where:

σ = stress normal to the cross-section
N = applied load to the hook
A = cross-sectional area
M_x = moment with respect to the neutral axis.
r = distance from beam's center of curvature to any point on the cross-section
R = distance from beam's center of curvature to neutral axis (not the same as the centroidal axis)
$A_m = \int \frac{dA}{r}$

Referring to table 8-2.8[1] for expressions Am and R with respect to a rectangular cross-section and solving for stress:

Area = 9.88 in^2
A_m = $b \ln \frac{c}{a}$ = 2.15
R = $\frac{a + c}{2}$ = 5.03 in



N = 45000 lb
M_x = PR = 230 k-in
r = 2.562, 7.5

Tensile stress on the inside radius is 47100 psi and compressive stress on the outer radius is 16200 psi, both well below the allowable yield stress of 90000 psi. As a check using the straight beam formula.

$$\sigma = \frac{P}{A} + \frac{Mc}{I}$$

c = 2.47 in
I = 20 in^4.

Table 8-2-1[1] gives a comparison of stress results obtained for curved beams using the straight beam formula and the elasticity solution. For a R/h (h=4.94 in) ratio of approximately one gives a stress ratio of:

$$\frac{\sigma straight}{\sigma elasticity} = 0.653$$

22/95

Using this fudge factor with the straight beam calculation gives a tensile stress of 47400 psi. This correlates well with the curved beam analysis. Thus, it can be well satisfied that the 47 ksi value is legitimate.

c. bolt cross-section yielding in shear

Two 1.250"-12φ high strength bolts fasten the hook to the strongback. The bolt stress area is 1.07 in^2. The two bolts must carry 45000 lbs in shear or 22500 lbs each. Using the relationship

$$\tau = \frac{4V}{3A}$$

for shear stress gives 28000 psi. The effective von Mises stress for pure shear is

$$.577\ S_{12}$$

the bolt ultimate strength is 150000 lbs in tension. Using a safety factor of 2 for yield, the allowable yielding shear stress is 43300 psi. Thus, the bolts will not fail in shear.

d. Bolt tearout of hook material.

The critical section where the hook material would tear out is between the two bolts. The cross-sectional area between the two bolts at the most narrow point is 1.50 in^2. Assuming each bolt takes one half the load or 22500 lbs, the resultant stress is 15000 psi. The allowable von Mises shear stress is .577 (90000 psi) = 52000 psi. Thus, the bolt will not cause the hook material to tear out.

STRONGBACK ANALYSIS

The main structural member of the lifting fixture is the strongback device. The two lifting hooks are bolted to either end of the strongback. As Figure 4 shows, the strongback is made up of various steel plates welded together. The main plate, which acts like a web, has holes cut out. The following analysis checks the integrity of the assembly to avoid yielding.

The strongback is supported in the center by a lifting device, and the applied load is initiated by the hooks on the ends (Figure 5). It is assumed that the load on the hooks is completely axial and no moments are induced due to any rotation of the strongback. The maximum moment produced by the two 45000 lbs loads occurs at the center, however, each cross-section with a hole plus the cross-sections between the holes will be checked. The results are listed in Table 1. The maximum stress occurring is about 52000 psi which is below the allowable yield stress of 90000 psi.

Strongback Resistance to Shear

Shear stresses produced by the applied loads are investigated here. Figure 6 shows the various cross-sections considered and Table 2 lists the results found. The maximum shear stress calculated of 6820 psi is far below the effective von Mises allowable shear stress of 52000 psi.

23795

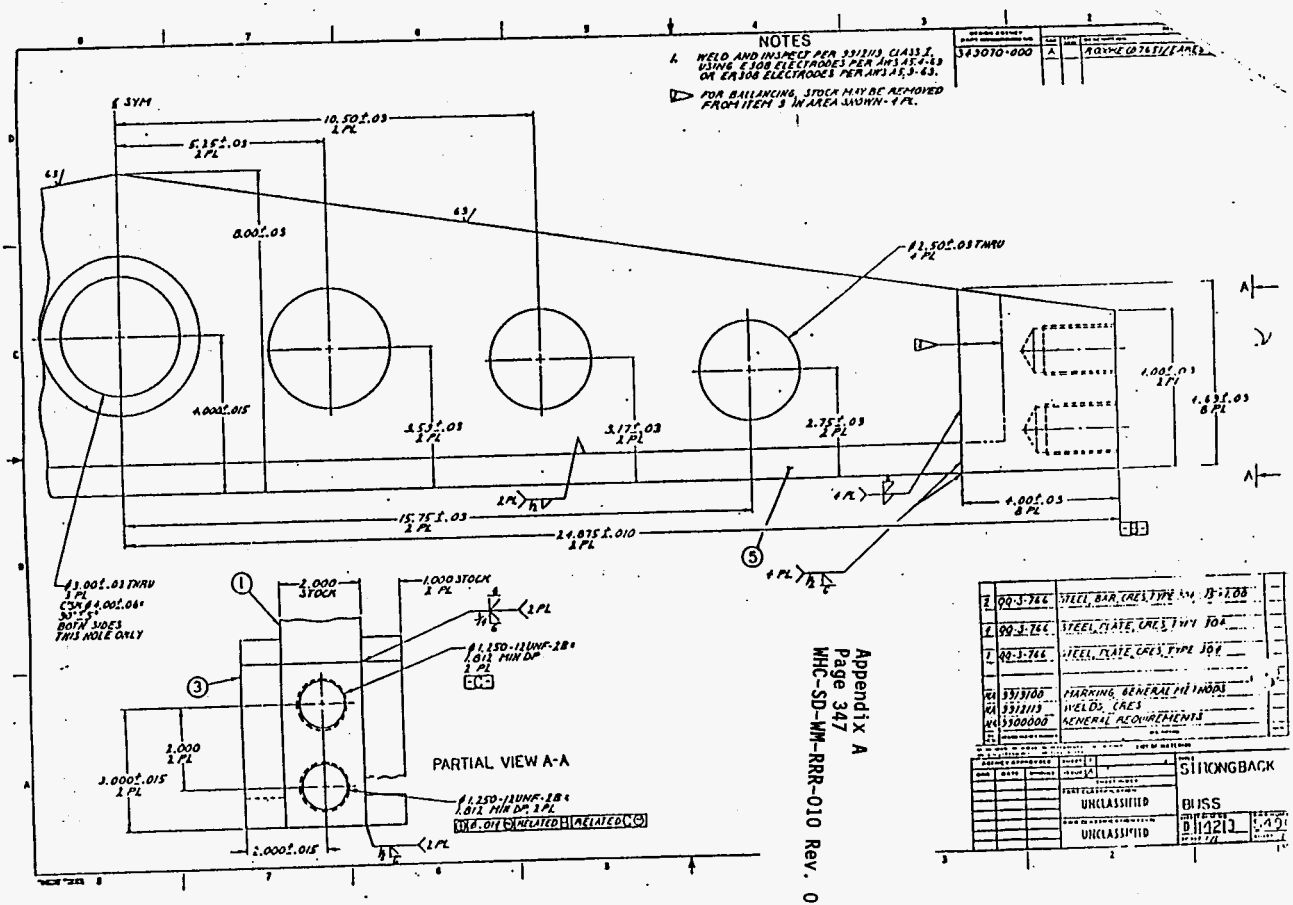

NOTES
4. WELD AND INSPECT PER 9312113 CLASS I USING E308 ELECTRODES PER AWS A5.4-69 OR ER308 ELECTRODES PER AWS A5.9-69.
FOR BALLANCING, STOCK MAY BE REMOVED FROM ITEM 3 IN AREA SHOWN - 4 PL.
SYM
10.50±.03 2 PL
5.25±.03 2 PL
8.00±.03
63
Ø1.50±.03 THRU 4 PL
4.000±.015
3.50±.03 2 PL
3.17±.03 2 PL
2.75±.03 2 PL
1.00±.03 2 PL
1.63±.03 6 PL
4.00±.03 8 PL
15.75±.03 2 PL
24.875±.010 2 PL
Ø3.00±.03 THRU 2 PL
C'SK Ø4.00±.06 x 82°±2° BOTH SIDES THIS HOLE ONLY
2.000 STOCK
1.000 STOCK 2 PL
Ø1.250-12UNF-2B x 1.012 MIN DP 2 PL
PARTIAL VIEW A-A
2.000 2 PL
3.000±.015 2 PL
2.000±.015
.XX±.01 ΔRELATED ΔRELATED
00-3-766 STEEL BAR, CRES, TYPE 410
00-3-766 STEEL PLATE, CRES, TYPE 304
00-3-766 STEEL PLATE, CRES, TYPE 304
9313708 MARKING, GENERAL REQUIREMENTS
9312113 WELDS, CRES
9300000 GENERAL REQUIREMENTS
STRONGBACK
UNCLASSIFIED
UNCLASSIFIED
BUSS
D 11221

Figure 4

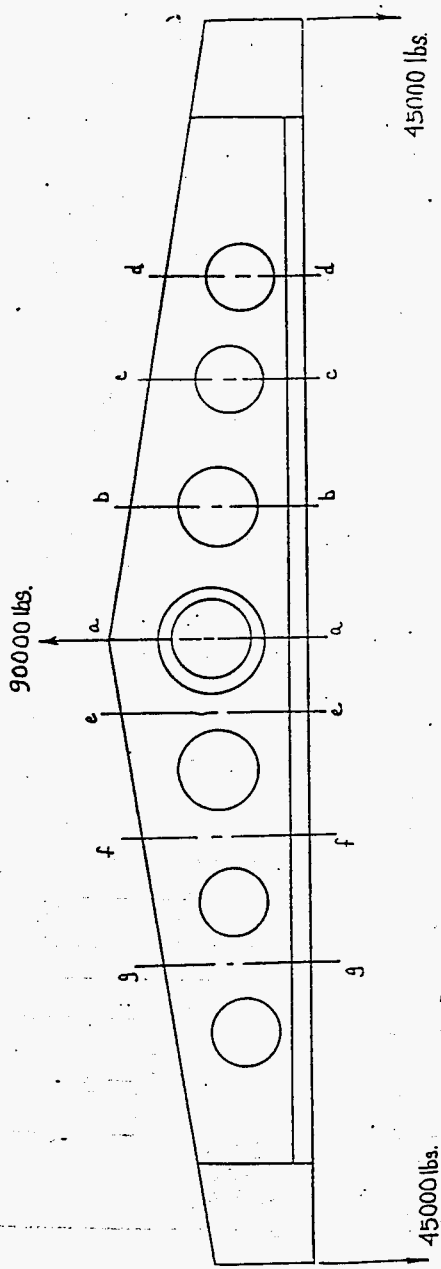


Figure 5

2595

Table 1

Section	Moment (k-in.)	Moment of Inertia (in^4)	c (in.)	Stress (psi)
a-a	1120	97	4.33	50000
b-b	885	70	4.08	51600
c-c	650	50	3.63	47200
d-d	410	30	3.30	45100
e-e	1000	89	4.10	46100
f-f	765	63	3.67	44600
g-g	530	43	3.24	39900

26795

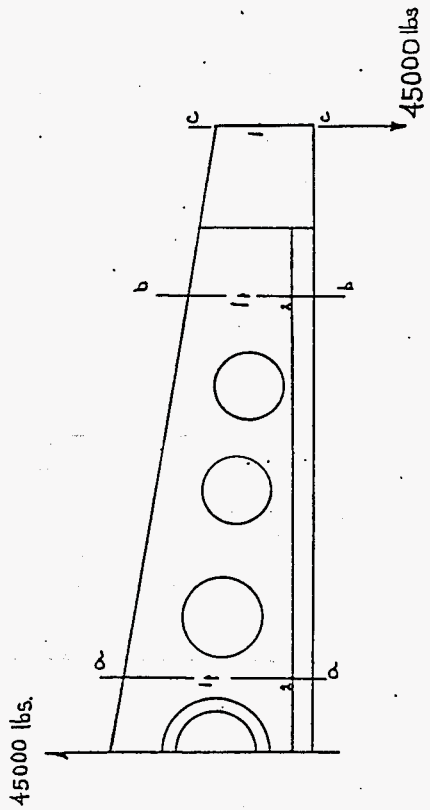


Figure 6

2/4/95

Table 2

Section		Moment of Inertia (in^4)	Q (in^3)	Shear Stress (psi)
a-a	1	89	16.81	4250
	2		9.32	2360
b-b	1	23	6.97	6820
	2		5.18	5070
c-c	1	19	6.77	4010

28/95

With respect to the fillet welds of 1/2 and 3/4 the AISC[2] manual was used. The 1/2" fillet weld is rated at an allowable of 7.42 k/in or for 49 inches on allowable load of 360k is possible. For the 3/4" fillet weld on allowable 11.14 k/in, or for 8 inches, 89000 lbs. These values are conservative for the given conditions.

Tear of Strongback Material

The lifting device has a 90000 lb load at the point of where the hook is applied. The tearout of the center portion of the strongback is reviewed. The effected area is 8 in^2 experiencing a shearing stress of 11300 psi. Again, this is less than the von Mises effective shearing stress of 52000 psi. Thus, the strongback will not tear out due to the hook.

AG:6323:ms/1040u

Copy to:
~~6323 G. C. Allen~~
6322 T. A. Duffey
6322 R. G. Eakes
6323 R. Cooke
6323 A. Gonzales
6320 File Ref. 84/T1431

2/7/95

Sandia National Laboratories

Albuquerque, New Mexico 87185

date September 20, 1984

to: H.R. Yoshimura, 6323

from: Alex Gonzales, 6323

subject: Re-analyses of BUSS Cask Lifting Fixture

Due to the previous analysis of the lifting fixture, reviewed in the memo to H.R. Yoshimura dated September 12, 1984, several design changes were made. In addition, reviewing design standards ANSI-N14.6[1] and NUREG-0612[2] led to a change in design criteria for the lifting fixture. According to ANSI-14.6, if the lifting device calls for the handling of a critical load, increased design factors will be used. A critical load is specified as any lifted load whose release could adversely affect any safety related system or could result in potential off site exposures outlined in the Code of Federal Regulations, Title 10-Part 100.[3] The perspective use of the lifting device is to lift the cask without the impact limiters in place. If the unprotected cask were to drop a severe accident could occur, thus necessitating the use of an increased design factor. For this particular case ANSI-14.6 states the lifting device must lift without yielding a load of six times the cask weight. The cask weight, fully loaded and without impact limiters, will be taken as 30000 lb.

Figure 1 shows the entire lifting device assembly. It is composed of a center strongback piece with a hook section bolted on either side. The entire apparatus is made out of ASTM A514 Alloy Steel with a yield strength of 90000 psi.

HOOK ANALYSIS

As the entire lifting device must lift 6W=180000 lb, each hook assembly must then take one half the load or 90000 lb. Referring to figure 2, five yielding possibilities are investigated:

a. The hook cross-section at point of maximum moment

b. In tension along the arm cross-section

c. Material shear through cross-section

d. Bolt shear through cross-section

e. Bolt pull out

References

1. Boresi, A. P., Sidebottom, O. M. Seely, F. B., Smith, J. D. Advanced Mechanics of Materials, pp. 327-341, 3rd Ed. Wiley and Son Inc., 1978.

2. AISC, Manual of Steel Construction, 8th Edition 1980

10/95

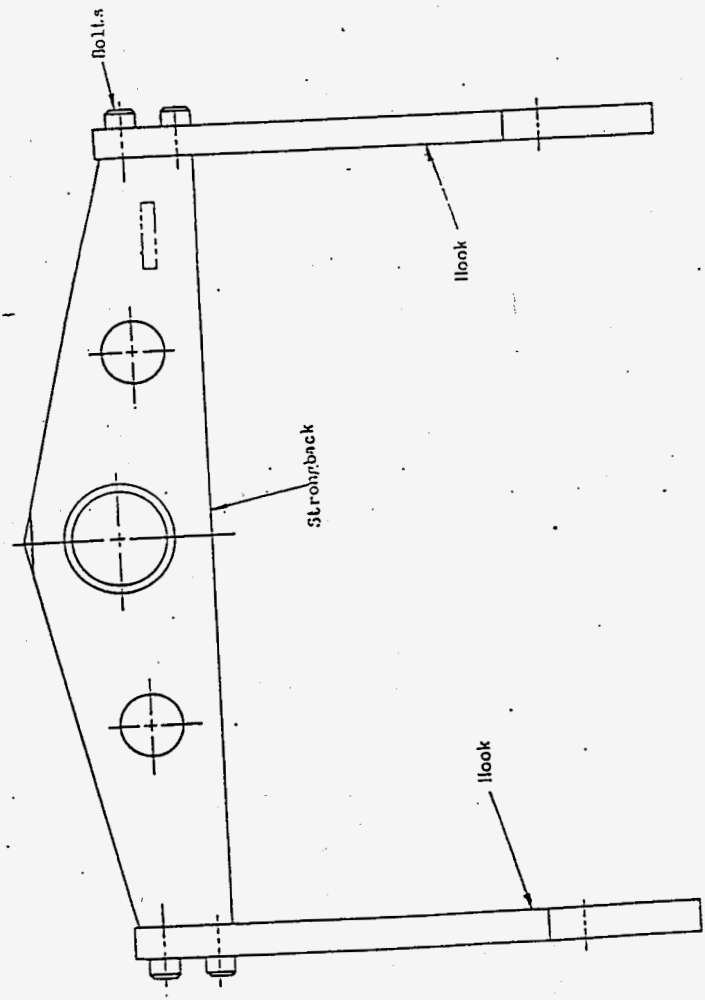


Figure 1

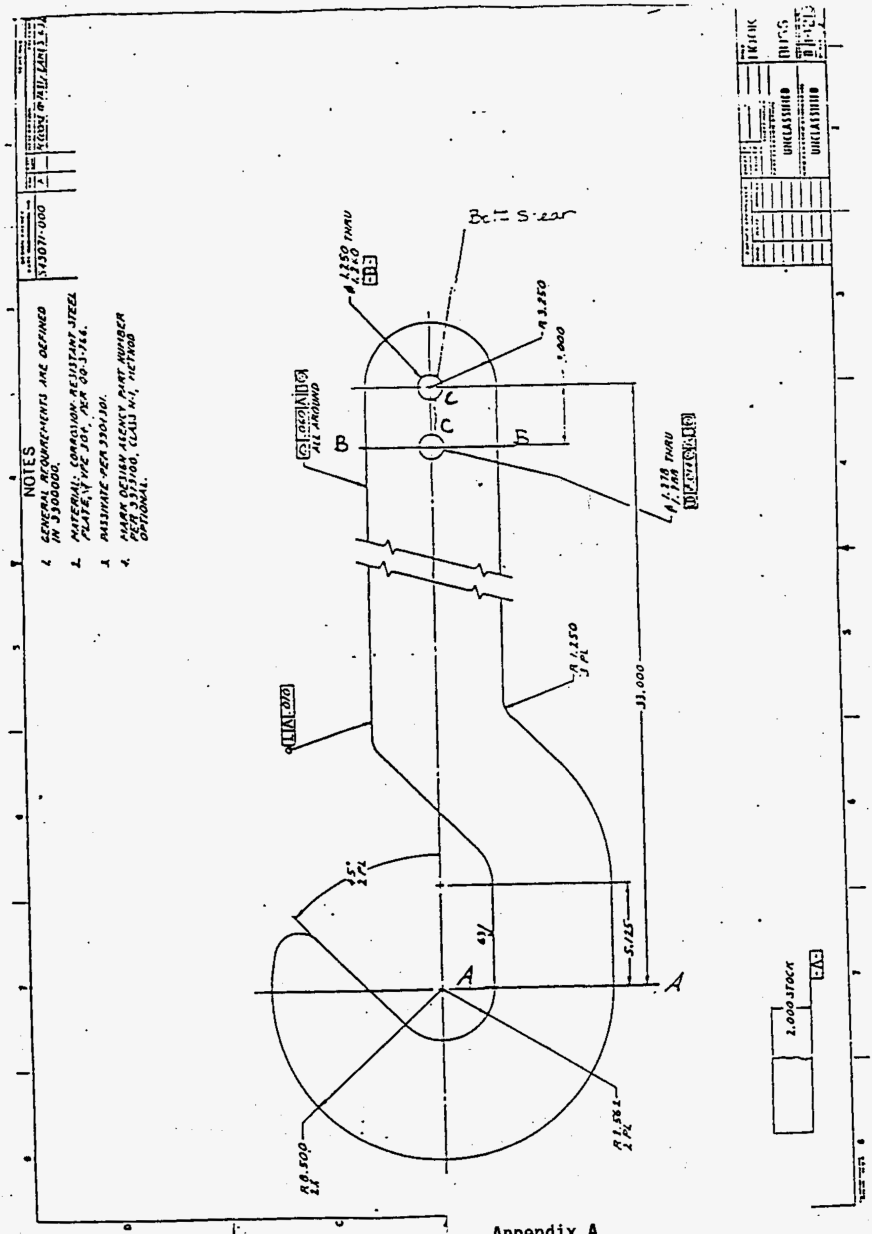

NOTES
33.000
5.125
R 1.250
3 PL
R 8.500
R 1.562
2 PL
ALL AROUND
2.000 STOCK
UNCLASSIFIED
UNCLASSIFIED

Figure 2

Each of these pos· bilities will be reviewed in t' following sections.

a. Hook cross-section

Section A-A in figure 2 is the critically stressed portion of the hook. This section is analyzed as a curved beam using advanced mechanics of materials[4] procedures.

For a symmetrical cross-section, it is assumed that radial and shearing stresses are negligible with respect to circumferential stresses. Thus, a one-dimensional state of stress exists. Using equation 8-2.11[4] :

$$\sigma = \frac{N}{A} \quad \frac{M_x(A - A_m r)}{Ar\,(RA_m - A)}$$

where:

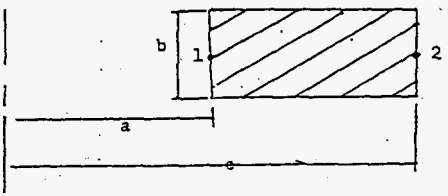
- σ = stress normal to the cross-section
- N = applied load to the hook
- A = cross-sectional area
- M = moment with respect to the neutral axis
- r = distance from beam's center of curvature to any point on the cross-section
- R = distance from beam's center of curvature to neutral axis (not the same as the centroidal axis)
- $A = \int \frac{dA}{r}$

A, A_m, and R are dependent upon the cross-section geometry. Referring to table 8-2.8[4] for expressions A_m and R with respect to a rectangular cross-section and solving for stress:

Area = 11.88 in^2

$A_m = b \ln \frac{c}{a} = 2.40$

$R = \frac{a + c}{2} = 5.53$



N = 90000 lb
M = PR = 498 k-in.
r = 2.562, 8.5

3 of 95

Tensile stress on the inside radius, point 1, is 71 0 psi and the compressive stress on the outer radius, point 2, is 23000 psi, both within the allowable yield stress of 90000 psi.

Using the straight beam formula as a check,

$$\sigma = \frac{P}{A} + \frac{Mc}{I}$$

c = 2.97 in.
I = 35 in.^{4}

Table 8-2-1[4] gives a comparison of stress results obtained for curved beams using the straight beam formula versus the elasticity solution. For a R/h ratio of approximately one (h=5.94 in.) gives a stress ratio of:

$$\frac{\sigma \text{ straight}}{\sigma \text{ elasticity}} = 0.653$$

Using this fudge factor with the straight beam calculation gives a tensile stress of 73000 psi. This correlates well with the curved beam analysis. It can be satisfied the 75 ksi value is legitimate. Thus, the hook will not yield in moment.

b. Tension along cross-section

In the hook assembly arm the point of minimum cross-section is along the bolt (section B-B, figure 2). The area is 10.5 in^2. With the load of 90000 lb the resulting stress is 8600 psi which is far less than the 90000 psi allowable yield stress. Hence, the arm cross-section will not yield in tension.

c. Material shear between the bolts

This area between the two bolts, section C-C in figure 2, is the critical section where the bolts could cause material tear out due to the applied load. The cross-sectional area between the two bolts is 3.5 in^2. Assuming a very conservative case of only the bottom bolt taking the total load of 90000 lb and also assuming only one shear plane, the expression:

$$\tau = \frac{4V}{3A}$$

gives a shear stress of 34300 psi. The allowable effective von Mises stress for pure shear is .577(S_Y) or .577(90000)=51900 psi which is above the calculated value. If a more practical assumption that both bolts carrying equal shear and two shear planes exists results in a shear stress of 8600 psi which is well below the allowable. Thus, the bolts will not cause yielding in the material.

359 95

d. Bolt shear

Two 1.250"-12o high strength bolts fasten the hook to the strongback. The bolt stress area is 1.07 in. The two bolts must carry 90000 lb in shear or 45000 lb each. Again, using the relationship

$$\tau = \frac{4V}{3A}$$

for shear stress gives 56000 psi. The yield strength of the bolt is 100000 lb, or for the stress area of 1.07 in^2, a yield stress of 93500 psi. This gives an effective von Mises shear stress of .577(93500)=54500 psi. Comparing this to the calculated value shows the bolts are overstressed about 3%. However, according to SNL Mechanical Parts Catalog, Volume 3, the allowable working load each bolt can take in shear is 91000 lb which is above what each experiences at 45000 lb. It is concluded the bolts will not yield in shear.

e. Bolt pull out

Due to the geometry of the lifting device, it is probable rotation about the center could occur. This would result in a moment generating from the bottom of the hook attempting to pull out the bolts. The shear area between the bolt and material threads resisting pull out is defined by:

$$A = \pi DL$$

where:

D = nominal diameter of the bolt (1.25 in.)
L = length of threaded section (1.81 in.)

With the allowable shear stress of the bolt at 54500 psi and a shear area of 7.1 $in.^2$ an allowable load of 290000 lb per bolt before pull out is calculated. Thus, with a combined load pull out capacity of 580000 lb and using a safety factor of two shows the bolts will not pull out, even if a full given cask load per hook of 90000 lb were applied.

STRONGBACK ANALYSIS

As figure 3 shows, the strongback piece is made up of a three inch wide steel plate with three holes cut out. The following analysis checks the integrity of the assembly to avoid yielding.

The strongback is supported in the center by a lifting device, and the applied load is initiated by the hooks on the ends. It is assumed the load on the hooks is completely axial and no moments are induced due to any rotation of the strongback. The maximum moment produced by the two 90000 lb loads occurs at the center, section A-A, however, a section 6 inches from the center, B-B, will also be checked.

At section A-A, the moment of inertia is 356 $in.^4$, the maximum stress occurs 6 inches from the neutral axis, a moment of 2240 k-in. produces a stress of 38000 psi. At section B-B, a moment of inertia of 293 $in.^4$ at 5.28 in. from the neutral axis with a moment of 1700 k-in. results in a stress of 31000 psi. Both of these values are below the allowable yield stress of 90000 psi. Thus, the strongback will not yield due to moment.

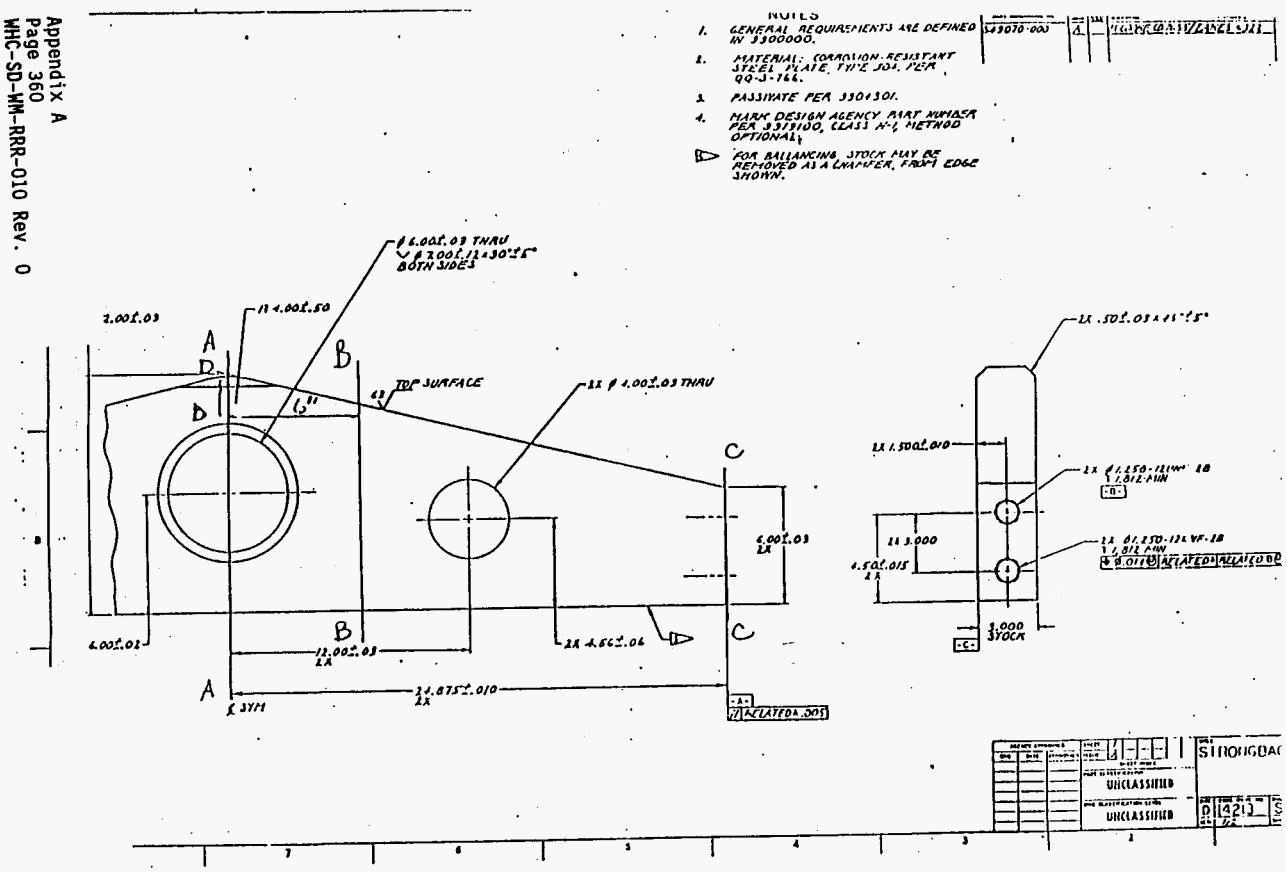

NOTES
1. GENERAL REQUIREMENTS ARE DEFINED IN 9300000.
2. MATERIAL: CORROSION-RESISTANT STEEL PLATE, TYPE 304, PER QQ-S-766.
3. PASSIVATE PER 9304501.
4. MARK DESIGN AGENCY PART NUMBER PER 9979100, CLASS A-1, METHOD OPTIONAL.
5. FOR BALANCING, STOCK MAY BE REMOVED AS A CHAMFER, FROM EDGE SHOWN.
TOP SURFACE
UNCLASSIFIED
UNCLASSIFIED

Figure 3

Strongback resist :e to shear

Referring to figure 3, the maximum shear occurs at section C-C.

Using the relation:

$$\tau = \frac{4V}{3A}$$

with:

V = 90000 lb
Q = 11.66 $in.^3$
I = 51 $in.^4$
t = 3 inches

gives a shear stress of 6860 psi which is well below the allowable von Mises shear stress of .577(90000)=51900 psi. Hence, the strongback will not yield in shear.

Tear out of strongback material

The strongback has a 180000 lb load at the center where a lifting hook is applied. The tear out of the center portion if the strongback, section D-D figure 3, is reviewed. The effected area is 8.5 $in.^2$ Conservatively assuming a single shear plane and using the relation:

$$\tau = \frac{4V}{3A}$$

gives a shear stress of 28300 psi which is within the effective von Mises allowable of 51900 psi. Thus, the center portion of the strongback will not tear out.

Copy to:
6323 G.C. Allen
6322 T.A. Duffey
6322 R.G. Eakes
6323 R. Cooke
6323 A. Gonzales
6320 File Ref. 84/T1431

38795

ITEMS/VERTICAL

DBID: 8E142

Sandia National Laboratories

PURCHASE REQUISITION

SF 6430-RD(1-92)

PURCHASING USE ONLY

Date (mo-dy-yr): 7-8-92
PR Number: AD-1560
Ch. Req No.: 00
Page: 1
Pages: 1

SUGGESTED SOURCE: RELIANCE METALS ATTN: GARY

Phone: 345-0959 FAX: 345-1187

SOURCE

Government Priority: ☐ DO-E2 ☐ DX-E2 ☒ NONE

Security Classification: Material U; Information U

☐ Weapon/Weapon-Related ☒ Non-Weapon Related

Ship To: Sandia National Laboratories (Include words: "FOR US/DOE")

Location	Commercial Carrier Address (Not Valid for US Mail)	Parcel Post/Mail Address
☐ Bldg. 957 ☐ Bldg.	1515 Eubank S.E. Albuquerque, NM 87123	P.O. Box 5000 Albuq., NM 87185-5000
☐ Bldg. 928 ☐ Bldg.	7011 East Avenue Livermore, CA 94551	P.O. Box 969 Liv., CA 94551-0969
☐ Bldg. ☐ STON	Tonopah Test Range Tonopah, NV 89049	P.O. Box 871 Tonopah, NV 89049
☐ SMERC (Warehse. 8) ☐ Bldg.	Mercury, NV 89023	P.O. Box 238 Mercury, NV 89023

☐ See Below ☐ No Shipment

Ship Via: ☐ Contractor Choice & Expense ☐ Sandia Pickup ☐ Prepay & add to invoice by: ☐ Collect by: ☐ Before shipping call

FOB: ☐ Origin ☐ Destination

Item	Quantity	Unit	Material or Service Description/Specification	Est. Unit Price $
1	2	EA	STEEL, ASTM-A-514, GRADE Q, 3 INCH × 13 INCH × 50 INCH	638.
2	4	EA	STEEL, ASTM-A-514, GRADE H, 2 INCH × 18 INCH × 66 INCH	527.
3	4	EA	CUTTING CHARGE FOR ITEM 2	50.
4	2	EA	MATERIAL CERTS FOR ITEMS 1+2.	NC
			—LAST—	

TOTAL

Date Del/Perf. Req'd ☐ CRITICAL

SPECIAL INFO: ☐ Precious Materials ☐ Continuing Requirement ☒ Sole Source ☐ Sole Make ☐ SNL Prop./Matl. Furnished ☐ SNL Prop. Acquis. Authorized

Accounting Classification

Item	Quantity	Cost Seq.	Case/CCO	Tran Type	Organization	ESC	$ Amount
ALL	ALL		8965.000		6642		3,600

Brief Description: STEEL PLATE

Total Est. $ (this action): 3,600

Requester: D. BRONOWSKI — Requester SS No. 349-58-7197 — Org. 6643 — Phone 5-9013

Deliver to: D. BRONOWSKI — SS No. 349-58-7197 — Bldg. 883 — Room G — Org. 6643 — Phone 5-9013

Preliminary or Requesting Supervisor Approval

Special Approvals: QA

Commitment Approval Signature/Org./SS No.: [signature] / 6642 / 566-60-1261

FORECASTS (Straight Line) ☐ Yes — Fcst Date (mo-yr) — Fcst Amt — Fcst Date (mo-yr) — Fcst Amt.

Quotations Requested — Quotations Received

☐ No Acceptable Equipment Found ☐ Notification Copies Sent

Sandia Contracting Representative — Place Date — Org. — Phone

Price Justification: ☐ AOA/GSA ☐ Published ☐ Competition ☐ Comparison ☐ Judgment

Reqs. Purged — Credit Thru — Est. Comp. Date — SCR — Supplier — Acctg. Certification — Log Out

Appendix B
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PLEASE TYPE OR PRINT FIRMLY

DATE:

Control Number: F397400

To:	From:	No.
2482-2	D. BRONOWSKI	
	Del. To: 383 LAB A	8965.000

Request Title (12 Characters)	Security Classification of:	Estimate	Date Required	Hours	Total Matl, Labor and Purchases
LIFTING HOOK	Material		Eng. Org. / /		$5K
Consultant: DAVE BRONOWSKI	Phone: L-90	Prints	Shop Org. / /		$
	Product				
	Visual				

Preliminary/Approvals						Final Approval	Lead Shop Org.	
Org.						Expenditure: D. Bron	Date Closed / /	Section
Approval						(Full Signature)	P.O. No.	

Item	Quantity	Description of Work Requested
		(Please list material & drawings to be furnished with any special instructions)
1	4 EA	MODIFY / FINISH FABRICATION OF LIFTING HOOKS PER DRAWING SA9070/B. DRB REQUESTOR WILL SUPPLY TORCH CUT MAT'L.
		FINAL FAB OF HOOKS FOR FIXTURES -102 & -103

TO BE COMPLETED BY REQUESTER - EXCEPT SHADED AREAS

Specify: WR ( ); Non-WR but Weapon Related ( ); Non-Weapon Related (X)

Quality Level: Critical ( ); Major (X); Minor ( )

Quality Requirements: Standard Manufacturing Procedure/Workmanship (X)

Special Quality Information/Requirements ( ) Explain

Oper. No.	Work Description	Req. Date	Responsible Org.	Date Out Org.	$ Job Costs Operation	Cum. Total

Control Number

IED WHITE – OFFICE YELLOW – CLOSING
PINK – REQUESTER GOLDENROD – LEAD SHOP BUFF – PROCESS

COPY

40/95

DRID: BE143

SUPP
LL

Weight:
Case: 8965000
Shipclass: 331
Reimbursable: Y

[redacted]

Supplier: [redacted]
ALBUQUERQUE

Notes: 1 - NONE

Line Item	Description	Qtd Rcvd	Qtd Ord	Net Qty Rcvd	Units	In Cd	Pr Cd
0001	STEEL GRADE G 3 INCH X 18 INCH	2.00	2	2.00	EA	X	V
	Unit Price:			636.00			
0002	STEEL, GRADE H2 INCH X 18 INCH	2.00	2	2.00	EA	X	V
	Unit Price:			527.00			
0003	CUTTING CHARGE FOR ITEM 2	4.00	4	4.00	EA	X	V
	Unit Price:			51.77			
0004	MATERIAL CERTS FR ITEMS 1 AND 2	2.00	2	2.00	EA	X	V
	Unit Price:			10.00			

ATTENTION RECIPIENT: Please sign below to acknowledge material receipt.

[redacted] 3/9-58-7197 8-6-92

SIGNATURE SS NUMBER DATE DELIVERED

To return this material to the supplier (except for service or maintenance), complete SF 6891-S (3-91), "Deviation Form" and SF 6951-AE (7-88), "Shipper". To report obvious or concealed damage, immediately contact the investigator in Ors 3912.

COPY

Fold to dotted line and staple.

RETURN TO: ORS 3912
ATTENTION: RECORDS CLERKS

4/4/95

SA 7201-4110 881

Process & Fab Request F397400

DRID: BE155(1)

DEVELOPMENT SHOP MEASUREMENTS REPORT

Date: 9-10-92 | Sheet 1 of 2

Proj. No. | Control No. F-015-747 | Lead Org. | Responsible Section 2483-1 | Process Check

P.O. — | Item No. | Rec. No. | Supplier BRONOWSKI ORG 6643 | City SNCA

Nomenclature LIFTING HOOK | Dwg. No. 549071 | Issue B | Lot Quantity 4 | No. PCS. Measured 4 | No. of Measurements Completed PARTIAL

Description	No. of Places	Dwg. Zn. Loc.	Dwg. Dim.	Tol.	#1	#2	#3	#4
FINISH	1		63 ✓		9 - 36 ✓	12 ✓ - 39 ✓	17 ✓ - 37 ✓	19 ✓ - 35 ✓
RADIUS	2		2.562	± .060	2.564	2.562	2.561	2.560
LINEAR	1		53.000	± .060	52.993	52.998	53.000	53.000
Ø	1		1.250-1.260		1.253	1.251	1.253	1.253

REVIEWED & APPROVED

Units to Specs. | Rework in Shop | Reject to Mfr. | Accepted | Units Not to Specs

Approval: Name [signature] Org. 6643 9-11-93

Measurements by: Name [signature] 2483-1

Delivered to: COPY

Letter Requested: Rejection | Protest | None

Appendix A
Page 365
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S4-47

DBID: 8E1.5(2)

SA 7201 AE110 851

DEVELOPMENT SHOP MEASUREMENTS REPORT

DATE 9-10-92 | SHEET 2 of 2

Proj. No. | Control No. F015747 | Lead Org. | Responsible Section 2483-1 | Process Check

P.O. — | Item No. | Rec. No. | Supplier BRONOWSKI ORG 6643 | City SNCA

Nomenclature LIFTING HOOK | Dwg. No. 549071 | Issue | Lot Quantity 4 | No. Pcs. Measured 4 | No of Measurements Completed PARTING

No.	REQUIRED FEATURE SIZE	FEATURE TOL.	ACTUAL FEATURE SIZE	DATUM AND DATUM ORIENT	PCSN. TOL.	TOL. AT MMC	X T.P. REQ.	X ACTUAL	X DEV.	Y T.P. REQ.	Y ACTUAL	Y DEV.	ACT POSN DIAMETER	INWD IN TOL
	#1													
1	1.278-1.288		1.280 / 1.282	A B Ⓜ		.014	3.000	3.0018	.0018	.000	.0025	.0025	.0062	
	#2													
1	1.278-1.288		1.281	A B Ⓜ		.014	3.000	3.0010	.0010	.000	.0021	.0021	.0046	
	#3													
1	1.278-1.288		1.283	A B Ⓜ		.014	3.000	3.000	.000	.000	.0050	.0050	.0100	
	#4													
	1.278-1.288		1.281	A B Ⓜ		.014	3.000	3.000	.000	.000	.0012	.0012	.0024	

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Reviewed & Approved

Rework in Shop
Reject to Mfr.
Accepted

APPROVAL
Name
6643 9-11-92
Org.

MEASUREMENTS BY
Name
Org. 2483-1

DELIVERED TO

LETTER REQUESTED
REJECTION
Protest
None

COPY

D8ID: 8E145

	152171
MILL ORDER NO.	DATE DEC 31, 1991
PM-16313-00	12/03/91
CUSTOMER ORDER NO.	
0045	
JOB/REQ. NO.	
SHIPPING NO.	DATE
P152171	12/31/91
CARRIER	
RT/SP	
CAR/TRUCK NO.	
SP337748	

SOLD TO:
29300
HIGH STRENGTH STEEL WEST
525 S. 83RD
PHOENIX, AZ 85043

SHIP TO:
HIGH STRENGTH STEEL WEST
525 S. 83RD
PHOENIX, AZ 85043
ATTN: BILL BRYLOW

2

4492

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS

OSM ALLOY STRUCTURAL QUALITY PLATE
ASTM A514-90 GR H

PHYSICAL PROPERTIES

DESCRIPTION	HEAT NO.	SLAB	YIELD PSI x 100	TENSILE PSI x 100	% ELONG 8"	% ELONG 2"	% RA	HARDNESS BRINELL	TEMP TEST
2 X 96 X 240 AUSTENITIZE TEMP TIME 1660F 120 WQ TEMPER TEMP TIME 1226F 120 AC 1K2643	335990	A3	1060	1170		19	54	262	

HOOK MATERIAL FOR
UNITS -102 AND -103
(849071)

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cb	Al	Cr	Mo	Ti	B	N	[illegible]	[illegible]	[illegible]
335990	.19	1.17	.008	.004	.28	.25	.37	.04		.038	.49	.24	.041	.0022				

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We certify the above results to be correct as contained in the records of OREGON STEEL MILLS By Angie McCasland TEST REPORT CLERK

COPY

DBID: 8E134(1) of 2

..GRP 1 MATERIAL [illegible] ** NON STOCK **

GE : OF :
NUMBER :175549
DER DATE [illegible]
E DATE 00/00/0000
STRUCT

CUSTOMER BRONOWSKI, DAVID R.
REF. DATA
PHONE 505/845-[illegible]

STOP 8900
SITE S-
BLDG 983
ROOM G

NE	QUANTITY	UOM	CAT	MFR	PART NUMBER	UNIT PRICE	EXTD PRICE
1	16	EA	FFC	FFC	7090MS90727-276 HEX CAP SCREW	9.00	144.00

LAST ITEM

NONSTOCK ITEM WITH PRICE NOT ON FILE.
CONTRACTOR: FILL IN PRICE AND EXTENSION.

QUESTOR MUST COUNT AND INSPECT ITEMS - NOTIFY CONTACT (BELOW) OF DISCREPANCIES

NTACT: DEE SILVER
ONE: 884-1808
NTRACT NUM: 66-4905
RNHILL BOLT CO INC
2500 PRINCETON DR NE 505/884-1808
ALBUQUERQUE, NM 87197

SPECIAL APPROVAL:

CASE/CCO: 8975200
CHARGED TO ORG: 06643

top copy-receiving middle copy-contractor bottom copy-requestor

GP 1 STP 8900
SITE SA
BLDG 983
ROOM G
NAME BRONOWSKI, DAVID R.
ORG 06643 CAT FFC MR 1175549
REF:

GP 1 STP 8900
SITE SA
BLDG 983
ROOM G
NAME BRONOWSKI, DAVID R.
ORG 06643 CAT FFC MR 1175549
REF:

COPY 45/95

BID: 8E134(2) of 2

.GPP MATERIAL REQUISITION ** NON STOCK **

1 OF 1 | CUSTOMER BRONOWSKI,DAVID R. | STOP S900
JMBER 1175548 | REF. DATA | SITE S4
ER DATE 03/26/1993 | PHONE 505/845-9011 | BLDG S83
DATE 00/00/0000 | | ROOM G
TRUCT

E	QUANTITY	UOM	CAT	MFR PART NUMBER	UNIT PRICE	EXTD PRICE
	1	EA	FFC	FFC 7088MS90727-276+Plating	50.00	50.00

PHSY. AND CHEMICAL CERTIFICATION

LAST ITEM

NONSTOCK ITEM WITH PRICE NOT ON FILE.
CONTRACTOR: FILL IN PRICE AND EXTENSION.

CERTIFICATE OF CONFORMANCE
We certify that the materials on this order have been manufactured in accordance with all applicable government specifications and conform to the purchase order requirements.

Dee Silver

QUESTOR MUST COUNT AND INSPECT ITEMS - NOTIFY CONTACT (BELOW) OF DISCREPANCIES

NTACT: DEE SILVER
ONE: 884-1808
NTRACT NUM: 66-4905
RNHILL BOLT CO INC
2500 PRINCETON DR NE 505/884-1808
ALBUQUERQUE, NM 87197

SPECIAL APPROVAL:

CASE/CCO: 8975200
CHARGED TO ORG: 06643

top copy-receiving middle copy-contractor bottom copy-requestor

P1 STP8900
ITE SA
LDG 883
OOM G
AME BRONOWSKI,DAVID R.
RG 06643 CAT FFC MR 1175548
EF:

GP1 STP8900
SITE SA
BLDG 883
ROOM G
NAME BRONOWSKI,DAVID R.
ORG 06643 CAT FFC MR 1175548
REF:

Copy 4-6-95

DBID: BE135(1)-A2

CERTIFIED MATERIAL TEST REPORT

Lake Erie Screw Corporation
13001 Athens Avenue
Cleveland, Ohio 44107
216-521-1800

DATE: 8/24/88

CUSTOMER: Darling Bolt

DATE SHIPPED: 8/24/88

SPECIFICATION: Grade 8

STEEL TYPE: 4140 Mod

STEEL HEAT NO: B65187

ORDER NO: D41458

CUST. PART NO. 1AC20F060PDB

HEADMARK IDENTIFICATION "DB"

DESCRIPTION: 1 1/4-12 x 3 3/4
Hex Head Cap

LOT NO: 081988

QUANTITY: 954 pieces

STEEL CHEMISTRY

C	Mn	P	S	Si	Ni	Cr	Mo	B	Cu
.40	.87	.014	.003	.23	.03	.30	.20	.0019	.02

MECHANICAL PROPERTIES

Wedge Tensile Strength		Proof Load		Surface Hardness		Core Hardness	
lbs.	psi	lbs.	elong.	BHN	Rc	BHN	Rc
	168,700				C37		C36

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We hereby certify that the above is correct and that the parts furnished have been manufactured and inspected in accordance with applicable quality requirements. We also certify that all parts substantially conform to the drawing, specifications and conditions set forth on the purchase order and/or Lake Erie quotation. These parts have been manufactured to the requirements of the Lake Erie Screw Corporation Statistical Process Control Program and are covered by the Lake Erie Screw Corporation warranty as stated on our quotation. SPC data is on file at our company.

SOLD: Barnhill Bolt DATE 3/26/93

P.O. D326-6 QTY. 96 DB NO. 41950

LAKE ERIE SCREW CORPORATION

Edward P. Kowel
Quality Assurance Manager

Certificate of Inspection
Provided By
BARNHILL BOLT CO., INC.

TO: [illegible] PRODUCT MANUFACTUFED IN THE UNITED STATES OF AMERICA

ORDER NO. [illegible] # 117545

Copy 47/95

DBID: 8E135(2) of 2

KAHR CORPORATION

1425 CANDELARIA-NE BOX 3116
ALBUQUERQUE, N.M. 87190

CERTIFICATE OF COMPLIANCE

We certify that all material shipped hereunder has been manufactured or processed in accordance with applicable instructions and specifications called out on customer's purchase order as issued or currently amended. We further certify that all processes requiring government process approval as used, have been approved currently and certificates are on file subject to examination, and that necessary chemical, physical, and/or electrical data pertaining to this order is available for your inspection.

ISSUED TO:

BARNHILL BOLT CO., INC.
P.O. BOX 6292
ALBUQUERQUE, NM 87197-6292

DATE: 04/02/93

PURCHASE ORDER NO: 773

WORK ORDER NO: 3-384

INVOICE NO:

QUANTITY	PART NO.	DESCRIPTION -- PROCESS
16 EA		1 1/4-12 x 3 3/4 GR 8 HEX CAP SCREW ZINC PLATED, TYPE II AND BAKED

AUTHORIZED SIGNATURE:

Certificate of Inspection
Provided By
BARNHILL BOLT CO., INC.
TO:
ORDER NO.

COPY

4/8/95

MATERIAL REQUISITION ** NON STOCK **

AGE 1 OF 1 CUSTOMER BRONOWSKI,DAVID R. STOP 8900
R NUMBER 1180648 REF. DATE SITE SA
ORDER DATE 04/07/1993 PHONE 505-845-9013 BLDG 883
DUE DATE 00/00/0000 ROOM G
INSTRUCT COMM.EQUIVILANT OK COC REQUIRE

LINE	QUANTITY	UOM	CAT	MFR	PART NUMBER	UNIT PRICE	EXTD PRICE
01	6	EA	FFC	FFC	7080-MS90728-230	4.55	27.30
					CAP SCREW,1-8UNCX2.0		

LAST ITEM

NONSTOCK ITEM WITH PRICE NOT ON FILE.
CONTRACTOR: FILL IN PRICE AND EXTENSION.

Name - Duane R Steinberg
Sig - DUANE R STEINBERG
SS# - 501-26-0235
E# - 10570
Date - 4-20-93

CERTIFICATE OF CONFORMANCE
We certify that the materials on this order have been manufactured in accordance with all applicable government specifications and conform to the purchase order requirements.

Dee Silver

REQUESTOR MUST COUNT AND INSPECT ITEMS - NOTIFY CONTACT (BELOW) OF DISCREPANCIES

CONTACT: DEE SILVER
PHONE: 884-1808
CONTRACT NUM: 66-4905
BARNHILL BOLT CO INC
2500 PRINCETON DR NE 505/884-1808
ALBUQUERQUE, NM 87197

SPECIAL APPROVAL:

CASE/CCO: 8975200
CHARGED TO ORG: 06643

top copy-receiving middle copy-contractor bottom copy-requestor

GP 1 STP 8900
SITE SA
BLDG 883
ROOM G
NAME BRONOWSKI,DAVID R.
ORG 06643 CAT FFC MR 1180648
REF:

GP 1 STP 8900
SITE SA
BLDG 883
ROOM G
NAME BRONOWSKI,DAVID R.
ORG 06643 CAT FFC MR 1180648
REF:

49/95

LOAD TEST DATA SHEET

Test Date 8-25-92 Fixture Serial No. S49072-101

Facility Used: LOAD TEST FRAME, BLDG 887, SNLA

Load Cell Mfg MEASUREMENT SYSTEMS INT'L Model MSI 6062C

Serial No. 19123/24177 Cal Exp Date 9-29-91 *

Applied Load: 52,400 lb

% of Max Working Load 150%

Start Time: 10:45

Stop Time: 10:55

Test Duration: 10 MINUTES

Final Disposition:

Acceptable ✓ Unacceptable ____

* LOAD CELL CAL DATE IS EXPIRED. OBTAIN & FILE A COPY OF RE-CAL WHEN PERFORMED.
10-1-92 DOCUMENTATION OF RECALIBRATION FOR THE LOAD CELL RECEIVED AND REVIEWED. CELL ACCURACY WITHIN 0.5% IN RANGE USED FOR TEST. TEST ACCEPTED BY D.R. [signature] 6663

Comments or operational problems: INITIAL LOAD = 55000 lbs; LOAD AFTER 10 MINUTES = 52,400 lbs. LOAD DECREASE IS DUE TO HYDRAULIC SYSTEM LEAKDOWN. TEST PERFORMED PER SECTION 8 OF THE BUSS MAINTENANCE MANUAL, USING TEST FIXTURE R35028-100.

Conducted by: [signature] 7813-2 8-25-92
Dept Date

Witnessed by: [signature] 7813-2 8-25-92
Dept Date

LOAD TEST DATA SHEET

Test Date 8-25-92 Fixture Serial No. SA9072-102

Facility Used: LOAD TEST FRAME BLDG 887, SNLA

Load Cell Mfg MEASUREMENT SYSTEMS INTL Model: MSI 606ZC

Serial No. 9123/24177 Cal Exp Date 9-29-91 *

Applied Load: 52,000 lb

% of Max Working Load 150%

Start Time: 09:22

Stop Time: 09:32

Test Duration: 10 MINUTES

Final Disposition:

Acceptable ✓ Unacceptable ____

* LOAD CELL CAL DATE EXPIRED. OBTAIN & FILE A COPY OF RE-CAL WHEN PERFORMED. 10-1-92 DOCUMENTATION OF RECALIBRATION FOR THE LOAD CELL RECEIVED AND REVIEWED CELL ACCURACY WITHIN 0.5% IN RANGE USED FOR TEST. TEST ACCEPTED BY DLB 6643 DLB

Comments or operational problems: INITIAL LOAD = 55,000 LBS; LOAD AFTER 10 MINUTES = 52,000. LOAD DECREASE WAS DUE TO HYDRAULIC SYSTEM LEAKDOWN. TEST PERFORMED PER SECTION 8 OF THE BUSS MAINTENANCE MANUAL, USING TEST FIXTURE 235028-102.

Conducted by: [signature] 7813 Dept 8-25-92 Date

Witnessed by: [signature] 7813 Dept 8-25-92 Date

Sandia National Laboratories

Standards Laboratory Report

date: Sept 30, 1992

to: L. M. Garcia, 7212-3 Calibration Expiration Date Sept 30, 1993

from: S. L. Toledo, 2761-3

subject: Calibration of Measurement System Scale

As requested a 70,000 lb capacity Measurement System Scale S/N 19123/24177 was calibrated on-site at a location east of Bldg. 887. A Sandia designed load cell, S/N 80-4, whose calibration expires 10-30-92, and a Measurement Group Strain Indicator, S/N 70245, calibration expires 10-1-92 were used as a standard for the calibration. The calibrated scale is expected to be accurate within three percent over the calibration period unless the scale is damaged or modified. A blue calibration sticker has been issued for this Measurement System Scale.

The tabulation below shows the readings from the Strain Indicator and the average of three readings from the Measurement System Scale.

Strain Indicator Readings lbs.	Measured Applied Force lbs.
0	180
5000	5007
10000	9893
15000	14893
20000	19960
25000	25006
30000	29927
35000	34880
40000	39973
45000	44833
50000	49753
55000	54926
60000	59453

Copy to:

2761-

Test :

52/95

DBID: BE117(4) of 5

Sandia National Laboratories

Albuquerque, New Mexico 87185

Standards Laboratory Report

date: April 23, 1991

to: L. M. Garcia, 7813-2

S L Toledo

from: S. L. Toledo, 7542

subject: Calibration of Measurement System Scale

A 70,000 lb. capacity Measurement System Scale, S/N 19123/24177, was calibrated on-site at a location east of Bldg. 887. A Sandia designed load cell, S/N 80-4, whose calibration expires 9/29/91, and a Measurements Group Strain Indicator, S/N 70245, whose calibration expires 11/2/91, were used a standard for the calibration. The attached table shows the results for the three calibration runs. There was some difficulty encountered in applying the desired load due to the hoist mechanism and stretch in the nylon straps used in the load path. The average of the three errors for each load step shows a maximum error of 1.2% at approximately 30,000 lbs. and the minimum error of 0.2% at approximately 70,000 lbs.

The calibrated scale is expected to be accurate within three percent over the calibration period unless the scale is damaged or modified. A blue calibration sticker has been issued for this scale.

Copy to:

7542 R. A. May/Calibration File

53/95

TEST #1

LOAD CELL	SCALE	% ERROR
C	C	C
11330	11500	1.5
20400	20700	1.47
28720	29000	.974
37530	37720	.506
49520	50000	.867
59880	60000	.200
71180	70690	.309

TEST #2

LOAD CELL	SCALE	% ERROR
C	C	C
12320	12400	.649
20810	21000	.913
30610	31000	1.274
39710	40000	.730
49740	50000	.533
60730	61000	.445
70710	70700	-.014

TEST #3

LOAD CELL	SCALE	% ERROR
C	C	C
11900	12000	.840
22630	22800	.751
29880	30280	1.338
40620	41000	.935
49680	50000	.644
59550	60000	.756
69760	70,000	.344

Average % ERROR

C
.996
1.045
1.195
.724
.681
.467
.213

DBID: [illegible] 11/7(5) of 5

54495

DBID: 8E116

Rocky Mountain Testing

CUSTOMER	PHONE NO.	P.O. NO.	RMT NO.	QUANTITY
TAB MANUFACTURING INC	344-5812	TD1325	9558	1

ADDRESS	SPECIFICATION	NOMENCLATURE
6440 EDITH BLVD NE ALBUQUERQUE NM 87107	SNL 9912119 Class I	LIFTER, BUSS CASK

METHOD	DRAWING NO.	SERIAL NO.
VISUAL DYE PENETRANT	S49072	N/A

CRITERIA:	TOTAL PARTS	TOTAL ACCEPT	TOTAL REJECT	REMARKS:
Class I PENETRANT				
BASKET NO.				
1	1	1	0	
TOTAL PROCESSED	1	1	0	DATE 8/19/92
NO. OF PARTS ACCEPTED				INSPECTOR Len Leonard
NO. OF PARTS REJECTED				REPRESENTATIVE Douglas Sinclair

AWS QC1 LEN LEONARD 80114531 CWI

5/4/95

TAB MANUFACTURING COMPANY

GENERAL INSPECTION REPORT

W.O. NO. 9207-103 CUSTOMER Sandia DATE DUE 8-7-92 PAGE 1 OF 1

NOMENCLATURE [illegible] P.O. NO. TD13225 B/P OR PART NO. 549072

B/P CALLOUT	ACTUAL	ACC.	REJ.	B/P CALLOUT	ACTUAL	ACC.	REJ.
30.00 ±.06	30.09	✓					
27.00 ±.06	27.05	✓					
5.00 ±.03	4.970	✓					
4.25 ±.06	4.290	✓					
3.00 ±.03	3.00	✓					
1.5 ±.03	1.510	✓					
1.01 ±.03	1.02	✓					
9.75 ±.06	9.720	✓					
.500 ±.02	.500	✓					
4.00 ±.03	4.002	✓					
15.00 ±.25	15.120	✓					

DATE INSPECTED 8-19 By [illegible]

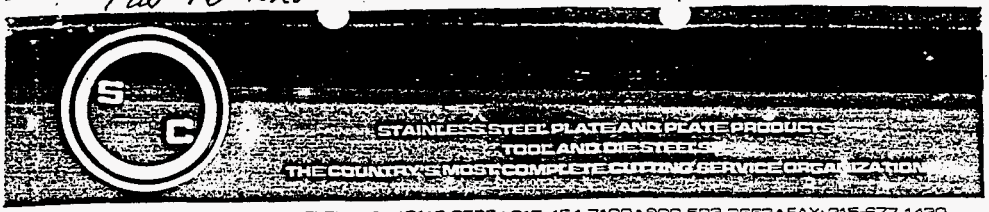
Appendix A
Page 379
WHC-SD-WM-RRR-010 Rev. 0

5695

DBID: BE115

Tab TO-1325

SSC ORDER NO 76821



ONE SANDMEYER LANE • PHILADELPHIA, PA 19116-3598 • 215-464-7100 • 800-523-3663 • FAX: 215-677-1430

BILL TO

TAB MANUFACTURING INC.
6440 EDITH BOULEVARD
ALBURQUERQUE, NM 87107

CERTIFICATE OF TEST

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND MECHANICAL TEST RESULTS APPEARING IN THIS CERTIFICATE ARE CORRECT AND TRUE AS CONTAINED IN THE RECORDS OF THE COMPANY

SANDMEYER STEEL COMPANY

E. GARDOSH - MANAGER, QUALITY ASSURANCE
ALITY CONTROL DEPARTMENT

CUSTOMER ORDER NO. 9207-103

DATE: 08/03/92

GRADE: 304	SPECIFICATION: QQ-S-766C AMEND5	HEAT NO.: 211028

PIECES	DESCRIPTION
1	1-3/4" THK PER DRAWING S49072 IT 1 TESTED

Appendix A
Page 380
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HEAT NO.	C	Mn	P	S	Si	Ni	Cr	
211028	0.061	1.800	0.028	0.007	0.400	8.360	18.400	

HEAT NO.	Yield *	Tensile *	Elong	Red	Hardness	Inter Gran
211028	38,100	86,500	60% IN 2"	70%	RB 81	QQ-S-766

* LBS/IN2

MATERIAL AND

IES F MINIMUM
ID BY AIR

RECORDS OF AL

EEL COMPANY

57795

PURCHASING USE ONLY SF 6430-RD(6-91) PURCHASE REQUISITION

Date (mo - da - yr)	PR Number	Ch Req No	Ch No	Page	Pages
7-8-92	TD-1325	00		1	1

SUGGESTED SOURCE — Contact — ZIP — Phone: — FAX:

SOURCE: TAB

BUYER: Robert H Berg 844-6834

TECH. FAB COORDINATOR: Bruce Page 844-8577

Government Priority: ☐ DO-E2 ☐ DX-E2 ☒ NONE

Security Classification: Material UN; Information UN

☐ Weapon/Weapon Related ☒ Non-Weapon Related

SHIP TO: Sandia National Laboratories (Include words: "FOR US/DOE")

Location	Commercial Carrier Address (Not Valid for US Mail)	Parcel Post/Mail Address
☒ Bldg. 957 ☐ Bldg.	1515 Eubank S.E. Albuquerque, NM 87123	P. O. Box 5800 Albuq., NM 87185-5800
☐ Bldg. 928 ☐ Bldg.	7011 East Avenue Livermore, CA 94551	P. O. Box 969 Liv., CA 94551-0969
☐ Bldg. ☐ STON	Tonopah Test Range Tonopah, NV 89049	P. O. Box 871 Tonopah, NV 89049
☐ SMERC (Warehse. 8) ☐ Bldg.	Mercury, NV 89023	P. O. Box 238 Mercury, NV 89023

☐ See Below ☐ No Shipment

SHIP VIA: ☒ Contractor Choice & Expense ☐ Sandia Pickup ☐ Prepay & add to invoice by: ☐ Collect by ☐ Before shipping call

FOB: ☐ Origin ☒ Destination; MO No.; Terms: 1% 15 N-30

CONFIRMING ORDER: DATE SENT ☐ FAX ☐ MAIL ☒ Do Not Duplicate

Confirming oral agreement dated 7/16/92 between B. Berg / Stacy. This procurement includes the following terms & conditions in your possession. I. Terms & conditions for Purchase Orders Section II, SF6432-PO (8-91) II. The following Articles for Process and Fabrication Laboratory Procurement, SA6431-E (5-91) Apply: I) General Product Requirements; 2) Inspection Reports; 3,4) Welding Requirements [✓] Class I [✓] Class II [ ] None; 5) Delegation of Authority [ ] No [✓] Yes; 6) Sandia Furnished Material-515-KSM (6-91) [ ] No [✓] Yes Shipper No. ____ Mat'l Value $ ____ (Sketches/Drawings Dated ____ [ ] In Contractor's possession)

ARTICLE I STATEMENT OF WORK AND PRICE. Furnish the Following:

Item	Quantity	Unit	Material or Service Description/Specification	Est. Unit Price	TC/FO	Insp	Prop	Unit PR/Tax	Extension
1	1	ea	Lifter, Buss Cask per S 49072 A			X	V		2,300.00

TOTAL 2,300.00

Date Del/Perf. Req'd.: 8-7-92 ☐ CRITICAL

Accounting Classification

Item	Quantity	Cost Seq	Case/CCO	Tran Type	Organization	ESC	$ Amount
All	All		F991325	346	02486	4000	00002300

Item	Quantity
1	All

Brief Description: 8965.000 — Total Est. $ (this action): 4000

SPECIAL INFO.: ☐ Precious Materials ☐ Continuing Program ☐ Sole Source ☐ Sole Make ☐ SNL Prop Matl. Furnished ☐ SNL Prop Acquis. Auth'ed

Requester: David Bronowski — Requester SS No: 349-58-7197 — Org. 6643 — Phone 5-9013

Deliver to: David Bronowski — Deliver to SS No: 349-58-7197 — Org. 6643 — Bldg. 883 — Room 9 — Phone 5-9013

Sandia Contracting Representative: Robert H Berg — Place Date 7/17/92 — Org 7214 — Phone 844-6834

Price Justification: ☒ Competition ☐ Comparison ☐ AOA/GSA ☐ Published ☐ Judgment

Reqs Pinged — Credit Buyer 19-29

FORECASTS — Straight Line? ☐ YES

Fcst Date (mo - yr)	Fcst Amt	Fcst Date (mo - yr)	Fcst Amt

Preliminary or Requesting Supervisor Approval: [signature] 2486

Special Approvals: OHNA LEVEL III 42w58120

Computer Approval Signature/Org/SS No: [signature] 6643 349-58-7197

☐ No Acceptable Equipment Found ☐ Notification Copies Sent

Est. Comp Date 8/7/92 — SCR 1124 — Supplier T02119

Quotations Requested: 03 — Quotations Received: 03

ORIGINAL

585/95

DBID: 8E049(1)
OF 2

Date: January 11, 1993

To: David Brownowki, Org. 6643

From: John Murray, Org. 2752

Subject: Nondestructive Inspection Report

Nondestructive inspection as described herein was performed on the following items:

Part No.	Item	Serial No.
S49069	Vertical Lifting Fixture	S49069-101
S49069	Vertical Lifting Fixture	S49069-102
~~S49060~~ S49069 DRB 6-9-93	Vertical Lifting Fixture	~~S49060-103~~ S49069-103 DRB 6-9-93
S49072	Horizontal Lifting Fixture	S49072-101
S49072	Horizontal Lifting Fixture	S49072-102
S48590	Lid Lifting ~~Lug~~	S48590-000-01
S48590	Lid Lifting Lug	S48590-000-02
S52608	Mounting Block	S52608-000-01
T83109	Lifting ~~Lid~~ LUG DRB 6-9-93	T83109-000-01
T83109	Lifting Lug	T83109-000-02
T83109	Lifting Lug	T83109-000-03
T83109	Lifting Lug	T83109-000-04
S51171	Trunnion	S51171-000-01
S51171	Trunnion	S51171-000-02

Areas inspected: Load bearing fillet and butt welds

Date(s) of Inspection: 1/8/93 and 1/11/93

Method(s) of inspection:
_X_ Dye penetrant(PT)
___ Magnetic particle(MP)
___ Radiographic testing(RT)
_X_ Visual inspection
___ Other(specify):_____

Applicable code(s)/specification(s): SNL DWG 9912119, Welding, Caron, Low Alloy,, and Corrosion Resistant Steels

5/9/95

DBID: BED49(2) of 2

Applicable Sandia nondestructive inspection procedure(s):

SNL Dye Penetrant Inspection Procedure 3-B/June 30, 1992

Inspection Report:

No linear discontinities of greater than 1/32" in length were found. There were a few areas of post weld slag adherence on the surface of the welds which caused indications, but there were no apparent discontuities.

The welds are acceptable per SNL DWG. 9912119.

Inspector's comments:

In the fabrication drawings, there are callouts for "Class I" welds, which also dictates the nondestructive testing to be performed on these welds. In some instances, these are technically not Class I welds, as they are fillet or partial penetration butt welds.

In my opinion, the above dye penetrant inspection procedure was sufficient, regardless of whether the welds were a Class I or Class II weld. Since no defects were found, the difference in the limits of defects per the acceptabliliy criteria are in question (as the Class II acceptance standard is not a strict as the Class I acceptance criteria).

Inspector's signature: J. D. Murray

NDT level(s) and method(s): Level III, Liquid Penetrant

Certificate number and expiration date: LM-967, 11/95

Copy to: W. W. Shurtleff, 2752
J. D. Murray, 2752

6/4/95

Sandia National Laboratories
PURCHASE REQUISITION

SF 6430-RD(1-92)

D8ID: 8E142

PURCHASING USE ONLY

Date (mo-day-yr): 7-8-92
PR Number: AD-1560
Ch.Req.No.: 00
Page: 1
Pages: 1

SUGGESTED SOURCE: RELIANCE METALS ATTN: GARY
Phone: 345-0959
FAX: 345-1187

Government Priority: ☐ DO-E2 ☐ DX-E2 ☒ NONE

Security Classification
Material: U
Information: U
☐ Weapon/Weapon-Related
☒ Non-Weapon Related

SHIP TO: Sandia National Laboratories (Include words: "FOR US/DOE")

Location	Commercial Carrier Address (Not Valid for US Mail)	Parcel Post/Mail Address
☐ Bldg. 957	1515 Eubank S.E.	P.O. Box 5000
☐ Bldg.	Albuquerque, NM 87123	Albuq., NM 87185-5800
☐ Bldg. 920	7011 East Avenue	P.O. Box 969
☐ Bldg.	Livermore, CA 94551	Liv., CA 94551-0969
☐ Bldg.	Tonopah Test Range	P.O. Box 871
☐ STON	Tonopah, NV 89049	Tonopah, NV 89049
☐ SMERC (Wareline, 8)	Mercury, NV 89023	P.O. Box 238
☐ Bldg.		Mercury, NV 89023

☐ See Below ☐ No Shipment

SHIP VIA: ☐ Contractor Choice & Expense ☐ Sandia Pickup ☐ Prepay & add to invoice by: ☐ Collect by: ☐ Before shipping call

FOB: ☐ Origin ☐ Destination
MO. No.
Terms
CONFIRMING ORDER DATE SENT ☐ FAX ☐ MAIL ☐ Do Not Duplicate

Item	Quantity	Unit	Material or Service Description/Specification	Est. Unit Price $	HCF/O	Insp.	Prep.	Unit PR/Tax	Extension
1	2	EA	STEEL, ASTM-A-514, GRADE Q, 3 INCH x 13 INCH x 50 INCH	638.					
2	4	EA	STEEL, ASTM-A-514, GRADE H, 2 INCH x 18 INCH x 66 INCH	527.					
3	4	EA	CUTTING CHARGE FOR ITEM 2	50.					
4	2	EA	MATERIAL CERTS FOR ITEMS 1+2.	NC					
			— LAST —						

TOTAL

Date Del/Perf. Req'd.

☐ CRITICAL

Accounting Classification

Item	Quantity	Cost Seq.	Case/CCO	Tran Type	Organization	ESC	$ Amount
ALL	ALL		8965.000		6642		3,600

Item	Quantity	Delivery Date

SPECIAL INFO.
☐ Precious Materials
☐ Continuing Reqmt.
☒ Sole Source
☐ Sole Make
☐ SNL Prop./Mat'l. Furnished
☐ SNL Prop. Acquis. Auth'ed.

Brief Description: STEEL PLATE
Total Est. $ (this action): 3,600

Requester: D. BRONOWSKI | Requester SS No.: 349-58-7197 | Org. 6643 | Phone 5-9013
Deliver to: D. BRONOWSKI | Deliver to SS No.: 349-58-7197 | Org. 6643 | Bldg. 883 | Room G | Phone 5-9013

Sandia Contracting Representative
Place Date | Org. | Phone

Price Justification: ☐ Competition ☐ AOA/GSA ☐ Comparison ☐ Published ☐ Judgement
Neg. Purged | Credit Buyer

FORECASTS: Straight Line ☐ Yes
Fcst Date (mo-yr) | Fcst Amt | Fcst Date (mo-yr) | Fcst Amt.

Preliminary or Requesting Supervisor Approval
Special Approvals: QA/ES [signature]

Contingent Approval Signature/Org./SS No.: [signature] / 6642 / 566-60-1261

☐ No Acceptable Equipment Found ☐ Notification Copies Sent
Est. Comp. Date | SCN | Supplier
Quotations Requested | Quotations Received | C | LB | CCD | Acctg. Certification | Log Dept.

Appendix A
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WHC-SD-WM-RRR-010 Rev. 0

DBID: 8E148

PURCHASING USE ONLY

SF 6430-RD(8-91) PURCHASE REQUISITION

Date (mo - da - yr): 9-1-92

PR Number: TO-1457

SUGGESTED SOURCE: Tab Mfg

Contact:

Phone: 344-5811

SOURCE: Tab Mfg. Company

Government Priority: [ ] DO-E2 [ ] DX-E2 [X] NONE

Security Classification — Material: U — Information: U

[ ] Weapon/Weapon-Related [X] Non-Weapon Related

SHIP TO: Sandia National Laboratories (Include words: "FOR US/DOE")

Location	Commercial Carrier Address (Not Valid for US Mail)	Parcel Post/Mail Address
[ ] Bldg. 957 [ ] Bldg.	1515 Eubank S.E. Albuquerque, NM 87123	P.O. Box 5800 Albuq., NM 87185-5800
[ ] Bldg. 928 [ ] Bldg.	7011 East Avenue Livermore, CA 94551	P.O. Box 969 Liv., CA 94551-0969
[ ] Bldg. [ ] STON	Tonopah Test Range Tonopah, NV 89049	P.O. Box 871 Tonopah, NV 89049
[ ] SMERC (Warehse. 8) [ ] Bldg.	Mercury, NV 89023	P.O. Box 238 Mercury, NV 89023

[ ] See Below [ ] No Shipment

SHIP VIA: [X] Contractor Choice & Expense [ ] Sandia Pickup [ ] Prepay & add to invoice by: [ ] Collect by: [ ] Before shipping call

FOB: [ ] Origin [X] Destination

Terms: 1%-15, N-30-Days

CONFIRMING ORDER DATE SENT: [ ] FAX [ ] MAIL [X] Do Not Duplicate

BUYER:

TECH. FAB COORDINATOR: Padilla 844-7777

Confirming oral agreement dated 8-27-92 between R.Berg /D.Traxler. This procurement includes the following terms & conditions in your possession. Terms & conditions for Purchase Orders Section II, SF6432-PO (8-91) II. The following Articles for Process and Fabrication Laboratory Procurement, SA6431-E (5-91) Apply: I) General Product Requirements; 2) Inspection Reports; 3,4) Welding Requirements [ ] Class I [X] Class II [ ] None; 5) Delegation of Authority [ ] No [X] Yes; 6) Sandia Furnished Material-515-KSM (6-91) [ ] No [X] Yes Shipper No. 152370 Mat'l Value $1500 (Sketches/Drawings Dated ___ [ ] In Contractor's possession)

ARTICLE I STATEMENT OF WORK AND PRICE; Furnish the Following:

Item	Quantity	Unit	Material or Service Description/Specification	Est. Unit Price		Insp.	Prop.	Unit PR/Tax	Extension
						X	✓	$800.00	$1600.00
1	2	ea	FABRICATE STRONGBACK PER DWG NO. 549070, ISSUE A. NOTE MATERIAL FOR ITEM 1 WILL BE SUPPLIED BY REQUESTOR (3"X13"X50" 2ea)						
								$210.00	$420.00
2	2	ea	FABRICATE STANDOFF LEG PER DWG NO. 558999, ISSUE A.			X	✓		
								TOTAL	$2020.00

Date Del/Perf. Req'd.: 9-18-92

Item	Quantity	Cost Seq.	Case/CCO	Tran Type	Organization	ESC	$ Amount
							00002020
All	All		E7714-7	246	02486		

Item	Quantity	Delivery Date
1-2	All	9-18-92

[ ] CRITICAL

SPECIAL INFO.: [ ] Precious Materials [ ] Continuing Pregnt [ ] Sole Source [ ] Sole Make [ ] SNL Prop/Mat'l Furnished [ ] SNL Prop Acqus Auth'ed

Brief Description: 8965.000

Total Est. $ (this action): 4000

Requester: David Bronowski — Requester SS No.: 349-58-7197 — Org.: 6643 — Phone: 5-9013

Deliver to: David Bronowski — Deliver to SS No.: 349-58-7197 — Org.: 6643 — Bldg.: 883 — Room: G — Phone: 5-9013

Sandia Contracting Representative — Place Date: 9/2/92 — Org.: 7211 — Phone: 4-6834

Price Justification: [X] Competition [ ] AOA/USA [ ] Comparison [ ] Published [ ] Judgement

Reqs. Purged — Credit Buyer: 1134

FORECASTS — Straight Line? [ ] YES

Fcst Date (mo - yr)	Fcst Amt.	Fcst Date (mo - yr)	Fcst Amt.

Preliminary or Requesting Supervisor Approval

Special Approvals

[ ] No Acceptable Equipment Found [ ] Notification Copies Sent

Commitment Approval Signature/Org/SS No.: 6643 349-58-7197

Est. Comp. Date: 9/18/92 — SCR — Supplier: 112119

Acctg. Certification — Log Desk

Quotations Requested: 013101 — Quotations Received: 013101 — CM — LB — CCD

COPY

REQUESTER PURCHASE REQUISITION COPY

Appendix A
Page 385
WHC-SD-WM-RRR-010 Rev. 0

-D-1533

08/05/92
8/05/92
SUPP
LL
209482

DBID: 8E143

Case:	8965000
	331
	Y

Notes: NONE

Line Item	Description	Qty Rcv'd	Qty Ord'd	Net Qty Rcv'd	Units	In Cd	Pr Cd
0001	STEEL GRADE D 3 INCH X 13 INCH	2.00	2	2.00	EA	X	V
		Unit Price:		638.00			
0002	STEEL GRADE H2 INCH X 18 INCH	4.00	4	4.00	EA	X	V
		Unit Price:		527.00			
0003	CUTTING CHARGE FOR ITEM 2	4.00	4	4.00	EA	X	V
		Unit Price:		51.77			
0004	MATERIAL CERTS FR ITEMS 1 AND 2	2.00	2	2.00	EA	X	V
		Unit Price:		10.00			

ATTENTION RECIPIENT: Please sign below to acknowledge material receipt.

[signature]	319-58-7197	8-6-92
SIGNATURE	SS NUMBER	DATE DELIVERED

To return this material to the supplier (except for service or maintenance), complete SF 6891-S (3-91), "Deviation Form" and SF 6951-AE (7-88), "Shipper". To report obvious or concealed damage, immediately contact the investigator in Org 3912.

COPY

Fold to dotted line and staple.

RETURN TO: ORG 3912
ATTENTION: RECORDS CLERKS

63/95

BRONOWSKI, DAVID R.

STP: 8900

Carrier:
Ship Via:
Waybill: NA
No. of Pkgs:
Weight:
Case: F991457
Subclass: 346
Reimbursable: Y

Supplier: TAB MANUFACTURING INC
ALBUQUERQUE NM

Notes: NONE

Line Item	Description	Qty Rcv'd	Qty Ord'd	Net Qty Rcv'd	Units	In Cd	Pr Cd
0001	FABRICATE STRONGBACK PER DWG. N	2.00	2	2.00	EA	X	V
		Unit Price:		800.00			
0002	FABRICATE STANDOFF LEG PER DWG.	2.00	2	2.00	EA	X	V
		Unit Price:		210.00			

ATTENTION RECIPIENT: Please sign below to acknowledge material receipt.

D. Bronowski — 349-58-71 — 9-16-92

SIGNATURE — SS NUMBER — DATE DELIVERED

To return this material to the supplier (except for service or maintenance), complete SF 6891-S (3-91), "Deviation Form" and SF 6951-AE (7-89), "Shipper". To report obvious or concealed damage, immediately contact the investigator in Org 3912.

Fold to dotted line and staple.

RETURN TO: ORG 3912
ATTENTION: RECORDS CLERKS

COPY

6495

TAB MANUFACTURING COMPANY

D8ID:BE149

GENERAL INSPECTION REPORT

W.O. NO. 9208-102 CUSTOMER Sandia DATE DUE 9-18-92 PAGE 1 OF 1

NOMENCLATURE Strong Back P.O. NO. TD1457 B/P OR PART NO. 549020/A

	B/P CALLOUT	ACTUAL	ACC.	REJ.		B/P CALLOUT	ACTUAL	ACC.	REJ.
1	6.00 ±.02	6.00	✓		20	3.000 Stock	Finished		
2	2.50 ±.03	2.50	✓			Leg part no 558499/A		1.	
3	5.00 ±.01	5.00	/		1	2.000 ±.060	2.021		
4	12.00 ±.03	12.00			2	1.000 ±.01	1.001		
5	24.875 ±.010	24.877	/		3	5.000 ±.01	5.010		
6	4.56 ±.06	4.520	/		4	3.00 ±.06	3.018		
7	6.00 ±.06	6.020	/		5	2.00 ±.06	2.005		
8	4.00 ±.03	4.00	/		6	2.00 ±.03	2.006		
9	63 Finish	16 BL	/		7	1.500 ±.030	1.482		
10	6.00 ±.03 & chamfer	6.00	/		8	1.06 Stk	1.031		
11	R 4.00 ±.00	4.00	/		9	1.03 ±.06	1.038		
12	12.00 ±.03	11.960	/		10	1.00 ±.01	.989		
13	1.00 ±.01	1.005	/		11	18.00 ±.12	18.000		
14	1.250 1.812 min	1.160 1.860	/		12	Break edge	Broke edge		
15	1.250 1.812 min	1.160 1.160	/		13	1.00 stk	.991		
16	.50 ±.03 x 45° ± 5°	.50 46	/						
17	1.500 ±.010	1.500	/						
18	3.000	3.000	/						
19	4.50 ±.015	4.500	/						

DATE INSPECTED 9-14-92 BY [signature]

COPY

654 95

OREGON STEEL MILLS

PO Box 2760, Portland, Oregon 97208 · (503) 286-9651 TWX 910 464 1549

PL" AD-1660

DBID: 8E144

REPORT OF CHEMICAL/PHYSICAL TESTS 4/92

CERTIFICATE NO	DATE	PAGE
157949	APR 7,1992	1

MILL ORDER NO.	DATE
PM-17968-03	02/06/92

CUSTOMER ORDER NO.: 0050

JOB/REQ. NO.:

SHIPPING NO.	DATE
P157949	04/07/92

CARRIER: W-C

CAR/TRUCK NO.: TRL#

66/95

29300
HIGH STRENGTH STEEL WEST
525 S. 83RD
PHOENIX,AZ 85043

HIGH STRENGTH STEEL WEST
525 S. 83RD
PHOENIX,AZ 85043
ATTN: BILL BRYLOW

2

MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS

OSM ALLOY STRUCTURAL PLATE
ASTM A514-90 GR E

PHYSICAL PROPERTIES

DESCRIPTION	HEAT NO.	SLAB	YIELD PSI x 100	TENSILE PSI x 100	% ELONG 8"	% ELONG 2"	% RA	HARDNESS BHN	BEND TEST	IMP
3 X 96 X 228 AUSTENITIZE TEMP TIME 1660F 180 WQ TEMPER TEMP TIME 1200F 180 AC 2C2620	SK0183	B26	935	1080		22	70	255		

STRONGBACK MATERIAL
UNITS -102 AND -103
($49070)

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cb	Al	Cr	Mo	Ti	B	N	Ca		CE	McQuaid Ehn Grain Size
SK0183	.17	.61	.010	.001	.28	.02	.03			.037	1.45	.44	.038	.0022					06

Q.C. APPROVED
J. Balliet

[Certify] the above results to be correct as contained in the records of OREGON STEEL MILLS By Barbara A. Sorenson TEST REPORT CLERK

COPY

LOAD TEST DATA SHEET

Test Date 4-1-93 Parts Tested Cask lift lugs ~~T83901~~ T83109 & Lifter pins, ref. S49072 (See below)

Facility Used: Dept 8761, SNLA AT, Bldg 861, MTS 220K load tester

Load Cell Mfg MTS Model 220K

Serial No. 520 Cal Exp Date 7-93

Electronics Mfg MTS Model 464

Serial No. 750 Cal Exp Date 7-93

Applied Load: 25,000 lbs

% of Max Working Load 150%

Start Time: 11:16

Stop Time: 11:27

Test Duration: 11 minutes

Appendix A
Page 390
WHC-SD-WM-RRR-010 Rev. 0

Final Disposition:

Quick release pin, CL-16-BLPT-3.50-S, S/N -01,	ACCEPTABLE
Quick release pin, CL-16-BLPT-3.50-S, S/N -02,	ACCEPTABLE
Lift lug, BUSS, P/N T83109-000, S/N -01	ACCEPTABLE
Lift lug, BUSS, P/N T83109-000, S/N -04	ACCEPTABLE

Comments: This is a proof load/acceptance test of the quick release pins that are part of the lifter, part no. S49072-000. The 25,000 test load was selected as follows: the lifter load test requirement is 49,000 pounds (150% of max working load). The fixture is an inverted "Y" shaped fixture with two equal length legs. This equates to a load of 24,500 at each fixture attachment point.

The load test on the cask body lift lugs, (P/N T83109-000) are not required, but were performed as a proof test of the lug welds. The test load of 25,000 is 150% of max working load as described above (the lifter attaches to two lift lugs). Lug welds will be dye penetrant inspected before installation on the cask.

Test configuration is shown on the attached sheet.
Actual load varied from 25,012 to 25,008 over the test duration.

Conducted by: [signature] 2761 Dept 4-1-93 Date

Witnessed by: [signature] 6613 Dept 4-1-93 Date

Pg 1 of 5
6/7/95

DBID: 8E1183(c)
of 5

LOAD TEST DATA SHEET

T83109 DRB 4-9-93

Test Date 4-1-93 Parts Tested Cask lift lugs ~~T83109~~ & Lifter pins, ref. S49072 (See below)

Facility Used: Dept 2761, SNLA AL, Bldg 860, MTS 220K load tester

Load Cell Mfg MTS Model 220K

Serial No. 520 Cal Exp Date 7-93

Electronics Mfg MTS Model 464

Serial No. 750 Cal Exp Date 7-93

Applied Load: 25,000 lbs

% of Max Working Load 150%

Start Time: 11:33

Stop Time: 11:44

Test Duration: 11 minutes

Appendix A
Page 391
WHC-SD-WM-RRR-010 Rev. 0

Final Disposition:

Quick release pin, CL-16-BLPT-3.50-S, S/N -03,	ACCEPTABLE
Quick release pin, CL-16-BLPT-3.50-S, S/N -04,	ACCEPTABLE
Lift lug, BUSS, P/N T83109-000, S/N -02	ACCEPTABLE
Lift lug, BUSS, P/N T83109-000, S/N -03	ACCEPTABLE

Comments: This is a proof load/acceptance test of the quick release pins that are part of the lifter, part no. S49072-000. The 25,000 test load was selected as follows: the lifter load test requirement is 49,000 pounds (150% of max working load). The fixture is an inverted "Y" shaped fixture with two equal length legs. This equates to a load of 24,500 at each fixture attachment point.

The load test on the cask body lift lugs, (P/N T83109-000) are not required, but were performed as a proof test of the lug welds. The test load of 25,000 is 150% of max working load as described above (the lifter attaches to two lift lugs). Lug welds will be dye penetrant inspected before installation on the cask.

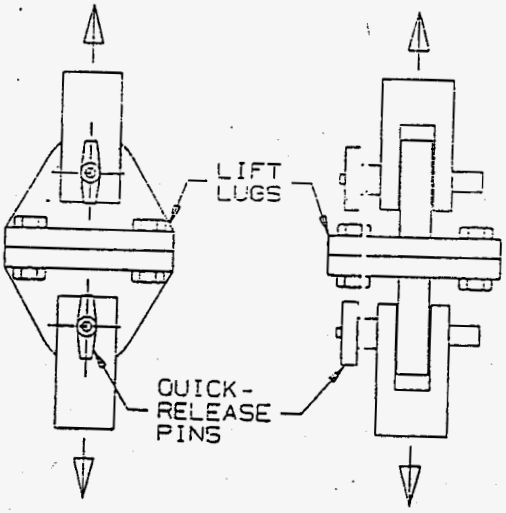
Test configuration is shown on the attached sheet.
Actual load varied from 25,022 to 25,016 over the test duration.

Conducted by: [signature] 2761 Dept 4-1-93 Date

Witnessed by: [signature] 6613 Dept 4-1-93 Date

Pg 2 of 5
68795

LOAD TEST
CONFIGURATION



MTS SYSTEMS
?00 TECHNOLOGY DRIVE
?N PRAIRIE, MN 55344

TRANSDUCER CONDITIONER CALIBRATION REPORT

CUSTOMER Sandia C71927-A01 SYSTEM NO. [illegible] SERIAL NO. 212
TRANSDUCER TYPE 661.31A-02 SERIAL NO. 510 CONDITIONER MODEL [illegible] TEMP. 70°F
DVM I.D. NO. 11455 INDICATOR UNIT I.D. NO. 11641 STANDARDIZER I.D. NO. 11192
ZERO SUP. CAL FACTOR INITIAL CAL FACTOR FINAL CAL FAC SW ON / OFF 1 2 3 4 5 6
RETRACTION POS ☒ NEG ☐ ADDITIONAL EQUIPMENT

RANGE # 1, FULL SCALE ±220 kip
STANDARD CELL/DEVICE I.D. NO. 10630
SHUNT CAL INITIAL 8.207
FINAL
RESISTOR Ω
EXCITATION INITIAL 8.800
FINAL
444 ΔK SW ON ☒ OFF ☐
ADJUSTMENT ☐ REQUIRED ☒ NOT REQUIRED

INITIAL CAL DATA	MODULE OUTPUT	ERROR % OF READING
100%	10.001	
80%	7.995	
60%	5.991	
40%	3.991	
20%	1.994	
0%	0.000	
-20%	-2.003	
-40%	-4.005	
-60%	-6.005	
-80%	-8.002	
-100%	-9.993	

RANGE # 2, FULL SCALE ±100 kip
STANDARD CELL/DEVICE I.D. NO. 10630
SHUNT CAL INITIAL 9.013
FINAL
RESISTOR Ω
EXCITATION INITIAL 8.800
FINAL
444 ΔK SW ON ☐ OFF ☐
ADJUSTMENT ☐ REQUIRED ☒ NOT REQUIRED

INITIAL CAL DATA	MODULE OUTPUT	ERROR % OF READING
100%	9.997	
80%	7.991	
60%	5.991	
40%	3.993	
20%	1.994	
0%	0.000	
-20%	-2.000	
-40%	-3.992	
-60%	-6.001	
-80%	-8.001	
-100%	-9.997	

RANGE # 3, FULL SCALE ±40 kip
STANDARD CELL/DEVICE I.D. NO. 11312
SHUNT CAL INITIAL 9.072
FINAL
RESISTOR Ω
EXCITATION INITIAL 8.800
FINAL
ΔK SW ON ☒ OFF ☐
ADJUSTMENT ☐ REQUIRED ☒ NOT REQUIRED

INITIAL CAL DATA	MODULE OUTPUT	ERROR % OF READING
100%	10.005	
80%	8.005	
60%	6.003	
40%	4.001	
20%	2.000	
0%	0.000	
-20%	-1.996	
-40%	-3.991	
-60%	-5.989	
-80%	-7.984	
-100%	-9.980	

RANGE # 4, FULL SCALE ±20 kip
STANDARD CELL/DEVICE I.D. NO. 11312
SHUNT CAL INITIAL 9.027
FINAL
RESISTOR Ω
EXCITATION INITIAL 8.800
FINAL
ΔK SW ON ☒ OFF ☐
ADJUSTMENT ☐ REQUIRED ☒ NOT REQUIRED

INITIAL CAL DATA	MODULE OUTPUT	ERROR % OF READING
100%	10.012	
80%	8.010	
60%	6.008	
40%	4.006	
20%	2.004	
0%	0.000	
-20%	-1.994	
-40%	-3.991	
-60%	-5.991	
-80%	-7.989	
-100%	-9.986	

FINAL CAL DATA (Ranges 1–4): MODULE OUTPUT / ERROR % OF READING at 100%, 80%, 60%, 40%, 20%, 0%, -20%, -40%, -60%, -80%, -100% — blank.

MTS MEASUREMENT STANDARDS ARE TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

PERFORMED BY B. Szymanski DATE July 9 92

PROCEDURE FOLLOWED Controll # 1234A

WHITE (FIELD SERVICE ENGINEER) YELLOW (CUSTOMER) PINK (REGIONAL SERVICE MANAGER)

Page 4 of 5
70/95

MTS

MTS SYSTEMS
14000 TECHNOLOGY DRIVE
EDEN PRAIRIE, MN 55344

TRANSDUCER CONDITIONER CALIBRATION REPORT

[illegible] (5) of 5

[illegible] (3304 system)

CUSTOMER Sandia C71927-4501 SYSTEM NO. [illegible]
TRANSDUCER TYPE 464.80 SERIAL NO. 750 CONDITIONER MODEL ____ SERIAL NO. ____
DVM I.D. NO. 11409 INDICATOR UNIT I.D. NO. ____ STANDARDIZER I.D. NO. ____ LAB TEMP. 70°F
ZERO SUP. ____ CAL FACTOR INITIAL ____ CAL FACTOR FINAL ____ ON / OFF
RETRACTION POS ☐ NEG ☐ ADDITIONAL EQUIPMENT ____ CAL FAC SW 1 2 3 4 5 6

Range 1

RANGE #, FULL SCALE: CL1: 44821 SN212
STANDARD CELL/DEVICE I.D. NO. ____
SHUNT CAL. INITIAL ____ FINAL ____
RESISTOR ____ Ω
EXCITATION INITIAL ____ FINAL ____
448 ΔK SW ON ☐ OFF ☐

ADJUSTMENT ☐ REQUIRED ☐ NOT REQUIRED

INITIAL CAL DATA	~~MODULE OUTPUT~~ 464	~~ERROR % OF READING~~ 44821	FINAL CAL DATA	MODULE OUTPUT	ERROR % OF READING
100%	10.006	10.005	100%		
80%	8.000	8.001	80%		
60%	6.005	6.005	60%		
40%	3.998	3.998	40%		
20%	2.004	2.004	20%		
0%	0.000	0.001	0%		
-20%	-2.000	-1.998	-20%		
-40%	-4.004	-4.001	-40%		
-60%	-6.008	-6.006	-60%		
-80%	-8.009	-8.007	-80%		
-100%	-10.009	-10.006	-100%		

Range 2

RANGE #, FULL SCALE: CL2: 44821 SN668
STANDARD CELL/DEVICE I.D. NO. ____
SHUNT CAL. INITIAL ____ FINAL ____
RESISTOR ____ Ω
EXCITATION INITIAL ____ FINAL ____
448 ΔK SW ON ☐ OFF ☐

ADJUSTMENT ☐ REQUIRED ☐ NOT REQUIRED

INITIAL CAL DATA	~~MODULE OUTPUT~~ 464	~~ERROR % OF READING~~ 448.11	FINAL CAL DATA	MODULE OUTPUT	ERROR % OF READING
100%	9.982	9.981	100%		
80%	7.999	7.958	80%		
60%	6.008	6.007	60%		
40%	4.001	4.005	40%		
20%	2.004	2.005	20%		
0%	0.000	0.000	0%		
-20%	-2.001	-2.000	-20%		
-40%	-4.004	-4.007	-40%		
-60%	-6.007	-6.007	-60%		
-80%	-8.006	-8.006	-80%		
-100%	-9.997	-9.997	-100%		

Range 3

RANGE #, FULL SCALE: CL3: 44822 SN148
STANDARD CELL/DEVICE I.D. NO. ____
SHUNT CAL. INITIAL ____ FINAL ____
RESISTOR ____ Ω
EXCITATION INITIAL ____ FINAL ____
448 ΔK SW ON ☐ OFF ☐

ADJUSTMENT ☐ REQUIRED ☐ NOT REQUIRED

INITIAL CAL DATA	~~MODULE OUTPUT~~ 464	~~ERROR % OF READING~~ 448.22	FINAL CAL DATA	MODULE OUTPUT	ERROR % OF READING
100%	10.012	10.010	100%		
80%	8.006	8.004	80%		
60%	6.004	6.001	60%		
40%	4.001	3.999	40%		
20%	2.000	2.000	20%		
0%	-0.001	0.001	0%		
-20%	-2.007	-2.007	-20%		
-40%	-4.001	-3.999	-40%		
-60%	-5.999	-5.996	-60%		
-80%	-8.005	-8.007	-80%		
-100%	-10.013	-10.010	-100%		

Range 4

RANGE #, FULL SCALE ____
STANDARD CELL/DEVICE I.D. NO. ____
SHUNT CAL. INITIAL ____ FINAL ____
RESISTOR ____ Ω
EXCITATION INITIAL ____ FINAL ____
448 ΔK SW ON ☐ OFF ☐

ADJUSTMENT ☐ REQUIRED ☐ NOT REQUIRED

INITIAL CAL DATA	MODULE OUTPUT	ERROR % OF READING	FINAL CAL DATA	MODULE OUTPUT	ERROR % OF READING
100%			100%		
80%			80%		
60%			60%		
40%			40%		
20%			20%		
0%			0%		
-20%			-20%		
-40%			-40%		
-60%			-60%		
-80%			-80%		
-100%			-100%		

MTS MEASUREMENT STANDARDS ARE TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

PERFORMED BY [signature] DATE July 10 '92

FORM NO. [illegible]

PROCEDURE FOLLOWED Static voltage levels; DVM reading [illegible]

WHITE (FIELD SERVICE ENGINEER) YELLOW (CUSTOMER) PINK (REGIONAL SERVICE MANAGER)

[initials] 7/7/95

MAR-26-'93 11:57 ID:CARR LANE MFG STL TEL NO:13 #509 P01

78ID.: 8E120(1) of 2

FAX MESSAGE

FROM CARR LANE MFG. CO.

Date: 3.26.93 Time:	From:
To: DAVID BRONOWSKI	
Company:	Fax: 314/647-5736 Phone: 314/647-6200 Ext:

Carr Lane MANUFACTURING CO.
4200 Carr Lane Ct. • St. Louis, MO 63119
P.O. Box 13149 314/647-6200
FAX 314/647-5736 • TWX 910/761-1013

CERTIFICATE OF CONFORMANCE

Your Purchase Order #: D427-2

CL-16-BLPT-3.50-5

COMMERCIAL EQUIVALENT OF MS17985C1635 Dwg C748681

We certify that all items furnished by us on your subject Purchase Order are in conformance with catalog specifications and all applicable manufacturer's drawings.

CARR-LANE MANUFACTURING CO.

By E E Walker Pres

E. E. Walker 3.26.93

Form CL-7

THIS IS A DUPLICATE OBTAINED FROM THE MFG.

Total number of pages including this cover sheet:	Destination Fax no.: 505-844-0244

TURING CO.
... P.O. Box 191970
... 63119-2196
... FAX: 314-647-5736

CL-49 (Rev. 2/92)

7/2/95

BID: 8E120(2) of 2

(Rev. 12-86)

QUICK-RELEASE PIN SPECIFICATIONS

MATERIAL SPECIFICATIONS

COMPONENT	ALLOY STEEL PINS	STAINLESS STEEL PINS
Shank	4130 Steel 160,000 psi minimum zinc or cadmium plated	17-4 PH 180,000 psi minimum or equivalent (300 or 400 Series on Detent Pins)
Spindle	4130 Steel, 1144 steel or equivalent	17-4 PH or 416 stainless steel
Handle-BLPT, BLPL, ABP	Aluminum alloy black anodized or plain finish	Aluminum alloy black anodized or plain finish
Handle-BLPR, BLPB,BPD	Carbon steel, zinc or cadmium plated	303 stainless
Collar	Carbon steel, zinc or cadmium plated	303 stainless
Button	Carbon steel, zinc or cadmium plated or aluminum, anodized	302 or 303 stainless, or aluminum, anodized
Balls	440 C stainless	440 C stainless
Spring	17-7PH, 302 stainless, or music wire	17-7PH or 302 stainless
Handle Ring	Carbon steel, zinc or cadmium plated or 302 stainless	302 stainless
S-Hook	Carbon steel, zinc or cadmium plated or 302 stainless	302 stainless
S-Hook Band	Carbon steel, zinc or cadmium plated or 15-7MO or 302 stainless	15-7MO or 302 stainless

STRENGTH DATA

NOM. DIA.	RECOMMENDED HOLE DIA. MAX	RECOMMENDED HOLE DIA. MIN	BLP, BPD, ABP PULL OUT STRENGTH (2 BALL) *	BLP, BPD, ABP, LFP CALCULATED DOUBLE SHEAR STRENGTH (LBS)** STEEL	BLP, BPD, ABP, LFP CALCULATED DOUBLE SHEAR STRENGTH (LBS)** STAINLESS	DEP CALCULATED DOUBLE SHEAR STRENGTH (LBS)** STEEL	DEP CALCULATED DOUBLE SHEAR STRENGTH (LBS)** STAINLESS	BLP, BPD APPROX. WEIGHT OUNCES HANDLE	BLP, BPD APPROX. WEIGHT OUNCES PER. IN.	DEP INSERTION/ REMOVAL FORCE LBS. MAX	DEP INSERTION/ REMOVAL FORCE LBS. MIN
3/16	.194	.190	200	2,200	2,500	2,200	2,000	1.25	.15	7	2
1/4	.254	.250	230	4,000	4,500	4,200	2,200	1.75	.25	7	2
5/16	.317	.313	510	6,000	7,200	6,700	3,500	2.00	.40	14	6
3/8	.379	.375	575	9,200	10,200	9,700	5,000	2.40	.5	14	6
7/16	.443	.438	710	12,500	14,000	13,200	7,000	2.90	.62	17	8
1/2	.505	.500	1160	16,000	18,000	17,500	9,200	3.40	.80	22	10
9/16	.568	.563	1420	20,500	23,000	22,000	11,500	3.65	1.20	22	10
5/8	.630	.625	2070	25,500	28,700	27,500	13,500	4.00	1.35	30	15
3/4	.757	.750	2970	36,700	41,200	39,500	20,500	4.25	2.30	30	15
7/8	.882	.875	3900	50,000	56,200	50,000	28,500	8.31	2.73	35	20
1	1.010	1.000	5400	65,500	73,500	70,700	37,200	9.00	3.47	40	20

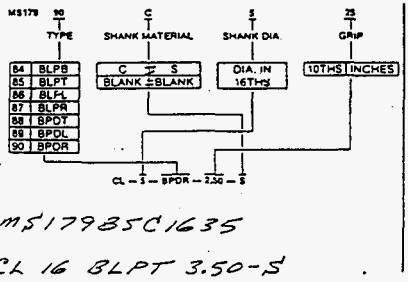
* 30% greater with 4 balls

**2:1 Safety factor

MS & NAS CONVERSIONS

(MS and NAS certified pins available as specials at higher cost)

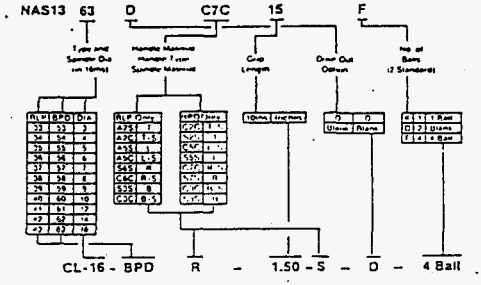
MS TO CARR LANE CONVERSION



MS17985C1635

CL 16 BLPT 3.50-S

NAS TO CARR LANE CONVERSION



* These are the only standard combinations of Handle Material, Handle Style, Spindle Material, BLP-BPD type Directly Convertible from NAS to Carr Lane. Other combinations are available as specials.

73795

ELIFP4 . . . . REQUISITION ** NON STOCK *

DBID: 8E119

MR NUM.: 734253 DELIVER TO: STOP 890 BLDG. 883 ROOM G

1 OF 1 REQUESTOR: BRONOWSKI, DAVID R. PHONE 845-9013

12-23-93 CUSTOMER'S REF:

LINE	QTY	CAT-STOCK NUMBER DESCRIPTION	UNIT PRICE	EXT PRICE
	4 EA	FFC 7090MS1795SC1635 PIN [illegible] Y3.5'	125.00	500.00

----------LAST-ITEM----------

NONSTOCK ITEM WITH PRICE NOT ON FILE.
CONTRACTOR: FILL IN PRICE AND EXTENSION.

Inv # 07456

4

CERTIFICATE OF CONFORMANCE
We certify that the materials on this order have been manufactured in accordance with all applicable government specifications and conform to the purchase order requirements.

Dee Silver

REQUESTOR MUST COUNT AND INSPECT RECEIPTS-NOTIFY CONTACT (BELOW) OF DISCREPANCIES

CONTACT: CONNIE MARTINEZ
PHONE: 844-1163
VENDOR NO.:664905
BARNHILL BOLT
ATTN: DEE SILVER (884-1808)
ALBUQUERQUE, NM 87197

RESTRICTED APPROVAL:

PURCHASING HOLD:

CASE NUM.: 8960400 ORG: 06643
EMPLOYEE NO.: 21316

top copy-accounting middle copy-contractor bottom copy-requestor

GP 1 STP 890
BLDG 883
ROOM G

NAME BRONOWSKI, DAVID R.
ORG 06643 CAT FFC MR 734253
REF:

GP 1 STP 890
BLDG 883
ROOM G

NAME BRONOWSKI, DAVID R.
ORG 06643 CAT FFC MR 734253
REF:

74/95

WSED: BE117(3) of 5

Sandia National Laboratories

Standards Laboratory Report

date: Sept 30, 1992

to: L. M. Garcia, 7813-2

Calibration Expiration Date
Sept 30, 1993

S L Toledo
from: S. L. Toledo, 2761-3

subject: Calibration of Measurement System Scale

As requested a 70,000 lb capacity Measurement System Scale S/N 19123/24177 was calibrated on-site at a location east of Bldg. 887. A Sandia designed load cell S/N 80-4, whose calibration expires 10-30-92, and a Measurement Group Strain Indicator, S/N 70245, calibration expires 10-1-92 were used as a standard for the calibration. The calibrated scale is expected to be accurate within three percent over the calibration period unless the scale is damaged or modified. A blue calibration sticker has been issued for this Measurement System Scale.

The tabulation below shows the readings from the Strain Indicator and the average of three readings from the Measurement System Scale.

Strain Indicator Readings lbs.	Measured Applied Force lbs.
0	180
5000	5007
10000	9893
15000	14893
20000	19960
25000	25006
30000	29927
35000	34880
40000	39973
45000	44833
50000	49753
55000	54926
60000	59453

Copy to:

2761-. Test

75

DSID: SE111(+) OF 5

Sandia National Laboratories

Standards Laboratory Report

date: April 23, 1991

to: L. M. Garcia, 7813-2

S L Toledo

from: S. L. Toledo, 7542

subject: Calibration of Measurement System Scale

A 70,000 lb. capacity Measurement System Scale, S/N 19123/24177, was calibrated on-site at a location east of Bldg. 887. A Sandia designed load cell, S/N 80-4, whose calibration expires 9/29/91, and a Measurements Group Strain Indicator, S/N 70245, whose calibration expires 11/2/91, were used a standard for the calibration. The attached table shows the results for the three calibration runs. There was some difficulty encountered in applying the desired load due to the hoist mechanism and stretch in the nylon straps used in the load path. The average of the three errors for each load step shows a maximum error of 1.2% at approximately 30,000 lbs. and the minimum error of 0.2% at approximately 70,000 lbs.

The calibrated scale is expected to be accurate within three percent over the calibration period unless the scale is damaged or modified. A blue calibration sticker has been issued for this scale.

Copy to:

7542 R. A. May/Calibration File

SA 5710-D16-84

Test #1

Load Cell	Scale	% Error
0	0	0
11330	11500	1.5
20400	20700	1.47
28720	29000	.974
37530	37720	.506
49570	50000	.867
59880	60000	.200
71180	70,690	.309

Test #2

Load Cell	Scale	% Error
0	0	0
[illegible]	12400	.649
20810	21000	.913
30610	31000	1.274
39710	40,000	.730
49740	50000	.533
60730	61000	.445
70710	70700	-.014

DBID: 85117(5) of 5

Test #3

Load Cell	Scale	% Error
0	0	0
11900	12000	.840
22630	22800	.751
29880	30280	1.338
40620	41000	.935
49680	50000	.644
59550	60000	.756
69760	70,000	.344

Average % Error

0
.996
1.045
1.195
.724
.681
.467
.213

7/27/95

Sandia National Laboratories
Albuquerque, New Mexico 87185

date: September 21, 1984

to: H.R. Yoshimura, 6323

from: Alex Gonzales, 6323

subject: BUSS CASK LIFTER ANALYSIS

INTRODUCTION

Analysis previously done on the BUSS Cask lifter, reviewed via memo to H.R. Yoshimura dated September 14, 1984, showed no yielding occurred due to the given load of three times the cask weight. However, after the lifting device which handles the cask in the hot cell was re-designed to lift 6W without yielding, it was investigated to discover if this lifter could be loaded to 6W and not yield. The results showed that unless major geometrical and material changes were made in both the cask lifter and lift lugs on the cask body, the lifter could not handle a 6W load. Since this lifter is used to lift the cask off the truck and onto the loading dock with the impact limiters on, the need to add the extra safety factor as described in ANSI-14.6 was not warranted. If the cask were to drop the impact limiters would absorb the impact protecting the cask and its contents and thus avoiding a severe accident. It was then decided by H.R. Yoshimura to re-design, without major changes, the cask lifter to add an additional factor of safety in lifting a load of 3W. This memo reviews the analysis of the new lifter.

ANALYSIS

Two lifting lugs are situated at the top of the BUSS Cask to enable the entire cask with impact limiters to be lifted (figure 1). A lifting device (figure 2) is used to fit around the lugs. This is an analysis on the lifting device to check if yielding occurs. The design requirements are the lifting device must withstand a load of three times the lifting weight. For consideration, the weight will include the fully loaded cask, both impact limiters, plus the trailer skid for a total of 32900 lb. Thus, the design load will be 3W=98700 lb.

Several possibilities of yielding will be investigated such as:

A. Material tear out at the top in shear
B. Material yield at the top in tension
C. Weld in the top plate
D. Tensile yield in the arm
E. Material tear out at the bottom in shear
F. Material yield at the bottom in tension
G. Pin yielding in shear
H. Strength analysis of insert

86/95

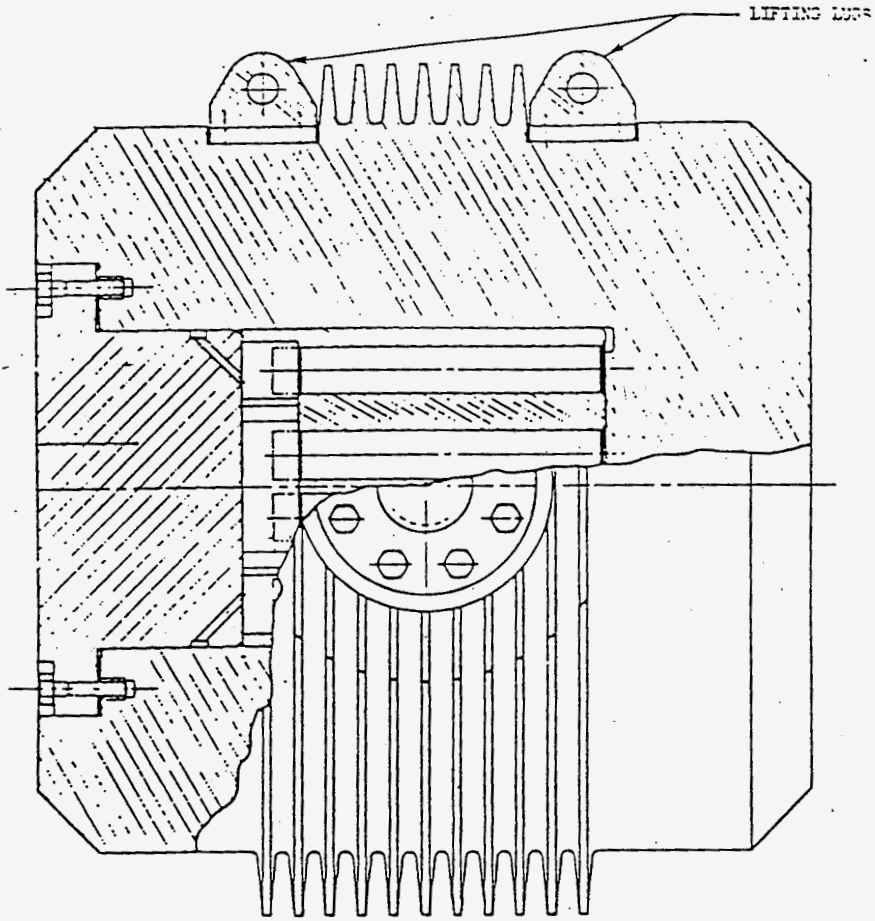


Figure 1

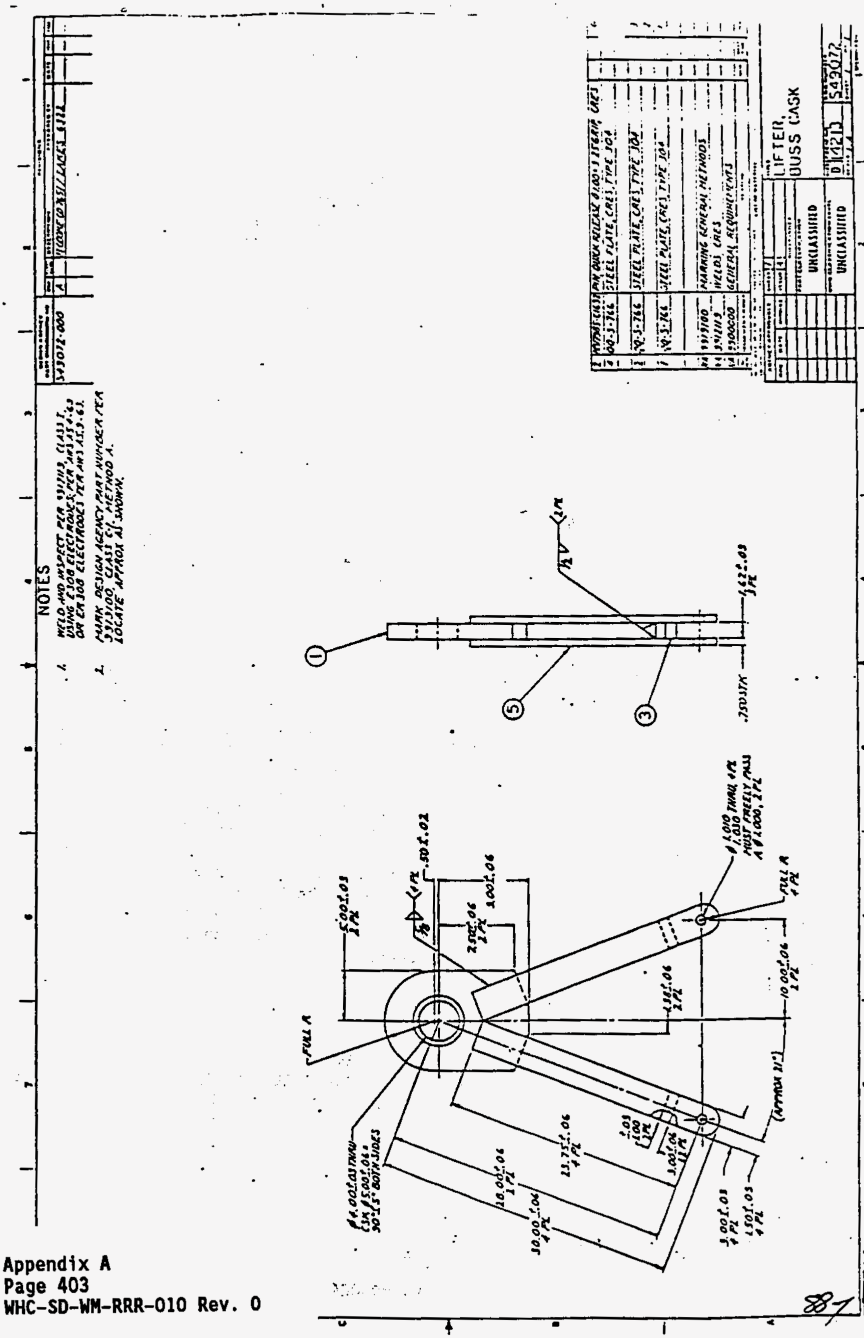

NOTES
LIFTER, BUSS CASK
UNCLASSIFIED
UNCLASSIFIED
549072
FULL R
FULL R

Figure 2

The following sec. ons review the analysis.

A. Material tear out at the top in shear

The top plate must withstand a load of 98700 lb (figure 3). Due to the geometry and the purposed use of the apparatus, it is assumed the load applied will be vertical. Since the cross-sectional geometry of the lifting hook, to be placed inside the hole, is unknown a conservative assumption that the applied load is concentrated at the upper most part of the inner radius is taken. The top portion is experiencing two shear planes with each taking one half of the given load or 49350 lb. The shear plane cross-sectional area is 5.42 in.^{2} Using the expression:

$$\tau = \frac{4V}{3A}$$

gives a shear stress of 12200 psi. The given material is stainless steel with a yield strength of 30000 psi. Defining the allowable shear stress as the effective von Mises stress in shear gives .577(7(S γ)=17300 psi. This is greater than the calculated value thus the top plate will not yield in shear.

B. Material yield at the top in tension

As shown in figure 4, the given load produces a maximum tensile stress across the horizontal plane. In this case the effected area is 9.22 in.^{2} For a load of 98700 lb the stress is 10700 psi which is less than the allowable of 30000 psi. Hence, the top plate material will not yield in tension.

C. Welds in the top plate

It was assumed the cask lifting lugs are rigid to the point no lateral deflection occurs. Thus, a pure truss action is occurring between the cask and the lifting device. Hence, only an axial force is transmitted through the lifting device arm and no moment is produced. Referring to figure 5, the arm makes a 69^o angle with the horizontal producing a 52860 lb axial component. Using the AISC Steel Manual, the available load carrying capability for a 5/8" full penetration fillet weld is 9.28 k/in. or for approximately four inches, 37100 lb per side. Each arm is made up to two 25.25" x 0.75" plates with each plate welded on both sides. Thus, the load carrying capacity of the welds in each arm is 148000 lb, with a safety factor of two giving an allowable load of 74000 lb is greater than the given load of 52860 lb. Hence, the welds will not yield.

D. Tensile yield in the arm

As described above each arm consists of two plates. It will be assumed each plate takes one half the given load or 26430 lb. With a cross-sectional area of 2.25 in.^{2}, the corresponding tensile stress is 11800 psi which is less than the allowable 30000 psi. Thus, the arm will not yield in tension.

95

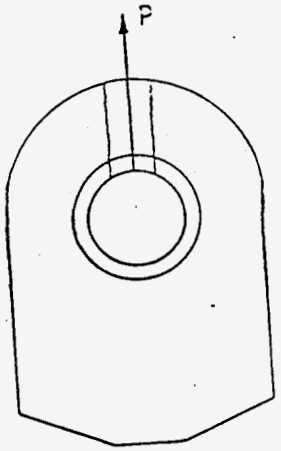


Figure 3

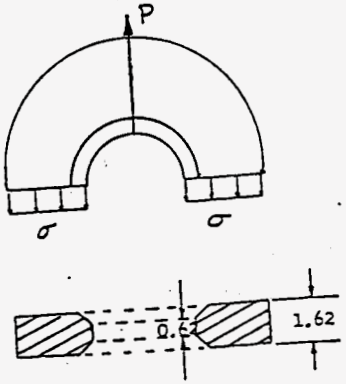


Figure 4

90795

E. Material tear out at the bottom in shear

At the hole two forces are acting at different angles. The given load, 49350 lb, is applied downward while the reaction, 52860 lb, acts along the arm centerline (figure 6). In operation a 1" ϕ pin is inserted through the hole to join the lifting device with the cask lifting lug. Each arm consists of two plates each taking 24860 lb vertically. Maximum shear occurs through two shear planes as shown in figure 6, thus each is loaded 12340 lb vertically. Conservatively taking the cross-section at the bottom most point, A=1.125 in.^{2}, and using the relation:

$$\tau = \frac{4V}{3A}$$

gives a shear stress of 14625 psi. This is within the allowable von Mises shear stress of 17300 psi. If the shear plane is taken at the hole radius a cross-sectional area of 1.5 in^2. is available. This in turn gives a shear stress of 11000 psi which is less than the allowable. With the two sections analyzed, the material will not yield at the bottom due to the loading on the pin.

F. Material yield at bottom in tension

Again, referring to figure 6, section A-A, Area=1.5 in.^{2}, represents the cross-section experiencing maximum tensile stress. The reaction of 52860 lb acts on this arm or 26430 lb per cross-section giving a tensile stress of 17620 psi. This is below the allowable stress of 30000 psi, hence the material will not yield in tension at the pin.

G. Pin yielding in shear

1" ϕ pin is placed in the hole to join the lifting device to the cask lifting lug. The pin is experiencing double shear. According to SNL Mechanical Parts Catalog Volume 3, the allowable load the pin can take in double shear is 147000 lb. Applied with a safety factor of 2, the allowable load of 73500 lb is greater than the given load of 49350 lb vertically and 52860 lb applied along the arm. Thus, the pin will not fail in shear.

H. Strength of insert section

The insert is a 3" x 1" cross-section piece of stainless steel. The insert piece experiences no appreciable stresses, but the 1/2" fillet weld could. Using the AISC Steel Manual, a 1/2" fillet weld is rated at 7.24 k/in. or for three inches it can withstand 22000 lb.

Copy to:

6323	G.C. Allen
6322	T.A. Duffey
6322	R.G. Eakes
6323	R. Cooke
6323	A. Gonzales
6320	File Ref. 84/T1431

9/9/95

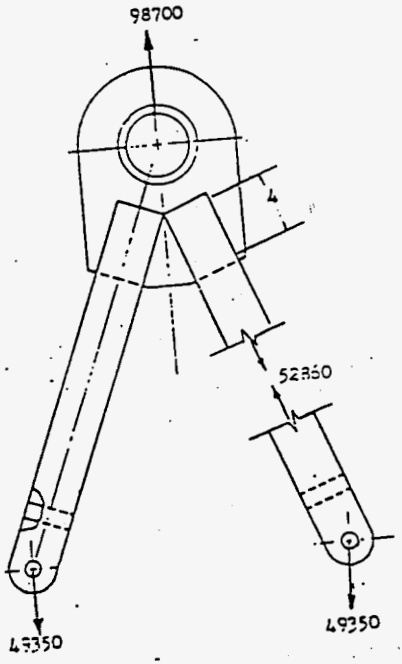


Figure 5

92/95

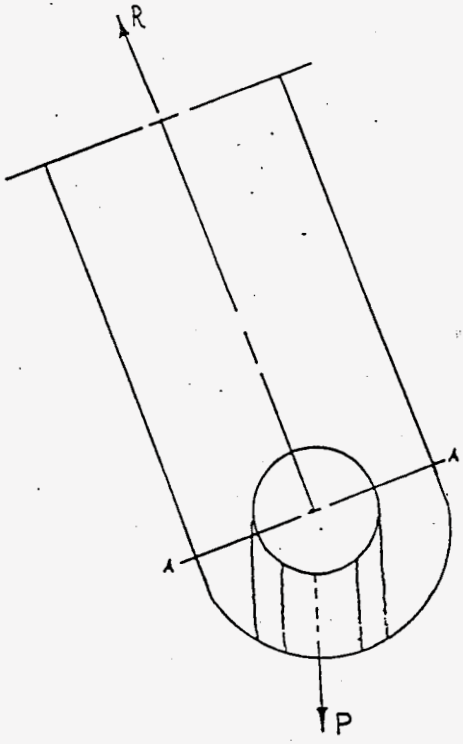


Figure 6

93795

REFERENCES

1. American National Standard for Special Lifting Devices for Shipping Containers Weighting 10000 pounds (4500 kg) or More for Nuclear Materials, ANSI-14.6, February, 1978.

94/95

Sandia National Laboratories

Albuquerque, New Mexico 87185

date: September 14, 1984

to: H.R. Yoshimura

from: Alex Gonzales

subject: BUSS CASK LIFTER ANALYSIS

Two lifting lugs are situated at the top of the BUSS Cask to enable the entire cask with impact limiters to be lifted (figure 1). A lifting device (Figure 2) is used to fit around the lugs. This is an analysis on the lifting device to check if yielding occurs. The design requirements are that the lifting device must withstand a load of three times the lifting weight. For consideration, the weight will include the fully loaded cask, both impact limiters, plus the trailer skid for a total of 32900 lbs. Thus, the design load will be 3W=98700 lbs.

Several possibilities of yielding will be investigated such as:

A. Material tear out at the top in shear

B. Material yield at the top in tension

C. Weld in the top plate

D. Tensile yield in the arm

E. Material tear out at the bottom in shear

F. Material yield at the bottom in tension

G. Pin yielding in shear

H. Strength analysis of insert

The following sections review the analysis.

A. Material tear out at the top in shear

The top plate must withstand a load of 98700 lbs. (figure 3). Due to the geometry and the purposed use of the apparatus, it is assumed the load applied will be vertical. Since the cross-sectional geometry of the lifting hook, to be placed inside the hole, is unknown a conservative assumption that the applied load is concentrated at the upper most part of the inner radius is taken. The top portion is experiencing two shear planes with each taking one half of the given load or 49350 lbs. The shear plane cross-sectional area is 4.61 in^2. Using the expression

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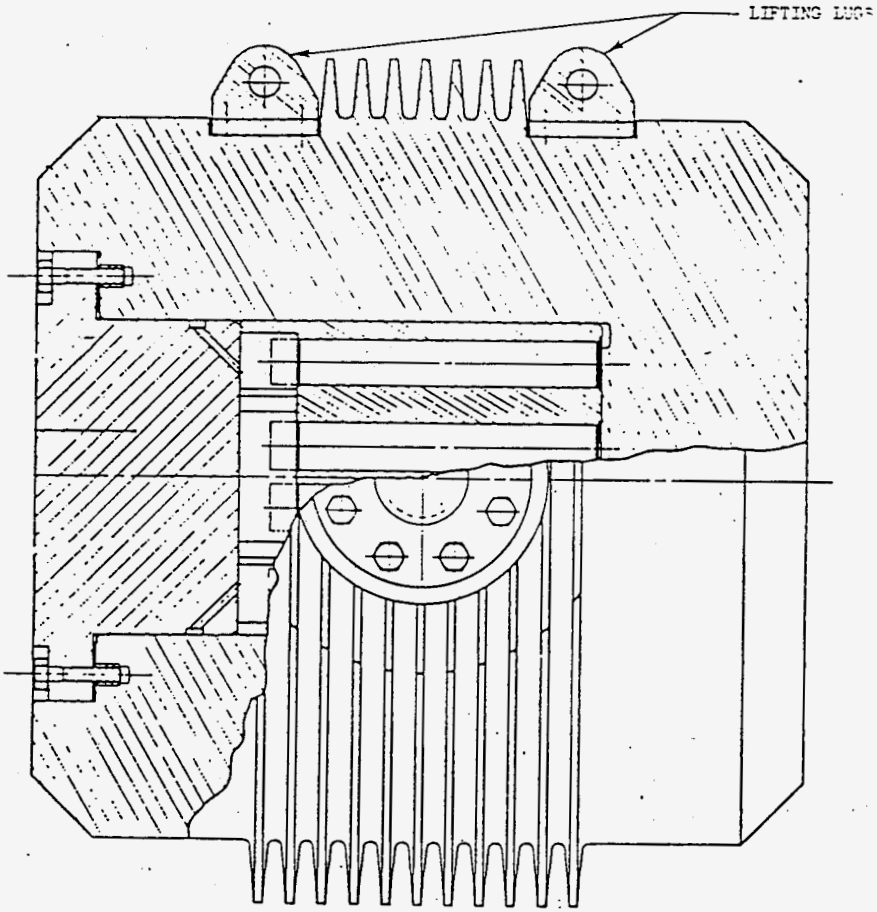


Figure 1

79795

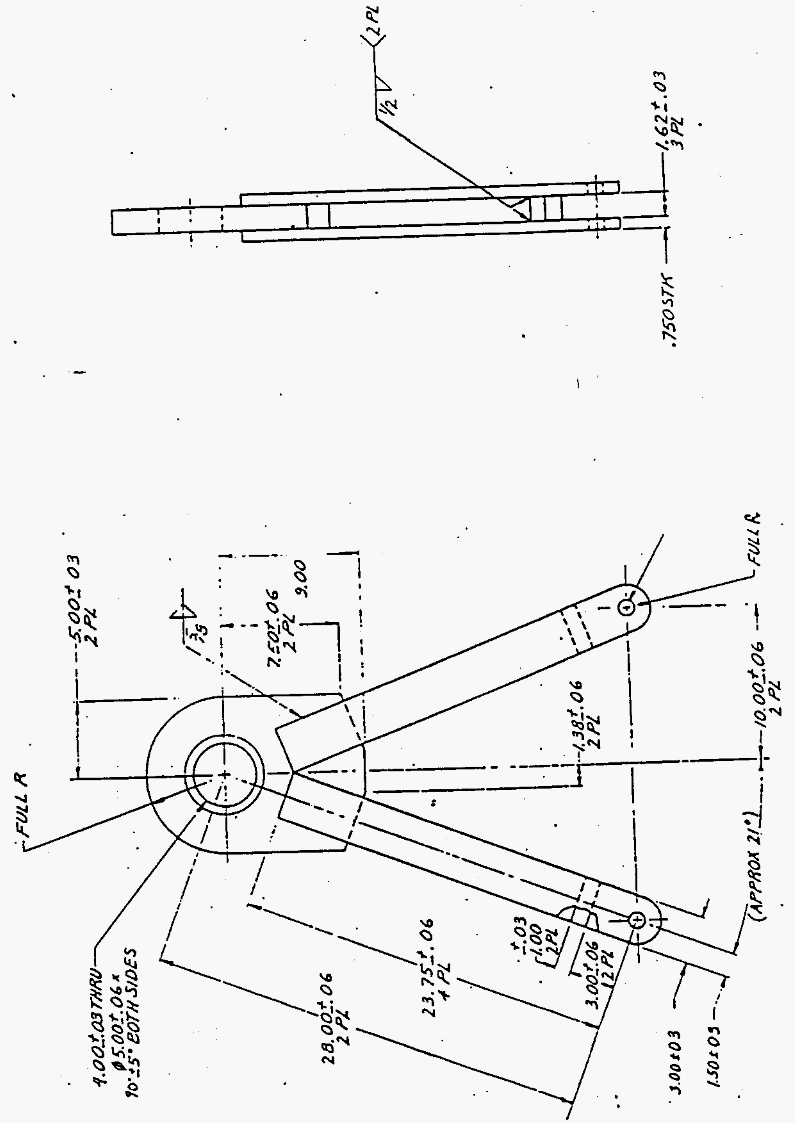


Figure 2

80/95

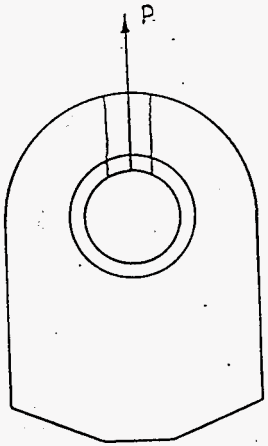
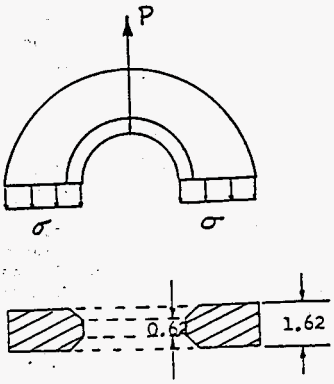


Figure 3



Figure

8/95

$$\tau = \frac{4V}{3A}$$

gives a shear stress of 14300 psi. The given material is stainless steel with a yield strength of 30000 psi. Defining the allowable shear stress as the effective von Mises stress in shear gives .577(Sy)=17300 psi. This is greater than the calculated value thus the top plate will not yield in shear.

B. Material yield at the top in tension

As shown on figure 4, the given load produces a maximum tensile stress across the horizontal plane. In this case the effected area is 9.22 in^2. For a load of 98700 lbs the stress is 10700 psi which is less than the allowable of 30000 psi. Hence, the top plate material will not yield in tension.

C. Welds in the top plate

It is assumed the cask lifting lugs are rigid to the point no lateral deflection occurs. Thus, a pure truss action is occurring between the cask and the lifting device. Hence, only an axial force is transmitted through the lifting device arm and no moment is produced. Referring to figure 5, the arm makes a 69° angle with the horizontal producing a 52860 lb. axial component. Using the AISC Steel Manual, the available load carrying capability for a 5/8" full penetration fillet weld is 9.28k/in. or for approximately four inches, 37100 lbs. per side. Each arm is made up of two 25.25" x 0.75" plates with each plate welded on both sides. Thus, the load carrying capacity of the welds in each arm is 148000 lbs., with a safety factor of two giving an allowable load of 74000 lbs. is greater than the given load of 52860 lbs. Hence, the welds will not yield.

D. Tensile yield in the arm

As described above each arm consists of two plates. It will be assumed each plate takes one half the given load or 26430 lbs. With a cross-sectional area of 2.25 in^2., the corresponding tensile stress is 11800 psi which is less than the allowable 30000 psi. Thus the arm will not yield in tension.

E. Material tear out at the bottom in shear

At the hole two forces are acting at different angles. The given load, 49350 lbs., is applied downward while the reaction, 52860 lbs., acts along the arm centerline (figure 6). In operation a 1" ϕ pin is inserted through the hole to join the lifting device with the cask lifting lug. Each arm consists of two plates each taking 24680 lbs. vertically. Maximum shear occurs through two shear planes as shown in figure 6, thus each is loaded 12340 lbs. vertically. Conservatively taking the cross-section at the bottom most point, A=0.75 in^2., and using the relation

$$\tau = \frac{4V}{3A}$$

gives a shear stress of 22000 psi. This exceeds the allowable von Mises shear stress of 17300 psi. If the shear plane is taken at the hole radius a

82745

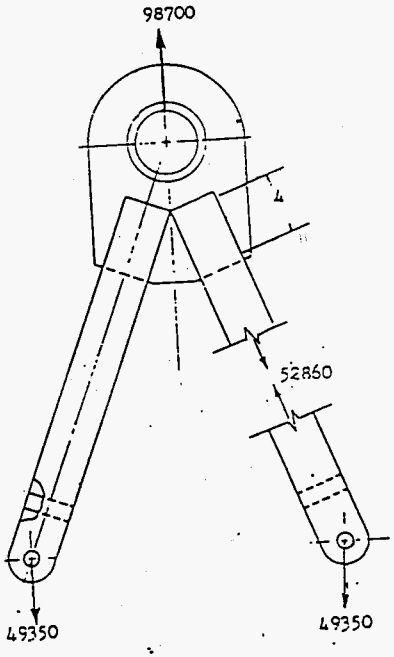


Figure 5

83-95

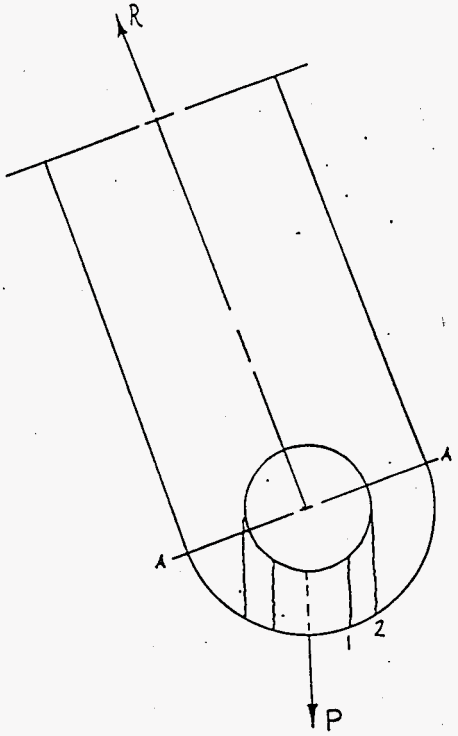


Figure 6

2/4/95

cross-sectional area of 1.125 in^2. is available. This in turn gives a shear stress of 15000 psi which is less than the allowable. Even though the hole radius shear plane presented a shear stress within the allowable it is recommended the material radius be increased from 1.5 in. to 1.75 in.

F. Material yield at the bottom in tension

Again, referring to figure 6, section A-A, Area=1.5 in^2, represents the cross-section experiencing maximum tensile stress. The reaction of 52860 lbs. acts on this arm or 26430 lbs per cross-section giving a tensile stress of 17620 psi. This is below the allowable stress of 30000 psi, hence, the material will not yield in tension at the pin.

G. Pin yielding in shear

A 1"0 pin is placed in the hole to join the lifting device to the cask lifting lug. The pin is experiencing double shear. According to SNL Mechanical Parts Catalog, Volume 3, the allowable load the pin can take in double shear is 147000 lbs. Applied with a safety factor of 2, the allowable load of 73500 lbs. is greater than the given load of 49350 lbs. Thus, the pin will not fail in shear.

H. Strength of insert section

The insert is a 3" x 1" cross-section piece of stainless steel. The insert piece experiences no appreciable stresses, but the 1/2" fillet weld could. Using the AISC Steel Manual, a 1/2" fillet weld is rated at 7.24k/in. or for three inches it can withstand 22000 lbs.

Copy to:

6323 G. Allen
6322 T. Duffey
6322 R. Eakes
6323 R. Cooke
6323 A. Gonzales
6320 File R.P. 84/T1431

85-95

1, -GN-D

J-5	CRAFT/RESOURCE USAGE LOG AND MAINTENANCE RECORD	1. Document Number 2B-93-00144 (6/W)

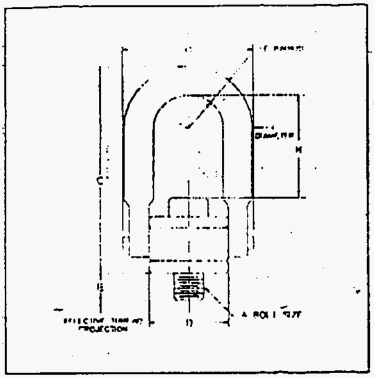
Date	Turnover, Problem Description, Action Taken	Name	Craft/ Resource Type	Hours

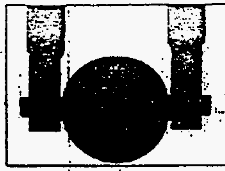
Summary by Craft/Resource Type

Craft/Resource Type	Total Hours	Craft/Resource Type	Total Hours

DBID: 8E361(3) of 4

Swivel Hoist Ring



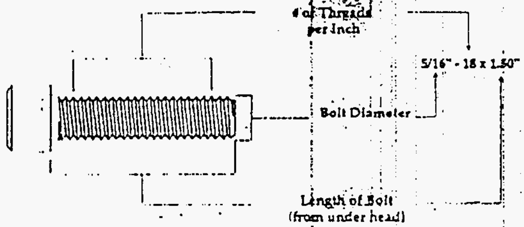


Top washer has the following features:

- The Working Load Limit and Recommended Torque value are permanently stamped into each washer.
- Washer is color coded for easy identification
  Red - UNC thread
  Silver - Metric thread

BOLT SIZE IDENTIFICATION

The size of the bolt will be stated as in the following example. Illustration shows meaning of each dimension given.



HR-125 Stock No.	Working Load Limit* (lbs.)	Torque in Ft. Lbs.	Bolt Size †† A	Effective Thread Projection Length B	C	D	Radius E	Diameter F	G	H	Est. Weight Each (lbs.)
				Dimensions (in.)							
1016887†	800	7	5/16 - 18 x 1.50	.59	2.68	1.00	.45	.38	1.75	[illegible]	[illegible]
1016898†	1000	12	3/8 - 16 x 1.50	.59	2.68	1.00	.45	.38	1.75	1.09	.38
1016909	2500	28	1/2 - 13 x 2.00	.71	4.90	2.00	.89	[illegible]	[illegible]	[illegible]	[illegible]
1016912†	2500	28	1/2 - 13 x 2.50	1.21	4.90	2.00	.89	[illegible]	[illegible]	[illegible]	[illegible]
1016920	4000	60	5/8 - 11 x 2.00	.71	4.90	2.00	.89	.75	3.30	2.21	2.70
1016924†	4000	60	5/8 - 11 x 2.75	1.46	4.90	2.00	.89	.75	3.30	2.21	2.70
1016931	5000	100	3/4 - 10 x 2.25	.96	4.90	2.00	.89	.75	3.30	[illegible]	[illegible]
1016935†	5000	100	3/4 - 10 x 2.75	1.46	4.90	2.00	.89	.75	[illegible]	[illegible]	[illegible]
1016942	7000	100	3/4 - 10 x 2.75	.90	6.58	3.00	1.40	1.00	4.80	2.98	7.50
1016946†	7000	100	3/4 - 10 x 3.50	1.65	6.58	3.00	1.40	1.00	4.80	2.98	7.50
1016953	8000	160	7/8 - 9 x 2.75	.90	6.58	3.00	1.40	1.00	4.80	[illegible]	7.50
1016957†	8000	160	7/8 - 9 x 3.50	1.65	6.58	3.00	1.40	1.00	4.80	[illegible]	7.50
1016964	10000	230	1 - 8 x 3.00	1.15	6.58	3.00	1.40	1.00	4.80	2.73	7.50
1016969†	10000	230	1 - 8 x 4.00	2.15	6.58	3.00	1.40	1.00	4.80	2.73	7.50
10[illegible]75	15[illegible]	470	1[illegible] x [illegible].50	2.34	[illegible]	[illegible]	[illegible]	[illegible]	6.00	[illegible]	[illegible]
1[illegible]6	2[illegible]	[illegible]	[illegible] x [illegible]	2.98	12.41	4.75	[illegible]	[illegible]	8.00	[illegible]	[illegible]
1016997	30000	1100	2 - 4 1/2 x 6.50	2.98	12.41	4.75	2.25	1.75	8.00	[illegible]	[illegible]

AVAILABLE SPRING 1993

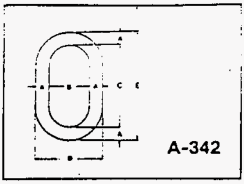
* Ultimate load is 5 times the Working Load Limit.

† Long bolts are designed to be used with soft metal (i.e., aluminum) wo[illegible] (i.e., steel & iron) work piece, short bolts are designed for ferrous work [illegible]

†† Bolt specification is a Grade 8 Alloy socket head cap screw to ASTM A [illegible]

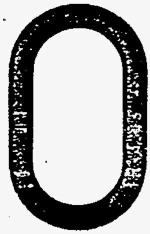
DBID: BE361(2) 0/4

MASTER LINK



A-342

- Alloy Steel — Quenched and Tempered.
- Individually proof tested at 2 times Working Load Limit with certification.
- Proof test certification shipped with each link.
- Sizes from ½" to 2" are drop forged.

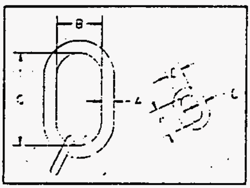


A-342

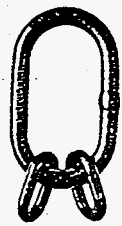
Size (in.)	A-342 Stock No. S.C.	Working Load Limit *† (lbs.)	Weight Each (lbs.)	Dimensions (in.) A	B	C	D	E
½	1014262	4100	.89	.50	2.50	5.00	3.50	6.00
⅝	1014280	5500	1.63	.63	3.00	6.00	4.25	7.25
¾	1014306	8600	2.25	.75	2.75	5.50	4.25	7.00
1	1014324	20300	5.00	1.00	3.50	7.00	5.50	9.00
1¼	1014342	29300	9.75	1.25	4.38	8.75	6.88	11.25
1½	1014360	39900	17.12	1.50	5.25	10.50	8.25	13.50
1¾	1014388	52100	26.12	1.75	6.00	12.00	9.50	15.50
2	1014404	81400	41.12	2.00	7.00	14.00	11.00	18.00
†† 2 ¼	1014422	99500	54.80	2.25	8.00	16.00	12.50	20.50
†† 2 ½	1014468	122750	71.60	2.50	8.00	16.00	13.00	21.00
†† 2 ¾	1014440	148500	87.70	2.75	9.50	16.00	15.00	21.50
†† 3	1014486	190000	115.00	3.00	9.00	18.00	15.00	24.00
†† 3 ¼	1014501	218500	145.00	3.25	10.00	20.00	16.50	26.50
†† 3 ½	1014529	232500	200.00	3.50	12.00	24.00	19.00	31.00

† Based on Single leg sling. Minimum Ultimate Load is 6 times Working Load Limit.
†† Welded Master Link.
* To determine Working Load for Double leg sling at 60° included angle, Multiply by 1.73.

MASTER LINK ASSEMBLY



- Alloy Steel — Quenched and Tempered.
- Individually proof tested at 2 times Working Load Limit with certification.
- Proof test certification shipped with each link.
- All sizes are drop forged.



A-345

Size (in.)	A-345 Stock No. S.C.	Working Load Limit *† (lbs.)	Weight Each (lbs.)	Dimensions (in.) A	B	C	D	E	F
¾	1014734	9050	2.60	.75	2.75	5.50	.47	.91	1.66
1	1014752	18400	6.10	1.00	3.50	7.00	.66	1.25	2.31
1¼	1014770	31150	13.20	1.25	4.38	8.75	.91	1.72	3.19
1½	1014798	47000	24.20	1.50	5.25	10.50	1.19	2.31	4.25
1¾	1014814	73500	35.90	1.75	6.00	12.00	1.31	2.56	4.69
2	1014832	88850	57.30	2.00	7.00	14.00	1.44	2.75	5.12

† Ultimate Load is 4 times the Working Load Limit.
* Working Load Limit with coupling links at 60° included angle.

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DBID: BE359(2) of 2

SANDIA NATIONAL LABORATORIES
ALBUQUERQUE, NEW MEXICO 87185
Purchasing

DATE: 08/12/93

TO: DAVID R. BRONOWSKI , 6643

FROM: KATHLEEN J. GALLEGOS , 7221

SUBJECT: PURCHASE ORDER

As part of Organization 7221's service to our customers, the following is information pertaining to your Purchase Order Number AG-3481:

Description: LIFTING BRIDAL

Date Placed: 08/11/93

Vendor: THE MINE SUPPLY CO

Contract Amount: $505.36

Estimated
Shipment Date: 08/18/93

I am the buyer for the purchase order and you may call me on ext. 4-9414 if you require any further information.

DBID: 8E 361(4) of 4

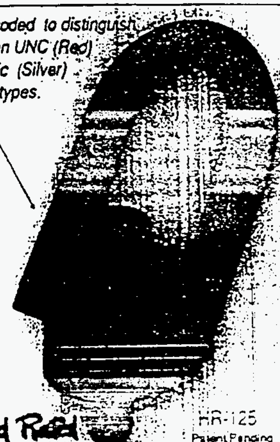
CROSBY DOES IT [illegible]!

The Commitment to Quality Continues with...

The Swivel Hoist Ring

The Crosby Swivel Hoist Ring has been designed with the following features:

- Each product has a Product Identification Code (PIC) for material traceability along with a Working Load Limit and the name Crosby or "CG" stamped into it.
- Available in sizes from 800 pounds to 30,000 pounds Working Load Limit.
- 360° swivel and 180° pivot action.
- 100% individually proof tested to 2 1/2 times the Working Load Limit with certification and Statistically Magnetic Particle Inspected. (Can be furnished 100% Magnetic Particle Inspected when requested at time of order.)
- Fatigue rated to 20,000 cycles at 1 1/2 times the Working Load Limit.
- Individually packaged along with proper application instructions and warning information.
- A design factor of 5 to 1.
- Bolt is secured with retaining ring (Patent Pending). Replacement kit available. Bolt is individually Proof Tested.
- Metric sizes also available.
- Multiple Bolt lengths available to meet specific application requirements.

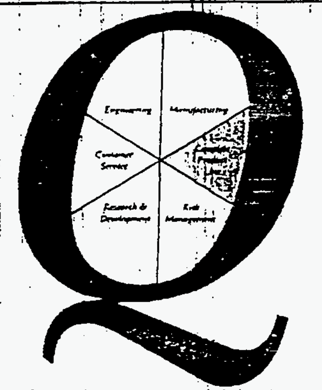


Our ongoing commitment to providing you a complete line of quality lifting components continues with the addition of the Swivel Hoist Ring.

Crosby offers the most comp[illegible] ponents in the world [illegible] by any one competing pro[illegible] your rigging needs.

You expect Quality from Crosby, and we will continue to deliver Quality.

An ISO 9001 Certified Company



The Quality Continuum is a symbol identifying six segments of Crosby's business that when viewed as one, differentiates Crosby in the marketplace.

"When buying Crosby, you're buying more than product, you're buying Quality.

Available Only Through Your Authorized Crosby Distributor

UBF00AB

PO RECEIVAL DELIVERY TICKET

DRID:8E360

Date: 08/19/93
Time: 10:47:32
Page:, 1

Recipient: BRONOWSKI,DAVID R.
Orgn: 06643
Phone: 5058459013
Building: 883
Room: G

****
* STP: S900 *
****

PO Number: AG-3481
Receival: 1
Receival Date: 08/19/93
Process Date: 08/19/93
Clerk: 525041550
Carrier: SUPP
Ship Via: LL
Waybill: 79167
No. of Pkgs: 2 PC
Weight:
Case: 8975200
Subclass: 331
Reimbursable: O

Supplier: THE MINE SUPPLY CO
ALBUQUERQUE NM

Notes: NONE

Line Item	Description	Qty Rcv'd	Qty Ord'd	Net Qty Rcv'd	Units	In Cd	Pr Cd
0001	3 LEG LIFTING BRIDAL. ASSEMBLY	2.00	2	2.00	EA	X	V
		Unit Price:		252.68			

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ATTENTION RECIPIENT: Please sign below to acknowledge material receipt.

D Bronowski — 349-58-7197 — 8-19-93

SIGNATURE — SS NUMBER — DATE DELIVERED

To return this material to the supplier (except for service or maintenance), complete SF 6891-S (3-91), "Deviation Form" and SF 6751-AE (7-88), "Shipper". To report obvious or concealed damage, immediately contact the investigator in Org 7612.

Fold to dotted line and staple.

RETURN TO: ORG 7612
ATTENTION: RECORDS CLERKS

DBID: 8E3591(1) OF 2

PURCHASE REQUISITION

PURCHASING USE ONLY — SF 6430-RD(8-82)

Date (mo - yr)	PR Number	Ch.Req.No.	Ch. No.	Page	Pag
8-10-93	AG-3481	0		1	1

SUGGESTED SOURCE
IMSCO
Contact:
5840A MIDWAY PARK BLVD NE
ALBUQ, NM Zip: 87109
Phone: 344-8024 FAX: 344-8505

SOURCE
Zip:
Phone:

Government Priority
☐ DO-E2
☐ DX-E2
☒ NONE
Security Classification
Material U
Information U
☐ Weapon/Weapon Related
☒ Non-Weapon Related

SHIP TO — Sandia National Laboratories (Include words: "FOR US/DOE")

Location	Commercial Carrier Address (Not Valid for US Mail)	Parcel Post/Mail Address
☒ Bldg. 967	1515 Eubank S.E.	P.O. Box 5800
☐ Bldg.	Albuquerque, NM 87123	Albuq., NM 87185-5800
☐ Bldg. 920	7011 East Avenue	P.O. Box 969
☐ Bldg.	Livermore, CA 94551	Liv., CA 94551-0969
☐ Bldg.	Tonopah Test Range	P.O. Box 071
☐ STON	Tonopah, NV 89049	Tonopah, NV 89049
☐ SMERC /Warehse. 81	Mercury, NV 89023	P.O. Box 238
☐ Bldg.		Mercury, NV 89023

☐ See Below ☐ No Shipment

SHIP VIA
☐ Contractor Choice & Expense
☐ Sandia Pickup
☐ Prepay & add to Invoice
by:
☐ Collect by:
☐ Before shipping call

FOB
☐ Origin
☐ Destination
MO. No.
Terms
CONFIRMING ORDER
DATE SENT
☐ FAX ☐ PRINT
☐ MAIL
☐ Do Not Duplicate

Item	Quantity	Unit	Material or Service Description/Specification	Est.Unit Price $	Insp	Prop	Unit PP/Tax	Extension	Cam. Code
1	2	EA	3 LEG LIFTING BRIDAL ASSEMBLY	253.					
			TO CONSIST OF 3/8-INCH WIRE ROPE,						
			3 EACH AT 6 FOOT LONG, ON A						
			~~EOT~~ CROSBY A342, 1 1/4-INCH MASTER						
			LINK, WITH A 3/4-10 SWIVEL EYE						
			ON THE BOTTOM OF EACH LEG.						
			ASSEMBLY TO BE TAGGED WITH						
			RATING (3000 POUNDS).						

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Date Del/Perf. Req'd

Accounting Classification

Item	Quantity	Cost Seq.	Case/CCO	Tran Type	Organization	ESC	$ Amount
ALL	ALL		8975.200		6643		

TOTAL

Item	Quantity

☐ CRITICAL

SPECIAL INFO.
☐ Radioactive
☐ Nuclear
☐ Precious Materials
☐ Continuing Reqmt
☐ Sole Source
☐ Sole Make
☐ SNL Prop./Matl. Furnished
☐ SNL Prop. Acqus. Auth'od

Brief Description: LIFTING BRIDAL

Total Est. $ (this action): 506.

Sandia Contracting Representative

Requester: DAVE BRONOWSKI — Requester/SS No.: 349-58-7197 — Org.: 6643 — Phone: 8-9013 — Place Date — Org. — Phone

Deliver to: DAVE BRONOWSKI — Deliver to /SS No.: 349-58-7197 — Org.: 6643 — Bldg.: 883 — Room: G — Phone: 5-9013

Price Justification: ☐ Competition ☐ AOA/GSA ☐ Published ☐ Comparison ☐ Judgment

FORECASTS — Straight Line? ☐ Yes

Fcst Date (mo - yr)	Fcst Amt.	Fcst Date (mo - yr)	Fcst Amt.

Preliminary or Requesting Supervisor Approval

Special Approvals

Reqs. Purged — Credit Buyer

Commitment Approval Signature/Org./SS No.: Michael C. Bixby 643 457-27-0068

☐ No Acceptable Equipment Found ☐ Notification Copies Sent

Est. Comp. Date — SCR — Supplier

Quotations Requested — Quotations Received — C — TB — CCD — Acctg. Certification — Log Desk

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.2.2.1 - July 24, 1996

Acceptance Criteria:

Documentation which demonstrates that the annual Safety Analysis Report for Packaging (SARP)-required testing program (PMs) has been completed.

Discussion:

Chapter 8 of the BUSS Cask SARP requires specific testing on an annual basis to evaluate the performance of different components. The only regular maintenance that the BUSS cask requires is to replace the seals after each use and to clean the road dirt from all components of the system after the cask is transported.

Operating procedure EO-100-027, "Loading and Testing The Beneficial Uses Shipping System Cask" contains specific steps for replacing the BUSS Cask seals after each use including (Hold Points) for independent verification of this process by a Quality Control Technician.

Operating procedure EO-100-023, "Unload The Beneficial Uses Shipping System Cask" and EO-100-026, "Assembly and Shipment of the Beneficial Uses Shipping System Cask", contain specific steps for cleaning the BUSS cask prior to loading and re-assembly.

The specific components that require annual testing/inspections are the Cask body, Trunnions and Lifting Lugs, all permanent bolts, and weight test of the Impact Limiters. These tests and inspections were completed as required in December of 1996 in accordance with the BUSS Cask SARP, Chapter 8 Table 8.2-1. Upon the completion of the annual tests it has become a standard practice of the Capsule Management Team to issue a supporting Document which captures all related records and data sheets into one document. The inspection records and the associated FY 1996 Annual BUSS Cask testing records are contained in supporting document, WHC-SD-WM-TI-732.

Supporting Documentation:

WHC-SD-WM-TI-732, "Documentation for fiscal year 1996 Annual BUSS Cask SARP Testing and Inspections.

Outstanding Items/Limitations:

- N/A

Completion: M. M. Pereira/M. W. Pawlak Date: 7/24/96

Concurrence: P. T. Saueressig Date: 7/24/96

Stat (3)

JAN 17 1996

ENGINEERING DATA TRANSMITTAL

1. EDT № 610962

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Capsule Recovery Program	Capsule Recovery Program	N/A
5. Proj./Prog./Dept./Div.:	**6. Cog. Engr.:**	**7. Purchase Order No.:**
Capsule Recovery Program	P. T. Saueressig	N/A

8. Originator Remarks:
Transmittal and release of the supporting document which compiles the documentation for fiscal year 1996 Annual BUSS Cask Safety Analysis Report For Packaging (SARP) Testing and Inspections.

9. Equip./Component No.: N/A

10. System/Bldg./Facility: N/A

11. Receiver Remarks:
Comments have been incorporated Appendix A Page 427 WHC-SD-WM-RRR-010 Rev. 0

. Major Assm. Dwg. No.: N/A

. Permit/Permit Application No.: N/A

... Required Response Date:

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Desig-nator	(G) Reason for Trans-mittal	(H) Origi-nator Dispo-sition	(I) Receiv-er Dispo-sition
1	WHC-SD-WM-TI-732	-	0	Documentation for fiscal year 1996 Annual BUSS Cask SARP Testing and Inspections	N/A	1,2	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature (M) MSIN	(L) Date	(J) Name	(K) Signature (M) MSIN	(L) Date	(G) Reason	(H) Disp.
1,2	1	Cog.Eng.(P.T. Saueressig)	[signature] S6-65	01/15/96	Central Files	~~L8-04 A3-88~~ CMS	1/15/96	3	
1,2	1	Cog. Mgr.(J.L. Pennock)	[signature] B4-70		~~O. S. T. 1 (3)~~	CMS 1/15/96		~~3~~	
		QA	N/A		Mike W. Pawlak	S6-65		3	
		Safety	N/A						
		Env.	N/A						
1	1	Packaging and Safety Eng. (W.A. McCormick)	[signature]	1/8/96					

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No.
[signature] 1/15/96	[signature] 01/15/96	[signature] 1/15/96	☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
Signature of EDT Originator Date	Authorized Representative for Receiving Organization Date	Cognizant Manager Date	

RELEASE AUTHORIZATION

Document Number:	WHC-SD-WM-TI-732, REV 0
Document Title:	Documentation for Fiscal Year 1996 Annual BUSS Cask SARP Testing and Inspections
Release Date:	1/15/96

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara Broz 1/15/96

Kara Broz

SUPPORTING DOCUMENT

1. Total Pages 185

2. Title
Documentation for Fiscal Year 1996 annual BUSS Cask SARP Testing and Inspections.

3. Number
WHC-SD-WM-TI-732

4. Rev No.
0

5. Key Words
Beneficial Uses Shipping System (BUSS) Cask, Safety Analysis Report for Packaging (SARP), Hydrostatic and Dye Penetrant.

6. Author
Name: M. W. Pawlak
Signature
Organization/Charge Code 16E00/KB64D

7. Abstract

The purpose of this report is to compile the data generated during the Fiscal Year (FY) 1996 annual tests and inspections performed on the Beneficial Uses Shipping System (BUSS) cask. FY 1996 testing was performed because the first of several FY 1995 tests expired on October 18, 1995. In addition to compiling the generated data, this report will verify that the testing criteria identified in section 8.2 of the BUSS Cask Safety Analysis Report for Packaging (SARP), was met.

Section 8.2 "Maintenance and Periodic Inspection Program" of the BUSS Cask SARP (Ref. 4.1) requires that the following tests and inspections be performed on an annual basis:

- Hydrostatic pressure test
- Helium leak test
- Dye penetrant test on the trunnions and lift lugs
- Torque test on all permanent bolts
- Impact limiter inspection and weight test

The results of the FY 1996 annual testing of the BUSS Cask met the SARP criteria defined in section 8.2 of the BUSS cask SARP.

8. RELEASE STAMP

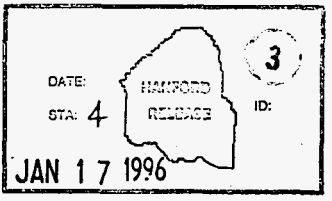

Table of Contents

List of Tables

1.0 Introduction

The BUSS Cask Model R-1 is a type B shipping container used for shipment of radioactive cesium-137 and strontium-90 capsules to Waste Encapsulation and Storage Facility (WESF). The BUSS Cask body and lid are each one-piece forging fabricated from ASTM A473, Type 304 stainless steel. The primary purpose of the BUSS Cask is to provide shielding and confinement as well as impact, puncture, and thermal protection for the capsules under both normal and accident conditions.

The purpose of this report is to compile the data generated during the Fiscal Year (FY) 1996 annual tests and inspections performed on the Beneficial Uses Shipping System (BUSS) cask. FY 1996 testing was performed because the first of several FY 1995 tests expired on October 18, 1995. In addition to compiling the generated data, this report will verify that the testing criteria identified in section 8.2 of the BUSS Cask Safety Analysis Report for Packaging (SARP), Reference 4.1, was met.

2.0 Discussion/Summary

Section 8.2 "Maintenance and Periodic Inspection Program" of the BUSS Cask SARP (Ref. 4.1) requires that the following tests and inspections be performed on an annual basis:

- Hydrostatic pressure test
- Helium leak test
- Dye penetrant test on the trunnions and lift lugs
- Torque test on all permanent bolts
- Impact limiter inspection and weight test

To meet the requirements of BUSS cask annual testing and inspections Preventative Maintenance (PM) procedures, operating procedures and Preventative Maintenance/Surviellance (PM/S) data sheets were established. PM procedure 2C23027, "BUSS Cask Torque Test" was approved and completed to document the required torque testing on the BUSS cask and designated trailer. PM procedure 2C23026, "BUSS Cask Impact Limiter Inspection" was approved and completed to document the required BUSS cask impact limiter inspection. Operating Procedure EO-140-021, "Perform Annual Test of BUSS Cask" and PM/S data sheet, loop number 2C-00097, were approved and completed to document the required testing for hydrostatic, helium leak and dye penetrant of the trunnions and lift lugs.

Table 1 lists the test or inspection, the frequency the test must be performed, the FY 1996 completion period, and the next due date. All testing was performed by Westinghouse Hanford Company (WHC) personnel.

Table 1: Periodic Inspection Table

BUSS Cask Periodic Inspection and Testing			
Test or Inspection	Frequency	Completion Period	FY 1996 Due Date
1. Hydrostatic test	Annual	November 28, 1995	November 1996
2. Helium leak test	Annual	December 01, 1995	December 1996
3. Dye penetrant of trunnions and lift lugs	Annual	November 29, 1995	November 1996
4. Bolt torque test	Annual	October 12, 1995 - December 4, 1995	October 1996
5. Impact limiter inspection and weight test	Annual	October 4, 1995 - December 4, 1995	October 1996

2.1 Hydrostatic Testing

The BUSS Cask hydrostatic testing was completed on November 28, 1995. Appendix A contains the data from the work package which consists of the calibration data sheet, operating procedure and completed data sheets for EO-140-021 "Perform Annual Test of BUSS Cask".

SARP Requirements: There shall be no visible leakage. In addition, WHC used the criteria from Section 8.1.3 of the initial testing of the cask: There shall be no pressure decrease greater than 0.5 psig.

Test Results: The cask cavity was pressurized for 30 minutes. The lid, upper port and lower port seal areas were observed periodically through out the 30 minute period with no indications of any leakage. The pressure decay over that time was +2.5 psig. The results of this test met the SARP criteria.

2.2 Helium Leak Testing

The helium leak testing was completed on December 01, 1995. Appendix B contains the data from the work package which consists of the Non-Destructive Examination (NDE) Leak Test Procedure and Test Report.

SARP Requirements: The cask assembly shall have a leak rate of less than 1.0×10^{-5} atm-cc/sec.

Test Results: The containment boundary test determined that leak rate was to the sensitivity of the leak detector (6.7×10^{-11} atm-cc/sec). The leak test of the lid seal, upper port cover, and lower port cover was at 2.3×10^{-7} atm-cc/sec. The results of this test met the SARP criteria.

2.3 Dye Penetrant of Trunnions and Lift Lugs

The dye penetrant test of the trunnions and lift lugs was completed on November 29, 1994. Appendix C contains the data from the work package which consists of the NDE Penetrant Procedure, Test Report and the Sandia National Laboratories (SNL) inspection criteria from the BUSS cask maintenance manual.

SARP Requirements: There shall be no cracks detected on the trunnions or lift lugs.

Test Results: There were no cracks detected on the trunnions or lift lugs using dye penetrant for the inspection. The results of this test met the SARP requirements.

2.4 Bolt Torque Test

The bolt torque testing was initiated on October 12, 1995 and completed on December 04, 1995. Appendix D includes the work package and PM procedure which lists the permanent bolts and the torquing requirements based on the bolt design values.

SARP Requirements: All permanent bolts shall be torqued to their design values.

Test Results: All the bolts were removed and inspected. The bolts were installed and torqued to their design values. Quality Control (QC) verified the calibration of the torque wrenches and witness the final torquing sequences. The results of this test met the SARP requirements.

2.5 Impact Limiter Inspection and Weight Test

The impact limiter inspection and weight test was initiated on October 04, 1995 and completed on December 04, 1995. Appendix E contains the work package and the PM procedure which inspects and weighs the BUSS cask impact limiters.

SARP Requirements: The impact limiters shall pass a visual inspection and the weight of each limiter shall not change from its original value more than -1% or +3% of the foam weight.

Test Results: Minor damage was detected and determined to be attributed to the normal wear for use of the shipping package. No corrective maintenance was required as a result of the inspection. The results of this inspection met the SARP criteria.

Impact limiter S48929-001 weighed 3022 lbs, which is 0.53% more than its original weight of 3006 lbs. Impact limiter S48929-002 weighed 3023 lbs, which is 0.97% more than its original weight of 2994 lbs. The results of this testing met the SARP criteria.

3.0 Conclusion

The results of the FY 1996 annual testing of the BUSS Cask met the SARP criteria defined in section 8.2 of the BUSS cask SARP (Ref 4.1).

4.0 References

4.1 SAND83-0698 TTC-0430, Rev. 4, May 1993, Beneficial Uses Shipping System (BUSS) Cask Safety Analysis Report for Packaging (SARP), D.R. Bronowski et. all, Sandia National Laboratories.

Appendix A: Hydrostatic Test Data

J-2 WORK REQUEST (N120)

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New Request Num 11800

1. Document Number 2B-95-01013
2. Work Item Title MAINTENANCE SUPPORT ANNUAL TESTING BUSS CASK

3. System C99R *BUSS-PM/CBRS/REP POOL EQ&F/G M*

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Page 436
WHC-SD-WM-RRR-010 Rev. 0

4. Components

Component Number	Name
N/A	

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Temporary Number	Name
USA-9511-B-U	

5. Location

Facility 2C *WESF*		
Bldg/Rm 225B	Other 225BE	Other

6. Associated Components

Component Number	Name
N/A	

	Date	Organization
7. Originator Name SAUERESSIG,PT	09/26/95	16800
Telephone No. 372-0071 MSIN S6-65		

8. Charge Code KBD5B

9. Work Item Description

MAINTENANCE SUPPORT FOR ANNUAL TESTING OF THE BUSS CASK. PMS 2C-00097 DATA SHEET REQUIRED FOR NDE HELIUM LEAK TEST OF CASK.

	Signature	Date
10. Operations Review		

11. Priority 2
12. Phase Designator OCT95 *SCHEDULED FOR OCTOBER 1995*
13. Correct Maint. Assessment N
14. Personnel Safety Related N
15. Mode IN

APPROVAL DESIGNATOR
NA

16. Resolution/Retest

MAINTENANCE TO SUPPORT ANNUAL HYDROSTATIC TESTING OF THE BUSS CASK ACCORDING TO OPERATING PROCEDURE EO-140-021, "PERFORM ANNUAL TESTING OF BUSS CASK".

NOTE: HYDROSTATIC TESTING MUST BE PERFORMED PRIOR TO HELIUM MASS SPECTROMETRY.

MAINTENANCE TO SUPPORT ANNUAL TESTING FOR THE BUSS CASK FOR PROCEDURES # NDT-LT-6000 (CURRENT REVISION).

J-2 WORK REQUEST (N120)

New Request Num 11800
1. Document Number 2B-95- 1013 FI JY 10/23/95
2. Work Item Title MAINTENANCE SUPPORT ANNUAL TESTING BUSS CASK

THE PROCEDURE IS FOR HELIUM MASS SPECTROSCOPY.

INCLUDED IN THE ANNUAL TESTING ARE THE FOLLOWING PMS:

2C23026, BUSS CASK IMPACT LIMITER ANNUAL INSPECTION, (2B-95-00988)
2C23027, BUSS CASK TORQUE TEST (2B-95-00989)
2C23041, TRANSPORTATION SKID INSPECTION (2B-95-00990)
2C24010, BUSS CASK LEAK TEST FITTING MAINTENANCE (2B-95-00993)
2C24011, QUICK CONNECT VALVE MAINTENANCE (2B095-009940)

THE PMS LISTED ABOVE ARE TO BE DONE IN CONJUNCTION WITH THE HYDROSTATIC TESTING AND/OR LEAK TESTING OF THE BUSS CASK.

NOTE: MILLWRIGHTS WILL BE REQUIRED TO REMOVE THE TRUNNIONS AND LIFT LUGS FOR THE NDE EVALUATION. THIS WILL BE PERFORMED WITH INSTALLATION OF GUIDE PINS FOR REMOVAL AND INSTALLATION OF THE TRUNNIONS.

COORDINATION OF THE ANNUAL TESTING WILL BE PERFORMED BY THE PIC WITH ASSISTANCE FROM THE COGNIZANT ENGINEER.

See WCN 01. JY 12/1/95

17. PIC STEEL,MD
18. PIC Org. MAINTENANCE

		Signature	Date
19.	Resolution By	Paul T Saueressig	9/26/95

20. Plant Forces Work Review Required N Number N/A

21. Resources Required

Res Code	Description	No.	Est Hrs	Act Hrs
23	MILLWRIGHT	2	08	
24	PIPEFITTER	1	24	
54	RADIOLOGICAL CONTROL TECHS	1	4	
04	NUCLEAR OPERATOR	1	16	
32	CRANE OPERATOR	1	8	
NDE	NON-DESTRUCTIVE ENGINEERING	2	16	

	Signature	Date
22. Cognizant Engineer	Paul T Saueressig	9/26/95
23. Cognizant Manager	ED Robbins by [illegible]	9/26/95

24. Reference Documents

	Type
NDT-LT-6000	PROC
EO-140-021	PROC

Appendix A
Page 2
WHC-SD-WM-TI-732 Rev. 0

Signature

PLANT OPERATING PROCEDURE

WESF

EO-140-021

Revision B
Mod 0

Perform Annual Test of BUSS Cask

Approval Designator
S,Q

Prepared by:	Cog Engineer	P. T. Saueressig	08/09/95
Approved by:	Cog Engineer	P. T. Saueressig	09/20/95
	Cog Engineer Mgr	E. D. Robbins	08/10/95
	Safety	W. P. Nelson	08/10/95
	Quality Assurance	M. A. Hill	08/10/95
Validated by:	Operations	G. L. Garman	07/11/95
Release By:	Operations Manager	D. K. Smith	09/26/95

(Note: Original signatures on DARF, BP-2 & BP-3)

RELEASE DATE: 09/26/95

LIST OF EFFECTIVE PAGES

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1-32	Technical	B-0

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LIST OF FIGURES

LIST OF DATA SHEETS

1.0 PURPOSE and SCOPE

This procedure provides instructions for performing the annual test of the Beneficial Uses Shipping System (BUSS) Cask containment boundary and port and lid seals.

The tests are performed on an annual basis or before returning the cask to service if it has not been used in more than one year.

2.0 REFERENCES

The following references are required to be inhand to perform this procedure.

The following procedure and data sheet:

BUSS Cask Hydrostatic Test Data Sheets

3.0 PREREQUISITES

3.1 Personnel Requirements

Operators
Millwrights
Pipefitters
Non-Destructive Examination Technician

3.2 Tools and Supplies

- BUSS Cask
- New Port and Lid Seal Assemblies with Helicoflex Seal Components
- Hydrostatic Plumbing Assembly (Part No. R35032-100)
- Port Leak Test Plumbing Assembly (Part No. R32035-200)
- Port Valve Tool (Part No. SS94921)
- Port Test Cover (Part No. S94924)
- Vacuum Pump
- Water Vapor Trapping System (If Needed)
- Manual or Power-operated Hydraulic Pump
- Compressed Air Supply
- 0 to 100 psig Pressure Gage, 1 psig increments
- 0 to 1000 Torr Pressure Transducer
- Apparatus for Lifting and Suspending BUSS Cask Lid
- 3/32-in. Allen Wrench and Drive Socket
- 3/16-in. Allen Wrench and Drive Socket
- 3/4-in. Allen Wrench and Drive Socket
- 12 Point, 1-5/8 Socket
- Appropriately-Sized Torque Wrenches, Allen Wrenches and Hex Drivers
- Small Screwdriver
- Lint-free Wipes
- Alcohol
- Apiezon L Grease or equivalent High Vacuum Grease
- Neolube No.1 Lubricant

- Nylon Sling (If Needed)
- Wooden Lid Stand.

3.3 Prestart Conditions

[1] The BUSS Cask has been moved to the crane pad and released by RCT for testing to be initiated. The cask is empty and disassembled and situated such that testing can be performed.

[2] Personnel involved in leak testing the cask should be thoroughly familiar with helium mass spectrometer leak detection systems and with the standards and practices defined in ANSI N14.5.

[3] Pressure monitoring equipment has been calibrated.

[4] A clean, well-lighted work-surface is available.

4.0 PRECAUTIONS AND LIMITATIONS

o Procedure compliance is mandatory.
IF the conditions or normal operations deviate from the prescribed steps within this procedure, OR steps can not be performed as written,
THEN ensure the system is in a stable configuration,
AND notify management.

o Sections 5.1 and 5.2 procedure action steps will be done in its entirety by the millwrights unless otherwise specified. All other sections of the procedure action steps are to be performed by an Operator unless otherwise specified prior to each step.

4.1 Operational Safety Requirements - OSR

o Non-Applicable.

4.2 Warnings and Cautions

o Be aware the lid weighs approximately 1500 lbs. Take appropriate safety measures to prevent swinging or dropping the lid while the seal is being replaced.

o The lid may be inverted and placed on a suitable work surface by following good rigging practice. A non-marring (i.e., Nylon) sling may be used through a lid attachment bolt hole to perform this task. The lid, seal assembly and retention system are detailed in figure 4.

o Lid bolt torquing may cause the water-filled cask cavity to be pressurized to above 100 psig unless the pressure is monitored and relieved during torquing. Pressures above 100 psig will damage the pressure gages.

- Exercise extreme care during the seal removal and replacement operations to prevent damaging the sealing surface of the port cover.
- Exercise extreme care while removing and replacing the seal to prevent damaging the sealing surface of the lid.
- Use only hand operations to install the lid bolts. Assisted tightening with the jacking screws extended will damage the cask body and lid.
- Operation of the pump without adequate pressure relief may result in damage to the pressure gages.

5.0 INSTRUCTIONS

5.1 Install New Helicoflex Seals on Port Covers

NOTE

- RCT survey and release is required prior to removal of port covers.
- Initial replacement of the upper port Helicoflex seal may be omitted as directed by Engineering. Installation of new seals on both port covers (upper and lower) is to be performed per this section. However, it will not be performed for the lower port at the same time as for the upper port.

[1] PLACE the port cover on a clean, well-lighted work surface with the seal facing up.

NOTE

The port cover, seal assembly and retention system are detailed in Figure 1.

[2] USE a 3/32-inch Allen wrench to loosen the three cap screws and secure the seal assembly to the port cover.

[3] HOLD the seal assembly and prevent sliding of the port cover during remove the screws and their accompanying seal retainers.

CAUTION

Exercise extreme care during the seal removal and replacement operations to prevent damaging the sealing surface of the port cover.

[4] LIFT the seal assembly from the cover.
IF the assembly should bind on the locating pins,
THEN gently pry loose by using a small screwdriver at the outer circumference.

[5] CLEAN the seal surface with a lint-free cloth and alcohol.

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5.1 Install New Helicoflex Seals on Port Covers (continued)

[6] INSPECT the mounting-hole threads (threaded inserts) for signs of wear, damage or looseness.
IF any damage or looseness is found,
THEN notify supervision and engineering.

[7] REMOVE the seal assembly from the stainless steel spacer.

NOTE

The metallic seal portion of is held in place by the elastomeric O-ring.

[a] HOLD the assembly such that the thumbs are located on the replaceable seal assembly.

[b] EXERT thumb pressure until the seal assembly pops loose from the spacer. See Figure 2.

NOTE

Elastomeric O-rings have a limited shelf life. Administrative controls must be in place to insure that out-of-date O-rings are not used. Five years from date of manufacture (cure date) is the recommended maximum shelf-life.

[ ]QC [8] RECORD the expiration date of the elastomeric O-ring, as labeled on the packaging of the new seal, and request QC verification on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

[9] UNPACKAGE a new port seal assembly.

[a] REMOVE the elastomeric O-ring from the Helicoflex component and set aside.

[ ]QC [b] INSPECT visually the outer surfaces of the copper jacket for dings or scratches. Do not use the seal if damaged. Request QC verification on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

[c] CLEAN the Helicoflex seal using lint-free wipes dampened with alcohol.

5.1 Install New Helicoflex Seals on Port Covers (continued)

[10] LUBRICATE the elastomeric O-ring with a small amount of vacuum grease.

[a] WIPE the O-ring to remove the excess grease.

[b] REINSTALL the O-ring to the Helicoflex component.

[11] INSTALL a new seal assembly in the spacer ring.

[a] POSITION one side of the seal assembly into the groove in the inside diameter of the spacer. See Figure 3.

[b] USE the thumb and forefinger of each hand to pinch around the assembly and seat the O-ring in the spacer groove.

[c] FEEL around the full circumference of the O-ring on both sides of the assembly to assure that the O-ring is fully and evenly set.

NOTE

Any waviness between the exposed surface of the O-ring and the spacer indicates that the O-ring is not properly set in the spacer groove.

[d] USE thumb pressure on high spots to correct any misalignment.

NOTE

Use of alcohol on the elastomeric seal will remove the applied grease. This could adversely affect the performance of the seal assembly when tested.

[12] CLEAN the Helicoflex component of the assembly again.

[a] USE a lint-free wipe dampened with alcohol.

[b] WIPE following the arc of the seal.

[c] AVOID wetting the elastomeric seal with alcohol.

[13] ORIENT the seal assembly above the cover so the countersunk features for the retainers are facing away from the cover.

[14] PLACE the seal assembly carefully onto the port cover, engaging the three locating pins.

5.1 Install New Helicoflex Seals on Port Covers (continued)

[15] HOLD the assembly in position and loosely install the three retainers and mounting screws.

[16] HOLD the seal assembly in place and progressively tighten the three attachment screws. Ensure that the seal is evenly drawn towards the cover and does not bind on the locating pins.

[17] USE an appropriate-size torque wrench and a 3/32-in. Allen drive socket to tighten the mounting screws to 12 in-lb.

5.2 Install New Helicoflex Seal on Cask Lid

WARNING 1

Be aware the lid weighs approximately 1500 lbs. Take appropriate safety measures to prevent swinging or dropping the lid while the seal is being replaced.

WARNING 2

The lid may be inverted and placed on a suitable work surface by following good rigging practice. A non-marring (i.e., Nylon) sling may be used through a lid attachment bolt hole to perform this task. The lid, seal assembly and retention system are detailed in figure 4.

WARNING 3

RCT survey and release is required prior to removal of lid.

[1] REQUEST the crane operator to place the lid on the wooden stand.

[2] USE a 3/16-inch Allen wrench to loosen the six cap screws attaching the seal assembly to the flange of the lid.

NOTE

Removing the lid seal retainer is a two-person operation.

[3] HOLD the seal in place (i.e. from sliding on or bumping against the lid), remove the screws and associated retainers. Place the screws and retainers where they will not become lost or damaged.

5.2 Install New Helicoflex Seal on Cask Lid (continued)

> **CAUTION**
>
> Exercise extreme care while removing and replacing the seal to prevent damaging the sealing surface of the lid.

[4] LIFT the seal assembly from the lid flange.
IF the assembly should bind on the locating pins,
THEN gently pry loose by using a small screwdriver at the outer circumference.

[5] CLEAN the seal surface with a lint-free cloth and alcohol.

[6] INSPECT the six mounting-hole threads (threaded inserts) for signs of wear, damage or looseness.
IF any damage or looseness is found,
THEN notify supervision and engineering.

[7] REMOVE the seal assembly from the stainless-steel spacer. The metallic seal portion is held in place by the elastomeric O-ring.

[a] HOLD the assembly so the thumbs are located on the replaceable seal assembly.

[b] EXERT thumb pressure until the seal assembly pops loose from the spacer. See Figure 5.

> **NOTE**
>
> Elastomeric O-rings have a limited shelf life. Administrative controls must be in place to insure that out-of-date O-rings are not used. Five years from date of manufacture (cure date) is the recommended maximum shelf-life.

[ ]QC [8] RECORD the expiration date of the elastomeric O-ring, as labeled on the packaging of the new seal, and request QC verification on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

5.2 Install New Helicoflex Seal on Cask Lid (continued)

[9] UNPACKAGE a new lid seal assembly.

[a] REMOVE the elastomeric O-ring from the Helicoflex component and set aside.

[ ]QC [b] INSPECT visually the outer surfaces of the copper jacket for dings or scratches. DO NOT use the seal if damaged. Request QC verification on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

[c] CLEAN the Helicoflex seal using lint-free wipes dampened with alcohol.

[10] LUBRICATE the elastomeric O-ring with a small amount of vacuum grease.

[a] WIPE the O-ring to remove the excess grease.

[b] REINSTALL the O-ring to the Helicoflex component.

[11] INSTALL a new seal assembly in the spacer ring.

[a] POSITION one side of the seal assembly into the groove in the inside diameter of the spacer. See Figure 6.

[b] USE the thumb and forefinger of each hand to pinch around the assembly to seat the O-ring in the spacer groove.

[c] FEEL around the full circumference of the O-ring on both sides of the assembly to assure that the O-ring is fully and evenly set.

NOTE

Any waviness between the exposed surface of the O-ring and the spacer indicates that the O-ring is not properly seated in the spacer groove.

[d] USE thumb pressure on high spots to correct any misalignment.

5.2 Install New Helicoflex Seal on Cask Lid (continued)

NOTE

Use of alcohol on the elastomeric seal will remove the applied grease. This could adversely affect the performance of the seal assembly when tested.

[12] CLEAN the Helicoflex component of the assembly again.

[a] USE a lint-free wipe dampened with alcohol.

[b] WIPE following the arc of the seal.

[c] AVOID wetting the elastomeric seal with alcohol.

[13] ORIENT the lid assembly above the lid flange such that the countersunk features for the retainers are facing away from the lid.

[14] PLACE the seal assembly carefully onto the lid flange, engaging the three locating pins.

[15] HOLD the assembly in position and install the six retainers and mounting screws.

[16] HOLD the seal assembly in place and progressively tighten the mounting screws. Ensure that the seal is evenly drawn towards the cover and does not bind on the locating pins.

[17] USE an appropriate torque wrench and a 3/16-inch Allen drive socket to tighten the mounting screws to 100 in-lb.

5.3 Prepare Cask for Hydrostatic Test

NOTE

Figure 7 shows the hydrostatic test set-up.

[1] RECORD the date and cask serial number on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

5.3 Prepare Cask for Hydrostatic Test (continued)

Millwrights
[2] INSTALL port cover in upper port, if not already installed.

[a] CENTER over the upper port in the cask body, aligning the six mounting holes.

[b] HOLD the cover from moving while installing the six mounting bolts and washers.

[c] USE an appropriate torque wrench and a 3/4-in. socket to incrementally tighten the bolts in a crossing pattern to 10, 30, and then 60 ft-lb.

[d] TORQUE the pattern again at 60 ft-lb.

NOTE

- The basket should be removed from the cavity of the cask prior to the addition of water, this will prevent retention of water during the drying process.
- This water level will be at the approximate centerline of the penetration of the upper port into the cask interior and will be approximately 35 gals.

[3] FILL the empty cask payload cavity with demineralized/deionized water to a level within the top and bottom of the upper port penetration.

[4] RECORD the start time on water temperature stabilization with the BUSS cask on the HYDROSTATIC TEST DATA SHEET.

Millwrights
[5] INSTALL the three lid guide pins.

Millwrights
[6] EXTEND the three lid jack screws completely by turning clockwise with a 3/4-in. socket wrench.

Millwrights
[7] LUBRICATE the twelve lid bolts with Neolube No.1 lubricant. Ensure that a thin coating of lubricant is on the threads and bearing surface of the bolt heads. Allow to dry completely.

5.3 Prepare Cask for Hydrostatic Test (continued)

Crane Operator

[8] REQUEST the crane operator to use the 25 ton crane to install the lid.

[a] PLACE the lid on the cask, expelling the excess water.

[b] INSTALL the lid bolts and tighten by hand.

[c] REMOVE the two lid leak-check fitting plugs.

> CAUTION
>
> Use only hand operations to install the lid bolts. Assisted tightening with the jacking screws extended will damage the cask body and lid.

[9] ATTACH a suitable hose to supply demineralized water to the hydrostatic testing fixture.

> CAUTION
>
> Operation of the pump without adequate pressure relief may result in damage to the pressure gages.

[10] PURGE the hydrostatic testing fixture of air by pumping water through the fixture using its hand-operated pump while depressing the quick connect valve to allow water to flow through it.

[11] MONITOR the pressure and operate the pump and quick connect valve as required to maintain pressure below 30 psig.

[12] CLOSE the hydrostatic testing fixture valves.

[13] CONNECT the hydrostatic testing fixture to the cask lower port as shown in Figure 7 by inserting into the quick-connect valve until a snap is felt.

[ ]QC [14] RECORD pump and 0-100 psig pressure gage information (installed to testing fixture), record calibration of gage, and request QC verification on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

5.3 Prepare Cask for Hydrostatic Test (continued)

Millwrights
[15] LOWER the lid using the jack screws.

[a] USE a 3/4-inch socket wrench to turn each jack screw one quarter turn counter-clockwise.

[b] CONTINUE around the screw pattern until the indicator pins are flush with the top of the jack screw.

Millwrights
[16] REMOVE the three lid guide pins.

WARNING

Lid bolt torquing may cause the water-filled cask cavity to be pressurized to above 100 psig unless the pressure is monitored and relieved during torquing. Pressures above 100 psig will damage the pressure gages.

Millwrights
[17] TORQUE the lid bolts as follows:

[a] USE an appropriate sized torque wrench and a 12 point, 1-5/8-inch socket, to torque the bolts initially to 50 ft-lbs in the following sequence:

1, 7, 4, 10, 2, 8, 5, 11, 3, 9, 6, 12

NOTE

The bolt numbers are marked on the lid surface adjacent to each bolt hole.

[b] MONITOR the pressure gage during the lid bolt torquing and operate the pump bypass valve as required to maintain pressure between 10 and 30 psig during step [16] [c].

[c] INCREASE the lid bolt torque to 100 ft-lb, 200 ft-lb, 600 ft-lb, 800 ft-lb, 1000 ft-lb, and then a final torque of 1,250 ft-lb, following the above sequence at each torque increment.

[d] MAKE two additional passes at 1,250 ft-lb value repeating the above torquing pattern.

5.3 Prepare Cask for Hydrostatic Test (continued)

[18] REMOVE excess water out of the closure head/cask body groove and lid bolt holes and dry the cask exterior.

Pipefitter
[19] APPLY air to one of the lid leak test fittings to force the water out of the leak test cavity.

5.4 Perform Hydrostatic Test

NOTE

The variance in pressure will be monitored during the 30-minute test within the sensitivity (1 psig) of the 0-100 psig pressure gage.

[1] OPEN the valves to the pump.

[2] REQUEST pipefitters to operate the pump to slowly increase the pressure to 25, 50, then 70 psig.

[a] STOP after each increment and observe the cask, lid, upper port cover, and lower port quick-connect valve for signs of water leakage.

[b] IF leakage is observed,
THEN depressurize the cask, removing the leaking component, and inspect the seal and sealing surfaces for damage or foreign matter.

[3] VALVE off pump when the test pressure of 70 psig is reached. Check and record the time on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

[a] ALLOW the cask to set for a minimum period of two hours since the addition of water to cask to allow the water temperature to stabilize.

[b] REQUEST QC to record end stabilization time after a minimum of two hours, record the time and request QC verification on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

[ ]QC [4] OPEN the valve to the pump, raise the test pressure to 75 (-0, +5) psig, and close the valve. Request QC to verify and record the cavity pressure and start time on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

5.4 Perform Hydrostatic Test (continued)

[ ]QC [5] OBSERVE the pressure gage for 30 minutes. There should be no drop in pressure greater than 1/2 psig during that interval. A pressure drop indicates a leak. Observe the lid and ports for indications of leakage during the 30-minute test. Request QC verification and record on BUSS CASK HYDROSTATIC TEST DATA SHEET.

[ ]QC [6] REQUEST QC verification and record the cavity pressure and time at the end of the test and any pressure decay on the BUSS CASK HYDROSTATIC TEST DATA SHEET.
IF the pressure decreases and no exterior leakage is observed there are several possibilities:

- Air is trapped in the system, or
- The hydrostatic test fixture is leaking, or
- Leakage is occurring between the metallic sealing element and the elastomeric sealing element but has not filled the test cavity enough to vent through the leak test fitting, or
- The test water was warmer than the cask and cooling reduced its volume,

THEN repeat steps [4] through [6].

[7] IF the event of a failed test (i.e. pressure decay) without any visible indications of water leakage,
THEN the cask should be re-tested. Before re-testing:

- Check for test equipment line and/or valve leaks. Allow additional time for water temperature to come to equilibrium with that of the cask.

IF water at a flange is observed,
THEN remove the component, inspect the sealing surfaces, replace the seal with a new seal and re-test.

NOTE

A second failure, as indicated by the leakage, is cause for remedial action on the sealing components.

[8] REPORT a water leak at the lower port quick-connect valve to supervisor and engineering.

[9] RECORD the final disposition of test and any comments on the BUSS CASK HYDROSTATIC TEST DATA SHEET.

5.5 Prepare Cask for Leak Test

NOTE

Step [12], Vacuum drying of the cask lid leak test cavity, can be performed at any time during this section preceding step [14], helium leak testing.

[1] CLOSE all three hydrostatic test fixture valves.

[2] ATTACH the hydrostatic test fixture to a hose routed to a drain to Tank-100.

[3] REMOVE the upper port cover from the cask by removing the attachment bolts.

[4] REMOVE the upper port seal spacer from the port cover by removing the three mounting screws.

[5] REMOVE the helicoflex seal from the upper port seal spacer.

[6] REMOVE the elastomeric O-ring from the metallic portion of the seal assembly.

[7] REINSTALL the upper port cover per Sections 5.1 and 5.3 of this procedure, with the elastomeric O-ring but omitting the metallic portion of the seal assembly.

[8] DRAIN and blow-down the cask as follows:

[a] REMOVE the upper port leak test fitting plug.

[b] CONNECT a regulated breathing air bottle to the upper port leak test fitting.

[c] OPEN the by-pass valve on the hydrostatic test fixture to drain the cask ~~to the Tank-100 drain~~. See PCA EO-595

[d] OPEN the breathing air bottle valve to pressurize and force water from the cask cavity.

[e] CONTINUE to apply breathing air to blow down the cask cavity as directed by Engineering.

[f] DISCONNECT breathing air supply and replace the upper port leak test fitting plug when drainage and blow-down is complete.

[9] REMOVE the hydrostatic test fixture from the lower port.

5.5 Prepare Cask for Leak Test (continued)

NOTE

Allow the cask cavity must be completely drain prior to installing upper port cover with the complete seal assembly and vacuum drying cask. This may be accomplished by air flow through the upper port, cavity and out the lower port.

Millwrights
[10] PREPARE upper and/or lower port seal per section 5.1 of this procedure.

Millwrights
[11] INSTALL the upper and/or lower port cover per section 5.3 step [2] of this procedure.

SPENT SEALS →

[12] VACUUM dry the cask lid leak test cavity as follows:

[a] REMOVE one of the leak test fitting plugs and connect a vacuum pump and vacuum gage/transducer capable of reading 1 torr.

[b] ENERGIZE vacuum pump and vacuum dry the leak test cavity.

[c] DE-ENERGIZE and disconnect the vacuum pump and vacuum gage/transducer.

[d] REPLACE the leak test fitting plug.

[13] VACUUM dry the cask cavity as follows:

[a] INSTALL the lower port leak test plumbing assembly with a vacuum gage/transducer capable of reading 1 torr.

[b] CONNECT vacuum pump to the lower port test fixture.

[c] ENERGIZE vacuum pump and vacuum dry the cask.

[d] CLOSE the vacuum pump valves when the vacuum pump torr indicator reads 5 torr or less.

[e] MONITOR the indicator for 15 minutes.
IF the pressure rise does not exceed 2 torr at the end of 15 minutes,
THEN the cask is considered dry.
IF a pressure increase of more that 2 torr is observed,
THEN check the system for leaks.

[f] SHUT off vacuum pump and open vacuum pump valves. Allow system atmospheric pressure

[g] DISCONNECT vacuum pump from leak test plumbing assembly. Remove spare o-ring only install upper.

[14] REQUEST NDE personnel to perform leak check according to leak test procedure NDT-LT-6000 (current revision).

[15] REQUEST a copy of the test report generated from leak test procedure NDT-LT-6000. Record and sign BUSS CASK HYDROSTATIC TEST DATA SHEET. The leak test data sheets shall be maintained with the completed data sheets from this procedure.

6.0 FINAL CONDITIONS

None required.

7.0 RECORDS REQUIRED

[1] RETURN completed data sheets to the Shift Manager for review and retention.

13 [g]
NOTE:
After passing vacuum dryness test allow pumps to run for a minimum of sixteen hours or as directed by Engineering.

(See Controlled Copy of Procedure for Figure)

Figure 1: Port Cover and Seal Detail

(See Controlled Copy of Procedure for Figure)

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Figure 2: Port Cover and Helicoflex Seal Removal

(See Controlled Copy of Procedure for Figure)

Figure 3: Port Cover and Helicoflex Seal Replacement

(See Controlled Copy of Procedure for Figure)

Figure 4: Lid Seal Detail

(See Controlled Copy of Procedure for Figure)

Figure 5: Lid Helicoflex Seal Removal

(See Controlled Copy of Procedure for Figure)

Figure 6: Lid Helicoflex Seal Replacement

(See Controlled Copy of Procedure for Figure)

Figure 7: Hydrostatic Test Configuration

BUSS CASK HYDROSTATIC TEST DATA SHEET
(Page 1 of 4)

Operator
Initial
Each Step

3.3 Prestart Conditions

[1] The BUSS Cask has been moved to the crane pad and released by RCT for testing to be initiated. The cask is empty and disassembled and situated such that testing can be performed.

Paul T Swenessa / 11/28/95
Supervision Signature / Date

[2] Personnel involved in leak testing the cask should be thoroughly familiar with helium mass spectrometer leak detection systems and with the standards and practices defined in ANSI N14.5.

Paul T Swenessa John Kent / 11/28/95
NDE Level III Signature / Date

[3] Pressure monitoring equipment has been calibrated.

Paul T. Swenessa / 11/28/95
Supervision Signature / Date

[4] A clean, well-lighted work-surface is available.

Paul T Swenessa / 11/28/95
Supervision Signature / Date

5.0 Instructions

5.1 Install New Helicoflex Seals on Port Covers

* [8] 4/97 Seal#10 — Record expiration date of upper port seal O-ring

[signature] / 11/29/95
Quality Control Signature / Date

4/97 Seal#15 — Record expiration date of lower port seal O-ring

[signature] / 11/29/95
Quality Control Signature / Date

* Torque Wrench #813-88-01-047 Due Date 11/9/96
Torqued to 10 30 60 ft-lbs. [initials] 11/29/95

BUSS CASK HYDROSTATIC TEST DATA SHEET
(Page 2 of 4)

Operator Initial Each Step

5.1 Install New Helicoflex Seals on Port Covers (continued)

[9] [b] ✓ Visually inspect upper port seal for damage

Quality Control Signature 11/23/95 Date

✓ Visually inspect lower port seal for damage

Quality Control Signature 11/23/95 Date

5.2 Install New Helicoflex Seal on Lid

[8] 4/97 Record expiration date of lid seal O-ring

Quality Control Signature 11/23/95 Date

[9] [b] YES Visually inspect lid seal for damage

Quality Control Signature 11/24/95 Date

5.3 Prepare Cask for Hydrostatic Test

[1] 11/28/95 Record date

USA/9511/B(U) DOE Record cask serial number

Supervisor Signature 11/28/95 Date

[4] 10:20 Record start time

Supervisor Signature 11/28/95 Date

BUSS CASK HYDROSTATIC TEST DATA SHEET
(Page 3 of 4)

Operator
Initial
Each Step

5.3 Prepare Cask for Hydrostatic Test (continued)

[14] Hydro Pump Type: X Manual _____ Power Operated

Hydro Pump Mfg. Hondover Model No. 15

Pressure Gage Mfg. Ashcroft Serial No. SB0774

Cal Expiration Date 9/96 Gage Resolution 1.0 psig

Quality Control Signature 11-28-95 Date

5.4 Perform Hydrostatic Test

[3] 16:14 Record time 70 psig with pump valved isolated

16:15 Record end stabilization time (min 2 hrs)

Quality Control Signature 11-28-95 Date

[4] 76 Record cavity pressure
(minimum pressure is 75 psig)
(maximum pressure is 80 psig)

PIS Record test start time 16:15

Quality Control Signature 11-28-95 Date

[5] PIS Record no visible leakage

Quality Control Signature 11-28-95 Date

BUSS CASK HYDROSTATIC TEST DATA SHEET
(Page 4 of 4)

Operator
Initial
Each Step

5.4 Perform Hydrostatic Test (continued)

[6] 16 45 — Record test end time

30 min — Record test pressure held for minimum time is 30 minutes

78.5 psig — Record pressure end pressure

+2.5 psig — Record pressure loss over test period

Dennis L Horn / 11-28-95
Quality Control Signature Date

[10] Final Disposition:

Acceptable X Unacceptable ____

Comments: Passed did not have pressure drop. No visible leakage

5.5 Prepare Cask for Leak Testing

[16] Name (printed):	Signature: Received copy of NDT-LT-6000 test report	Initial:

BUSS CASK HYDROSTATIC TEST DATA SHEET
(Page 3 of 4)

Operator
Initial
Each Step

5.3 Prepare Cask for Hydrostatic Test (continued)

[14] Hydro Pump Type: X Manual _____ Power Operated

Hydro Pump Mfg. Henderer Model No. 15

Pressure Gage Mfg. Ashcroft Serial No. SBC774

Cal Expiration Date 9/96 Gage Resolution 1.0 psig (0-100)

[signature] / 11/28/95
Quality Control Signature Date

5.4 Perform Hydrostatic Test

[3] 13:07 Record time 70 psig with pump valved isolated

2:47 Record end stabilization time (min 2 hrs)

Dennis L Homan / 11-28-95
Quality Control Signature Date

[4] 75 PSIG Record cavity pressure
(minimum pressure is 75 psig)
(maximum pressure is 80 psig)

P/S Record test start time 13:07

Dennis L Homan / 11-28-95
Quality Control Signature Date

[5] P/S Record no visible leakage

Dennis L Homan / 11-28-95
Quality Control Signature Date

BUSS CASK HYDROSTATIC TEST DATA SHEET
(Page 4 of 4)

Operator Initial Each Step

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5.4 Perform Hydrostatic Test (continued)

[6] 13:37 — Record test end time

30 min — Record test pressure held for minimum time is 30 minutes

71 psig — Record pressure end pressure

-4 psig — Record pressure loss over test period

Quality Control Signature: Jim L Horne Date: 11-28-95

[10] Final Disposition:

Acceptable ____ Unacceptable X

Comments: Possible failure mechanism

1) Cold weather
2) Wind
3) Air in hydrostatic test fixture during pump up.

Move to millwrights shop (3885E) for stable environment. Reprimed pump (hydrostatic test fixture) with no air! No visible leakage at seals.

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5.5 Prepare Cask for Leak Testing

[18]	Name (printed):	Signature:	Initial:
15	MIKE W. TAWLAK		
11/30/95		Received copy of NDT-LT-6000 test report	
		M. L. Tawlak	12/4/95

5.5 13E 9:06 am 55 torr 9:21 am 1.02 torr JHS 11/30/95

NOTE: Allow 30 hrs. minimum for vacuum drying Cask after Hydro, Lessons Learned JHS-12/01/95

BP-2	PROCEDURE ACTION AUTHORIZATION	Tracking No. 95-141 Page 1 of 2

Procedure No.: EO-140-021 Rev: B Chg: 0 Bldg.: 225B Date Issued: 11-28-95

Title: Perform Annual Test of BUSS Cask

Initiator: P. T. Saueressig Phone: 372-0071 MSIN: S6-65 Bldg: 225B Date ______

Tech Authority (print): Same Phone: N/A MSIN: N/A Bldg: ______

Organization Name: Capsule Management Team Org Code: 16800 TPCN/WO ______

TS/OSR Related? [X]No [ ]Yes Ref.: N/A Procedure Approval Designator: [ ]D [ ]E [X]S [X]Q [ ]NA

ACTION REQUESTED/AUTHORIZED:

[ ] WRITE NEW PROCEDURE
Please provide the following information, as a minimum, in Description below.
Attach a draft if available:
- Desired reviewers/approvers/validator. (print names in APPROVAL/CONCURRENCE section below).
- OSR/TSR relationship and specifics.
- Responsible Craft.
- Equipment Name, Number, Model, Series, Manufacturer, Etc.
- Reference Drawings and Vendor Information.
- Facility Contacts.
- Level of detail
- Priority/Milestone dates

[ ] REVISE PROCEDURE per description AS A (Check One):
[ ] Temporary Change, Expires: ______
OR:
[X] Field Change - PCA # EO-00595
(Obtain approval signatures below)
(* same approvals as procedure)
OR:
[ ] Rewrite (complete revision)
OR:
[ ] Retype (Incorp. approved changes only) OR Editorial Change

USQ # : N/A

[ ] PROCEDURE CANCEL:
Provide justification in Description section.

[ ] PROCEDURE ON-HOLD:
Provide justification in Description section.

[ ] PROCEDURE REVIEW:

DESIRED VALIDATION METHOD (not required for retype or field change)
[ ] Walk-through [ ] Reference [ ] Simulation [ ] Table-top

RECALL INFORMATION: Performance Frequency: N/A Start (after procedure issue): N/A

Description (attach additional sheets as needed):
No validation required as no steps are change except where water is drained. The rack has been released by the HPT

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APPROVAL/CONCURRENCE SIGNATURES.

* Signature not required for editorial, rewrite, retype, or review. • Signature may not required for Field Change.

	Printed Name	Signature	MSIN	Date
Tech. Auth.:	See Above	Paul T Saueressig		
TA Mgr.:	M. M. Pereira	* [signature]	S6-65	11/28/95
Validation:	N/A	*		
QA:	M. A. Hill W F WITHERELL	* W Witherell	S4-59	11/28/95
HSA:	W. F. Nelson	** W F Nelson	S6-21	11/28/95
EA:	N/A	**		
Other:		**		
RELEASE AUTHORITY:	J. L. Pennock	[signature] for JLP		

Date Received: 11-28-95	Electronic Copy Date: 11-28-95	Control Copies Date:
Assigned Author: P. Saueressig	By: [signature]	By:

PROCINFO X:\FORMS\BP-2.fm (11/20/95)

PROCEDURE CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Number, Rev/Mod Number	Procedure Title
EO-140-021 B-0	Perform Annual Test of BUSS Cask
PCA Number (if applicable)	**Effective Date of Change**
EO-00595	11-28-95

Affected Page/Step	Summary of Change	Reason for Change
Page 19 Step 5.5 [8][a]	Deleted " to the tank 100 drain"	The hydrostatic test may take place in any suitable location.

(You may attach additional pages if necessary to cover all procedure changes)

I have read and understand the instructions contained in the Procedure/PCA/Change listed above as required to maintain training/certification currency.

Signature	Date	Signature	Date
J. E. Wallace	11-28-95		

(If roc

be placed on the back)

5.5 Prepare Cask for Leak Test

NOTE

Step [12], Vacuum drying of the cask lid leak test cavity, can be performed at any time during this section preceding step [14], helium leak testing.

[1] CLOSE all three hydrostatic test fixture valves.

[2] ATTACH the hydrostatic test fixture to a hose routed to a drain to Tank-100.

[3] REMOVE the upper port cover from the cask by removing the attachment bolts.

[4] REMOVE the upper port seal spacer from the port cover by removing the three mounting screws.

[5] REMOVE the helicoflex seal from the upper port seal spacer.

[6] REMOVE the elastomeric O-ring from the metallic portion of the seal assembly.

[7] REINSTALL the upper port cover per Sections 5.1 and 5.3 of this procedure, with the elastomeric O-ring but omitting the metallic portion of the seal assembly.

[8] DRAIN and blow-down the cask as follows:

[a] REMOVE the upper port leak test fitting plug.

[b] CONNECT a regulated breathing air bottle to the upper port leak test fitting.

[c] OPEN the by-pass valve on the hydrostatic test fixture to drain the cask.

[d] OPEN the breathing air bottle valve to pressurize and force water from the cask cavity.

[e] CONTINUE to apply breathing air to blow down the cask cavity as directed by Engineering.

[f] DISCONNECT breathing air supply and replace the upper port leak test fitting plug when drainage and blow-down is complete.

[9] REMOVE the hydrostatic test fixture from the lower port.

PRE-JOB SAFETY MEETING FORM

Description/Title: Hydrostatic Testing

Date: 11/28/95

k Package No.: 28-95-01013

Person in Charge (PIC): PT Sauerassig

t Aid Qualified Person: PT Sauerassig

eck Items Discussed

- [Y] Procedures/Plans to be Used — No. EO-170-021
- [Y] Applicable OSR's — No. N/A
- [Y] Radiation Work Permit — No. N/A
- [Y] Job Hazard Analysis — No. in the procedure
- [Y] Construction Permit (as needed) — No. N/A
- [Y] Additional Permits (i.e., confined space, excavation, etc.) — No. N/A
- [Y] Review All Applicable Safety Precautions and Prestart Conditions per Procedures/Plans to be used N/A
- [Y] Components Locked and Tagged N/A
- [Y] ALARA Considerations (applicable MSDS's)
- [Y] Respiratory Protection (fresh air, PAPR's, chemical filters, etc.)
- [Y] Radioactive Contamination Containment Device N/A
- [Y] Emergency Response and Actions
- [Y] Summary of Job Sequence (or steps)
- [Y] Work Area Conditions (high/low temperatures, lighting, etc.)
- [Y] All Equipment Functionally Checked and at Work Site

pecial Circumstances or COMMENTS:

hairman Signature:

Operations _____

Maintenance _____

Other Eng (Paul T Sauerassig)

Pre-Job Safety Meeting Form
ATTENDANCE ROSTER

Name	Org. Code	Payroll No.
Jesse Rumsey	16A10	56565
J.E. [illegible]	16970	64067
Dennis L Homan	16810	81600
C Kerby	16A10	6A530

BEST AVAILABLE COPY

-6000-696.2 (4/91)-(EF) GEF121

PM/S Data Sheet - Structured (P280)

Page: 1 11:10:02 26 SEP 1995

	Doc Number	PM/S Number	
1. Data Sheet Number	2B-95-01010/I	2C-00096	D/S Status OPE
Work Item Title	C/W PM/S CALIB. BUSSCA-SK-HY-DRO-GA-GE. WESF.		

2. PM/S Type 7 INSTRUMENT CALIBRATION PROGRAM
PM/S Title ANNUAL HYSDROSTATIC TEST FIXTU
PM/S Due Date 09/28/95 Frequency 365 Recall Basis 1 PERIODIC, CALENDAR DATE
Operations Rel Reqd Y PM/S Authority LOWERY,JL

Procedure Number PSCP-4-091 Title Pressure and Vacuum Gauges
Procedure Date Revision Number
Procedure Type OVERCAL

3. Component Number BUSSCA-SK-HY-DRO-GA-GE System C99R
Component Name BUSSCA-SK-HY-DRO-GA-GE
Safety Class 3 Facility 2C
Bldg/Rm 2258 Other CRANE PAD Other
Manufacturer WIKA Model 316 SS
Serial Number 280774
Reference Drawings

4. Assoc Components | Assoc PM/S | Reference Documents | Type

5. Data Sheet Body

Input Range 0 to 100 Units PSI Input M&TE Tol 0.25 %
Output Range 0 to 100 Units PSI Output M&TE Tol %

		Standards	Exp Date	Tolerance
Loop/Seq Number	T0001-2	915.31-04-023	4/96	N/A
Cal Tag Status	ACTIVE	Sust	N/A	
Comp Admin Code	REG			
Mode	N/A			

Instructions

Item	Inp Value	Out Value	Low Limit	Up Limit	As Found	I/O	As Left
CT01	0	0	-1	1	0	I	1
CT02	25	25	24	26	24.5	I	25.0
CT03	50	50	49	51	49.0	I	50.0
CT04	75	75	74	76	74.0	I	75.0
CT05	100	100	99	101	99.5	I	99.8

6. Data Sheet Complete Signature [signature] Date 9-28-95

PM/S Data Sheet - Structured (P280)

==========PM/S Data Sheet - Structured (P280)==========

Page: 2   11:10:02 26 SEP 1995

	Doc Number	PM/S Number	
1. Data Sheet Number	2B-95-01010/I	2C-00096	D/S Status OPEN
Work Item Title	C/W PM/S CALIB. BUSSCA-SK-HY-DRO-GA-GE. WESF.		

7. Res Code	Description	No.	Act Hrs
18	INSTRUMENT TECHNICIAN	1	6

8. Completed Satisfactory Y

9. Comments
~~Does Window light and alarm sound when switch is activated?~~
~~List window name and alarm locations activated below~~

Delete Questions gy 11/27/95

*HPT SURVEYED ____________ __/__/__
SIGNATURE DATE

==========PM/S Data Sheet - Structured (P280)==========

J-5

CRAFT/RESOURCE USAGE LOG AND MAINTENANCE RECORD

1. Document Number ZB-95-01010/J

Date	Turnover, Problem Description, Action Taken	Name	Craft/Resource Type	Hrs.
9/28/95	Found Gauge out of Spec's Readjusted zero to bring gauge back into Tolerance No Other Problem's Noted.	M/GH	18	6

Summary by Craft/Resource Type

Craft/Resource Type	Total Hours	Craft/Resource Type	Total Hours

SD-6000-251 (C)

Appendix B: Helium Leak Test Data

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APPENDICES

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Figure 1. Leak Test Procedure and Test Report.
(sheet 1 of 2) (A-6000-494)

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Westinghouse Hanford Company

NDE LEAK TEST PROCEDURE AND TEST REPORT
NON DESTRUCTIVE EXAMINATION
306 BLDG., 300 AREA - TEL. 376-5401

Job No.

Requestor | Company | Project/System/Work Package/Isometric No.

MSR# | Bldg. | Area

Acceptance Std. | Section | Para. | Date ☐ NA | Dwg. No. ☐ NA | Weld ☐ NA | Cleaning ☐ NA

TEST CONDITIONS

Temperature _____ Device ID _____ ☐ NA
Barometric Pressure _____ ☐ NA
Test Pressure _____ ☐ NA
Gas _____ ☐ NA
Concentration _____ ☐ NA
Other _____ ☐ NA
Bubble Solution _____ ☐ NA
Batch No. _____
Gage 1 SR4-31-04- _____ ☐ NA
Range _____
Calib. Exp. _____
Gage 2 SR4-31-04- _____ ☐ NA
Range _____
Calib. Exp. _____
Relief Valve _____ ☐ NA

TEST EQUIPMENT ☐ NA

Manufacturer _____
Mod. No. _____
Fine Range _____ x 10 _____ Atmos/sec/Div ☐ NA
Std. No. SR4-40-03 _____
Std. Leak _____ x 10 _____ Atmos/sec
Calib. Exp. _____
Medium Range _____ x 10 _____ Atmos/sec/Div ☐ NA
Std. No. SR4-40-03- _____
Std. Leak _____ x 10 _____ Atmos/sec
Calib. Exp. _____
Gross Range _____ x 10 _____ Atmos/sec/Div ☐ NA
Std. No. SR4-40-03- _____
Std. Leak _____ x 10 _____ Atmos/sec
Calib. Exp. _____

WHC PROCEDURE NO. ☐ NA

☐ NDT-LT-6000 Rev. _____
Appendix _____ Rev. _____
☐ Special Tech. No. _____

WITNESS ☐ NA

☐ NDT-LT-601 Rev. _____
☐ Other _____

SYSTEM SENSITIVITY

☐ Same as MSLD Calib. no.
Fine Range _____ x 10 _____ Atmos/sec/Div
Med. Range _____ x 10 _____ Atmos/sec/Div
Gross Range _____ x 10 _____ Atmos/sec/Div

TEST TIME

No Response Time _____ ☐ NA
No Accum. Time _____ ☐ NA
Soak Time _____ ☐ NA

Weld No., Part No., or Serial No.	Acc.	Rej	No Del ind	Comments

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Tech ☐ N. Tech | LT Level II | LT Level III Review

Date of Examination | Date | Date

- Company
- Project or system name.
- Part description and identification
- Work package number/traveler number
- Acceptance criteria
- Associated nonconformance report numbers
- Test temperature and measuring devices
- Test pressure and barometric pressure
- Gas type and concentration
- Bubble solution manufacturer and batch number
- Gage(s) standards lab number, range, and calibration expiration date
- Type of equipment used for detecting and measuring leaks
- Standard leak and expiration date of calibration
- Soak times, pressure decay time, time duration of examination
- Response time and accumulation time
- Procedure number with appendix and revision number
- Special techniques and revision number
- Work Instruction and revision number
- Any applicable data (i.e., calculations)
- Examination results
- Location of leaks
- Sketch showing method or technique setup
- Date of examination
- Examiner's name and certification level
- Interpreter's name and certification level
- NDE Level III LT Examiner (or NDE Manager) review.

Locations on the report form that are not applicable to the specific examination shall be shown as N/A (not applicable).

7.3 Records Storage

The NDE examination reports that are either lifetime or nonpermanent quality assurance records shall be officially stored in the work package or traveler. When a copy of the NDE examination report is issued to the requestor or his representative, it shall be their responsibility to insert the report into the work package or traveler. For jobs with and without work packages or travelers, NDE will retain a courtesy copy for 5 years.

8.0 REFERENCES

American Society of Mechanical Engineers, *ASME Boiler and Pressure Vessel Code, Section V, "Nondestructive Examination."*

WHC-CM-4-3, Volume 1, *Industrial Safety Manual.*
PS-2, "Compressed Gas Cylinders."
W-13, "Confined Space Entry."

time a malfunction is suspected. Records of calibration shall be maintained in accordance with the calibration program requirements.

4.2 Sealant and Marking Materials

Sealant materials, including gaskets, will exhibit closed cellular structure so that a gas cannot flow through the material. Sealant and marking materials shall be certified in accordance with NDT-GA-2000.

4.3 Connections

Metal tubing and compression fittings should be used wherever possible (minimize use of plastic or rubber hose). Metal tubing and compression fittings shall be used if required by the Code or Standard referenced by the R/I.

5.0 EXAMINATION REQUIREMENTS

5.1 Precleaning

Before leak testing, the test surface shall be visually examined to ensure that the area is dry and free of contaminants that would prevent performance of a valid leak test. Precleaning or surface preparation, other than with a solvent, shall be the responsibility of the customer. The cleaning and drying process shall be compatible with the testing method such that leaks will not be plugged or masked and also to the satisfaction of the NDE Level II or III LT Examiner.

5.2 Visual Inspection

Before leak testing, visually inspect accessible external surfaces and fittings of the test object for gross leaks. Preliminary leak tests may also be employed to detect and eliminate gross leaks; however, this shall be done in a manner that will not invalidate the specified test.

5.3 Pressurization

Components that are to be pressure tested shall be pressurized as specified in the R/I or by the NDE Level III LT Examiner and shall not be tested at a pressure exceeding 25 percent of the design pressure.

5.4 Gases

When gases other than ordinary air are used, the concentration of the tracer gas shall be determined or estimated as required by the referencing Code section.

3.3 Certification of Personnel

All WHC personnel performing leak examination for acceptance shall be certified in accordance with the requirements of WHC-CM-4-39, *Qualification and Certification of Nondestructive Examination Personnel.*

3.4 Administrative Requirements

Administrative controls specified in NDT-GA-2000, "General Administrative Procedure," shall apply to all work done in accordance with this procedure.

3.5 Deviation from Requirements

If it becomes necessary to deviate from the requirements contained in this procedure, a special technique shall be prepared and qualified (proven satisfactory for the referenced requirement) by actual demonstration. The qualified technique shall be approved by a Nondestructive Examination (NDE) Level III Leak Test (LT) Examiner before its use in an actual examination. The records documenting the technique qualification shall be retained and submitted to the Authorized Code Inspector for concurrence, where required. If the specified sensitivity and testing requirements are not achieved, the appropriate documentation shall be prepared in accordance with NDT-GA-2000.

3.6 Safety Related

3.6.1 Hazardous atmospheres

Great care shall be exercised when working with vessels and pipes or gas leakage from such equipment to avoid severe injury or death from oxygen-deficient, toxic, or explosive atmospheres. The guidance provided in the WHC-CM-4-3, *Industrial Safety Manual*, Volume 1, particularly Standard W-13, "Confined Space Entry," shall be fully utilized.

3.6.2 Compressed gases

Compressed gas cylinders shall be secured in the upright position. Before using, inspect valves, regulators, and other accessories to ensure safe operation. The guidance provided in WHC-CM-4-3, *Industrial Safety Manual*, Volume 1, Standard PS-2, "Compressed Gas Cylinders," shall be fully utilized.

3.6.3 Pressure relief valves

A pressure relief valve shall be installed in all pressure leak test systems for protection of personnel and equipment. This pressure relief valve shall be in addition to others normally furnished with gas cylinders and regulators. The pressure relief valve shall be actuated at a pressure value considerably less than that considered hazardous for the entire pressurized system (test article plus the measurement system) and

WESTINGHOUSE HANFORD COMPANY	Manual	WHC-CM-4-28
	Section	NDT-LT-6000, REV 3
	Page	1 of 9
NONDESTRUCTIVE EXAMINATION PROCEDURES	Effective Date	January 15, 1994
	Organization	EA/ED/Instrumentation and Control Engineering

TITLE:

GENERAL LEAK TEST PROCEDURE

Approved by

A. J. Fisher 12/29/93

A. J. Fisher, Manager
Quality Assurance

1.0 PURPOSE

This procedure establishes minimum requirements for the control of leak measurement and location for examination of components, piping systems, and vessels and is not intended to be used for hydrostatic or pneumatic (proof) testing.

2.0 SCOPE

This procedure has three basic parts, which are used in conjunction with one another for each examination. These parts consist of Request/ Instruction for Nondestructive Test Services (R/I) form; general requirements applicable to all leak testing techniques; and appendixes for specific requirements applicable to the various leak testing techniques.

3.0 GENERAL REQUIREMENTS

3.1 Referenced Documents

The specifically referenced content of documents referenced herein shall be considered part of this procedure.

3.2 Request/Instruction for Nondestructive Test Services

The following additional requirements shall be included, or directly referenced, in the R/I form and shall be considered as part of this procedure for the specific job requested.

- The acceptance criteria and method, or technique required
- The extent of examination required
- Test pressure
- Material, part, or weld identification for each object
- Gas type
- Any additional requirements.

should normally be actuated at a pressure of approximately 10 percent greater than the required leak test pressure.

3.6.4 Prior pressurization

Articles with documented evidence of prior pressurization to at least one and one quarter the leak test pressure, or certified by the manufacturer for use at the leak test pressure, may be examined or used without further proof testing or investigation as noted on the R/I or as approved by the NDE Level III LT Examiner. Procedures for verifying safety of all other equipment shall be obtained from Industrial Safety and Fire Protection.

3.6.5 Handling

Lead, aluminum, carbon steel, and low melting point materials (such as cadmium and zinc) shall not contact stainless steel and/or nickel alloys being leak tested. Additional restrictions, as well as specific handling and cleanliness instructions, shall be specified in the R/I or documents directly referenced therein.

4.0 APPLICABLE TEST EQUIPMENT AND APPROVED MATERIALS

4.1 Pressure/Vacuum Gages

When components are to be subjected to pressure, one or more dial-indicating pressure measurement device(s) (or equal as determined by NDE Level II or III LT Examiner) shall be connected to the component, with one of the devices readily visible to the operator controlling the pressure throughout the pressurizing/vacuum and testing cycle, with the other dial-indicating device(s) being located at the component. When required, a recording-type gage may be substituted for one of the pressure-indicating devices.

4.1.1 Indicator range

Indicating gages should preferably have graduations over a range of about double the intended maximum pressure, but in no case shall the range be less than one and one half nor more than four times that pressure. When greater accuracy is required, quartz bourdon tube gages or liquid manometers may be used.

4.1.2 Calibration Requirements

All gages or other pressure measurement devices shall carry nonrepetitive Standards Laboratory identification numbers. Devices shall be calibrated against a certified standard deadweight tester, a calibrated master gage, or a mercury column and shall have been recalibrated during the last year, or as required by the referencing American Society of Mechanical Engineers (ASME), *ASME Boiler and Pressure Vessel Code* section, or at any

5.5 Post-Examination Cleaning

Following each examination, all examination materials shall be removed from the test surface. The application of protective coatings by NDE personnel shall be specified in the R/I or documents directly referenced therein.

6.0 RESULTS OF EXAMINATION

6.1 Acceptance Criteria

A certified Leak Test Examiner (NDE Level II or III) shall evaluate indications. The area under test is acceptable when the measured leak is less than the value specified in the R/I. Where the examination reveals an unacceptable leak rate from the object, NDE personnel shall record the condition and initiate the appropriate documentation as specified in NDT-GA-2000.

6.1.1 Reexamination

Rejected parts may be reexamined by another technique to pinpoint leaks. Repaired areas in the test item shall be cleaned and reexamined using the original test procedure or as required by the referencing ASME Code section.

7.0 RECORDS OF EXAMINATION

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7.1 Special Techniques (specific)

When necessary, a special technique shall be prepared and either referenced by, attached to, or included as part of the examination report. Special techniques will be assigned an identification number associating it with the procedure with which it will be used. For example, NDT-LT-6001 identifies the first leak test special technique associated with the General Leak Test Procedure NDT-LT-6000.

7.2 Leak Test Procedure and Test Report

The Leak Test Procedure and Test Report (see Figure 1) shall be divided into two sections: the documentation of specific examination parameters, and the results of the examination. Gage(s) and temperature measuring device(s), if required, shall be identified by the Standards Laboratory number. This number allows access to the complete identification and calibration history of the device. The documentation of specific examination parameters shall contain, but not be limited to, the following information as applicable:

- Job number
- Customer and address

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WHC-CM-4-38, *Nondestructive Examination Procedures*, NDT-GA-2000, "General Administrative Procedure."

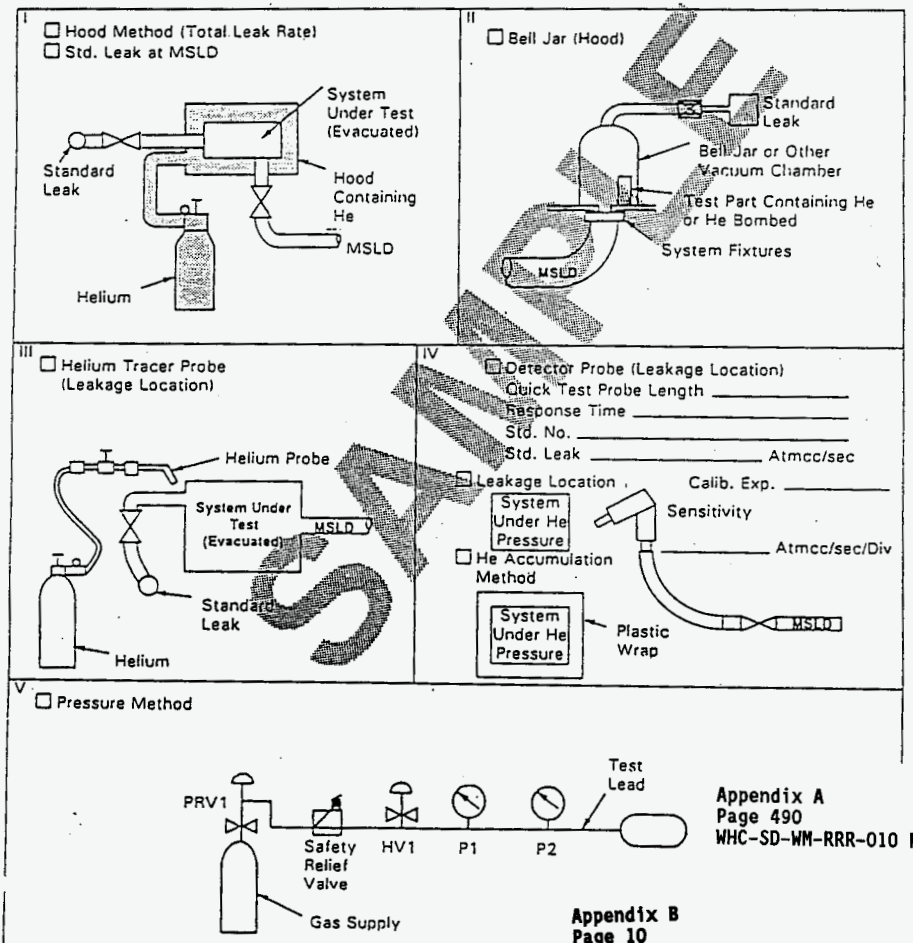
WHC-CM-4-39, *Qualification and Certification of Nondestructive Examination Personnel.*

9.0 BIBLIOGRAPHY

WHC-CM-4-2, *Quality Assurance Manual.*

WHC-CM-4-28, *Quality Assurance Program Manual for ASME Code.*

Figure 1. Leak Test Procedure and Test Report.
(sheet 2 of 2) (A-6000-494)



APPENDIX A
HELIUM LEAK TEST TECHNIQUE

1.0 SCOPE

This appendix sets forth specific requirements for the helium leak test technique and shall be used in conjunction with the Request/Instruction for Nondestructive Test Services (R/I) form and NDT-LT-6000, "General Leak Test Procedure."

2.0 APPLICABLE TEST EQUIPMENT AND APPROVED MATERIALS

2.1 DETECTOR PROBE (SNIFFER, SAMPLING, OR QUICK-TEST)

Commercial probe with hose length less than 15 feet or a QUICK-TEST type probe with a hose length less than 100 feet.

2.2 TRACER (SPRAY) PROBE

Stainless steel hypodermic needle or a commercial helium nozzle.

2.3 HELIUM HOOD

The hood may be a plastic bag approximately one and one half times the volume of the test part.

2.4 STANDARD LEAKS

Leakage rates ranging from 10^{-10} to 10^{-2} std cm^3/s of helium in current calibration.

2.5 MASS SPECTROMETER

The helium leak detector is a Vacuum Instruments Corporation MD-180, or equal, as determined by the Nondestructive Examination (NDE) Level II or III Leak Test (LT) Examiner.

2.6 AUXILIARY EQUIPMENT

When necessary, constant voltage transformers, auxiliary pumping systems, manifolds, and gages may be used. Normally constant voltage transformers are not required for mass spectrometer leak detectors (MSLD) because of internally regulated power supplies. However, if the equipment becomes unstable, operates erratically, or sluggish because of line voltage variations, then either a different power source or a constant voltage transformer shall be used.

*This procedure has been completely rewritten. There are no revision bars indicated.

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HELIUM LEAK TEST TECHNIQUE

2.7 HELIUM

U.S. Bureau of Mines high-purity grade or better.

3.0 SPECIFIC REQUIREMENTS

3.1 AUXILIARY TESTS

In addition to helium leak testing, it may be desirable to perform a bubble, sonic, or other gross leak test to find and plug larger leaks.

3.2 SURFACE CONDITION

Helium leak testing shall be performed before dye penetrant, hydrostatic, or gas-pressure-bubble tests, unless otherwise specified in the R/I.

3.3 CALIBRATION OF MASS SPECTROMETER LEAK DETECTOR

1. The equipment shall be turned on and allowed to warm up for the minimum time specified by the instrument manufacturer, or at least 30 minutes before calibrating the MSLD.

2. The MSLD shall be calibrated by the vacuum technique using a permeation-type standard leak that is attached directly to the MSLD inlet.

3. The standard leak shall be in the range of 1×10^{-7} to 1×10^{-10} atm cm^3/s.

4. Details of the setup and necessary adjustments shall be performed to the instrument manufacturer's operating manual.

5. The helium background (BG-1) shall be measured and the machine sensitivity shall be calculated by Equation 1.

NOTE: When operating on the Hanford reservation and the ambient temperature is between 65 degrees and 85 degrees Fahrenheit, atmosphere cubic centimeters per second (atm cm^3/s) will be equal to standard cubic centimeters per second (std cm^3/s). When operating outside of these parameters and standard cubic centimeters per second (std cm^3/s) is the nomenclature for the acceptance standard, then the leak rate shall be corrected to standard conditions (77 degrees Fahrenheit and 14.7 psia).

APPENDIX A
HELIUM LEAK TEST TECHNIQUE

Equation 1

$$\text{MSS (std cm}^3\text{/s/div)} = \frac{\text{CL (std cm}^3\text{/s)}}{\text{(MSI-1) - (BG-1)}}$$

Where: MSS = MSLD machine sensitivity

CL = Helium leak rate of the calibrated standard leak

MSI-1 = Leak rate meter reading attributable to helium from the standard leak plus background

BG-1 = Leak rate meter reading attributable to background, measured after MSI-1 is determined

div = Minor scale division

The MSLD is acceptable for use if the machine sensitivity is better than 1×10^{-9} std cm^3/s/div helium.

Calibration will be performed in accordance with this schedule:

- o At the beginning and end of each 2-hour period of continuous operation.
- o At the beginning and end of each operating period, if operation is not continuous.
- o At any time the operator suspects the equipment is performing erratically.

If the MSLD has experienced a loss of sensitivity to less than 1×10^{-9} std cm^3/s/div, all examinations must be repeated since the time of the last satisfactory calibration.

3.4 LEAK TEST METHODS

A NDE Level II or III LT Examiner will select one of the following techniques: hood technique, helium tracer probe, or helium detector probe.

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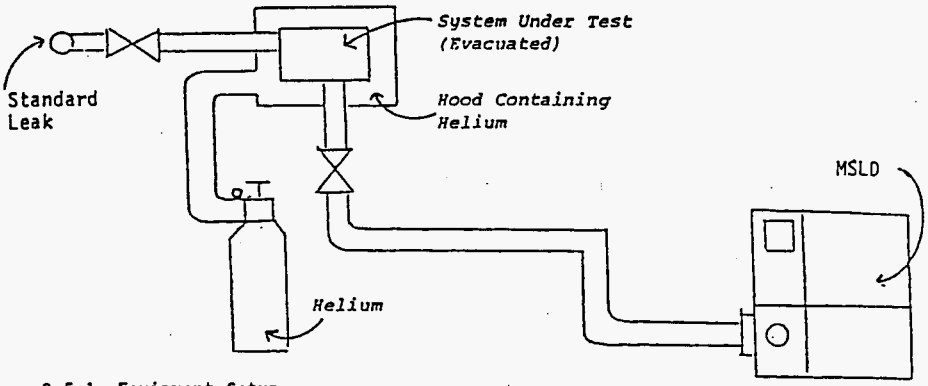
HELIUM LEAK TEST TECHNIQUE

3.5 HOOD TECHNIQUE (TOTAL LEAK RATE)

Figure A-1. Hood Technique.



3.5.1 Equipment Setup

Connect test part to MSLD, as shown in Figure A-1. The calibrated leak standard and the MSLD shall be attached, where feasible, to the component as far apart as possible. Alternately, when the test part contains helium, the MSLD may be connected to a bell jar type device.

3.5.2 Evacuation

Evacuate the test part by operating the MSLD according to the manufacturer's written operating instructions.

3.5.3 Part Enclosure

Enclose the test part with any suitable envelope or container such as a plastic bag or hood.

3.5.4 Preliminary System Calibration

1. To determine the preliminary system calibration (PSC) and the helium response time, open the calibrated leak to the system.

2. After the measured leak rate becomes stable, record the reading as MSI-2.

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HELIUM LEAK TEST TECHNIQUE

NOTE: The time difference between the helium application and a stable reading on the MSLD is the system response time.

3. Close the calibrated leak to allow the MSLD to stabilize, and record system background (BG-2).

4. Calculate the preliminary system calibration according to Equation 2, and record both the PSC and response time.

NOTE: The calibration shall be repeated when there is any change in the MSLD system setup (e.g., a change in the portion of helium bypassed to the auxiliary pump, if used, or any change in the calibrated leak).

Equation 2

$$\text{PSC (std cm}^3\text{/s/div)} = \frac{\text{CL (std cm}^3\text{/s)}}{\text{(MSI-2) - (BG-2)}}$$

Where: PSC = Preliminary system calibration

CL = Helium leak rate of the calibrated standard leak

MSI-2 = Leak rate meter reading attributable to helium from the standard leak in the system, plus background of the system

BG-2 = Leak rate meter reading attributable to background of the system, measured after MSI-2 is determined

div = Minor scale division

3.5.5 Leakage Rate

To determine the system leakage rate, open the MSLD to the system and fill the hood with helium (ensure helium concentration is about 100 percent). Wait until the response time has elapsed (as determined in 3.5.4) or when the MSLD has stabilized, and record the meter reading (MSI-3).

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3.5.6 Actual System Calibration

Perform actual system calibration (ASC) by opening the calibrated leak into the system with helium still in the hood; after waiting a period of time equal to the response time, record MSLD reading (MSI-4). Calculate actual system sensitivity according to Equation 3, and record the ASC.

Equation 3

$$\text{ASC (std cm}^3\text{/s/div)} = \frac{\text{CL (std cm}^3\text{/s)}}{\text{(MSI-4) - (MSI-3)}}$$

Where: ASC = Actual system calibration

CL = Helium leak rate of the calibrated standard leak

MSI-4 = Total leak rate meter reading attributable to helium from leakage in the system, the standard leak, and background

MSI-3 = Leak rate meter reading attributable to leakage into the system, plus background

div = Minor scale division

If the ASC has decreased below the PSC by more than 35 percent, the cause shall be investigated and corrected. Then the component or system shall be retested.

3.5.7 Leakage Rate Calculation

Calculation of measured leak rate shall be according to Equation 4.

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HELIUM LEAK TEST TECHNIQUE

Equation 4

$$MLR\ (\text{std cm}^3/\text{s}) = \frac{ASC\ [(MSI\text{-}3) - (BG\text{-}2)]\ (100)}{\%\ \text{helium}}$$

Where:

MLR = Measured leak rate of components

ASC = Actual system calibration as determined in (Equation 3)

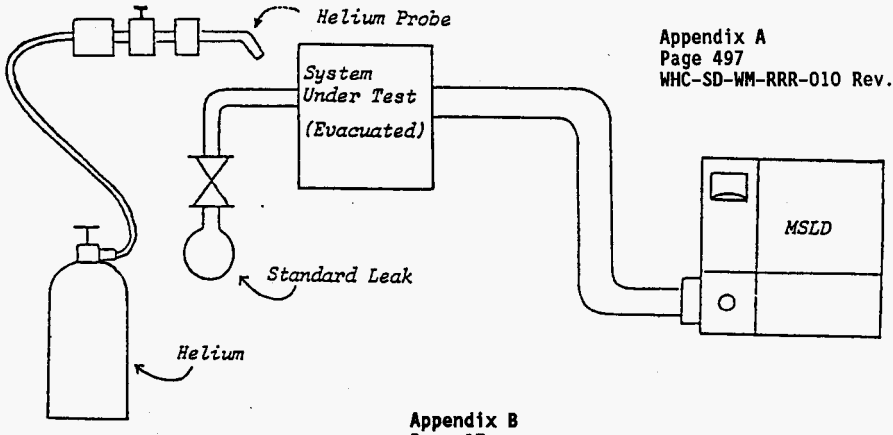
MSI-3 = Leak rate meter reading attributable to the real leak, plus background

BG-2 = Leak rate meter reading attributable to background of the system

% helium = Estimated helium concentration in hood

3.6 HELIUM TRACER PROBE (LEAKAGE LOCATION ONLY)

Figure A-2. Helium Tracer Probe Technique.



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HELIUM LEAK TEST TECHNIQUE

3.6.1 Helium Tracer Probe Technique

Helium tracer probe technique shall not be used for acceptance testing unless approved before the test by the NDE Level III LT Examiner.

3.6.2 Equipment Setup

Connect the test part to the MSLD, as shown in Figure A-2.

3.6.3 Evacuation

Evacuate the test part.

3.6.4 Operation

When evacuated, operate the MSLD using manufacturers' written operating instructions.

3.6.5 Helium Regulation

Adjust the helium pressure regulator so that the tracer probe emits a fine stream of 100 percent helium.

ATTENTION: Special care shall be taken not to point the tracer probe at anyone. The needle or nozzle tip could become a projectile if propelled off the supply hose by an excessive burst of pressure.

3.6.6 System Calibration

When using the tracer probe for acceptance, a capillary standard leak shall be attached to the component as far as possible from the MSLD. The capillary standard leak shall remain open during system calibration. Evacuate the component with the MSLD, and calibrate the system by passing the previously adjusted helium supply within 1/4 inch of the capillary standard leak. Note the time required for the helium indication to appear and stabilize on the MSLD (response time).

3.6.7 Scanning

The scanning rate shall not exceed that which can detect a leakage rate of 1 X 10^{-5} std cm^3/s of helium flowing though the capillary standard leak into the test system. Slowly move the tracer probe within 1/4 inch along the exterior of the test part, always moving from the upper to the lower portion

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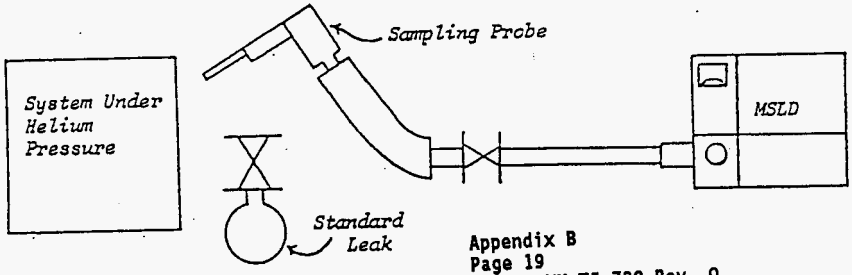
HELIUM LEAK TEST TECHNIQUE

of the part. If the flow rate of the tracer probe is reduced, the system calibration shall be repeated to determine a new scanning rate. Monitor the leak rate meter and/or the speaker for indications of a leak, and record meter reading (MSI-3). Mark the locations of all leaks detected.

3.7 DETECTOR PROBE (SNIFFER OR "QUICKTEST")

Figure A-3. Detector Probe Technique.



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3.7.1 Part Pressurization

Pressurize the test part with helium as noted on the R/I or as approved by the NDE Level III LT Examiner. Allow the test part to soak for at least 30 minutes. The test is to be conducted in a draft-free enclosure or by shielding the probe with a rubber cone.

3.7.2 Concentration of Tracer Gas

The concentration of the helium tracer gas shall be a minimum of 10 percent by volume at the specified test pressure.

If helium concentration is less than 100 percent, then the standard leak shall be smaller than the acceptance criteria. Refer to Equation 5 to calculate the maximum size of the standard leak.

Equation 5

$$Q = (\text{acceptance criteria}) \left[\frac{\text{Actual helium concentration (\%)}}{100} \right]$$

Q = maximum leakage rate of the standard leak

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3.7.3 Response Time

The time required for a helium indication to appear and stabilize on the MSLD is the response time and shall be noted on the test report.

3.7.4 Scanning Rate Determination

The normal scanning rate shall be determined by passing the detector probe across the orifice of the standard leak, provided the helium concentration in the standard simulates the test article concentration. The tip of the probe shall be within 1/8 inch of the surface being scanned.

3.7.5 Scanning

Slowly scan all sealing surfaces with the detector probe as shown in Figure A-3 at the rate determined in 3.7.4. The examination scan should proceed from the lowest portion to higher portions of the system. The detector probe method is qualitative and is usually used to locate leaks.

3.7.6 Tubular Heat Exchanger

When testing tubular heat exchanger, the probe shall be inserted into each tube end and held for a time equal to the response time to check for cracks or splits in the tube walls. When desirable, all tube-to-tube sheet welds may be tested by the encapsulator method. If the encapsulator is used, the response time is determined by placing the encapsulator over the orifice on the capillary calibration leak standard and noting the time required for an indicated response.

1. Mark all leaks detected, and seal them temporarily while probing for additional leaks.

2. Record locations of all leaks detected.

3.7.7 Other Application

Quantitative measurements of leakage may be accomplished by using the detector probe and a hood accumulation technique. A hood (may be a plastic envelope or bag) is placed over the weld or zone to be leak tested. Helium leakage to the atmosphere, if any, is collected in the hood. A detector probe is used to detect the accumulation of helium in the hood as shown in Figure A-4.

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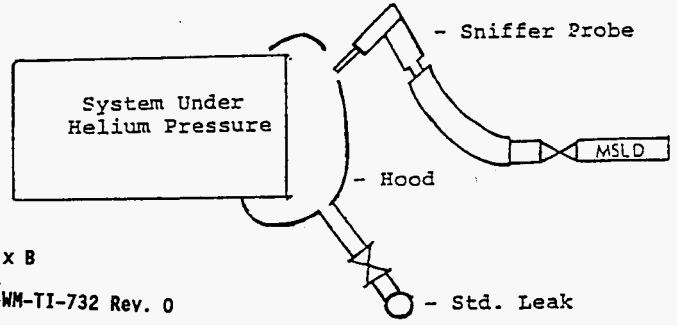
Figure A-4. Accumulation Technique.



3.7.7.1 Standard Leak. The capillary standard leak used to qualify this technique shall be within a factor of 10 of the acceptance criteria; i.e., 5×10^{-6} atm cm^3/s acceptance criteria, the standard leak shall be from 5×10^{-5} atm cm^3/s to 5×10^{-7} atm cm^3/s.

3.7.7.2 Accumulation Time. The accumulation time is determined by measuring the increase in helium concentration from a standard leak in a test hood at 5- to 10-minute intervals. The minimum accumulation time is determined when the helium concentration in the test hood reaches a level at least 200 divisions above the background signal. The detector probe background signal may vary slightly; therefore it is recommended the helium signal be significantly larger than the background signal.

3.7.7.3 Hood. The hood used during calibration and in determining the accumulation time shall be representative of the hood used to test the component or weld.

3.7.7.4 Calibration. Without helium in the system under test, the standard leak is opened to the hood and signal response MSI-6, and corresponding accumulation time is recorded.

Response of the detector probe to a standard leak shall be checked both before and after the examination. The sensitivity shall not decrease by more than 35 percent. If it does, the cause shall be investigated and corrected; then the component or system shall be retested.

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HELIUM LEAK TEST TECHNIQUE

Equation 6

$$\text{MLR std } cm^3/s = \frac{(MSI\text{-}7) - (MSI\text{-}5) \quad (CL)\ (100)}{(MSI\text{-}6) - (MSI\text{-}5) \quad \%\ \text{helium}}$$

Where:

MLR = Measured leak rate of component

MSI-5 = Leak rate meter reading (divisions) attributable to helium in the atmosphere (background)

MSI-6 = Leak rate meter reading (divisions) attributable to the standard leak after accumulation time

MSI-7 = Leak rate meter reading (divisions) of helium leakage into hood after accumulation time

CL = Helium leak rate of standard leak

% helium = Estimated helium concentration in test part

APPENDIX B
PRESSURE CHANGE TECHNIQUE

1.0 SCOPE

This appendix sets forth specific requirements for the pressure change technique and shall be used in conjunction with the Request/Instruction for Nondestructive Test Services (R/I) form and NDT-LT-6000, "General Leak Test Procedure."

2.0 SPECIFIC REQUIREMENTS

2.1 REQUEST/INSTRUCTION FOR NONDESTRUCTIVE TEST SERVICES

The following additional requirements shall be included, or directly referenced, in the R/I.

- Test gas, if other than air
- If required, permission for evacuating the test article before introducing the test gas
- Starting pressure
- Special precautions
- Acceptance criteria shall be specified by the R/I in terms of pressure change permitted over a prescribed time period.

2.2 TECHNIQUE SELECTION

Examination technique selection shall be tailored to the requirements of the measurement system and the test article being examined as determined by the Nondestructive Examination (NDE) Level II or III Leak Test (LT) Examiner.

2.3 TEST ARTICLE

The test article volume, rigidity, provision for, and likely consequences of evacuation or pressurization shall be considered before leak testing.

*This procedure has been completely rewritten. There are no revision bars indicated.

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PRESSURE CHANGE TECHNIQUE

2.4 TEST PRESSURE

Components shall be examined at the pressure specified on the R/I or as approved by the NDE Level III LT Examiner. For a vacuum test, the pressure shall be at least 2 psi below atmospheric pressure or as required by the referencing American Society of Mechanical Engineers, ASME Boiler and Pressure Vessel Code section.

2.5 MEASUREMENT SYSTEM

The measurement system is defined as all components needed to measure a leakage rate from a test article. These components may be items such as tubing, valves, gages, instrumentation, and relief valves.

2.6 MEASUREMENT SYSTEM INSTRUMENTATION

Temperature measuring instrumentation and pressure gage(s) shall have an accuracy, resolution, sensitivity, and repeatability that is compatible with the acceptance criteria and shall be calibrated in accordance with NDT-GA-2000, "General Administrative Procedure."

2.7 MEASUREMENT SYSTEM CHECK

The measurement system shall be evaluated for leak tightness. The measurement system leakage rate, not including the test article, shall not exceed one-tenth of the specified acceptance leakage criteria.

2.8 PURGE

Measurement system lines shall be purged with the test gas, if other than air, before pressurizing the system or test article.

2.9 TEMPERATURE CHECK

Examination gas temperatures in the test article shall be measured before the start of the test and recorded at regular intervals of not more than 60 minutes during the examination.

2.10 OTHER ESSENTIAL VARIABLES

When compensation for atmospheric pressure and/or water vapor pressure variations is required, then measurements shall be made and recorded during the examination cycle at regular intervals of not more than 60 minutes.

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PRESSURE CHANGE TECHNIQUE

2.11 SMALL SYSTEMS

For small systems such as gasket interspaces, at least 15 minutes shall elapse after completion of pressurization and before starting the test.

2.12 LARGE SYSTEMS

For systems larger than 10 cubic inches, the temperature of the trace gas shall have stabilized before starting the test.

3.0 EXAMINATION PROCEDURE

All inspection equipment shall be operated in accordance with the manufacturers' written operating instructions.

3.1 COMPENSATION FOR TEMPERATURE AND ATMOSPHERIC PRESSURE CHANGES

If temperature and/or atmospheric pressure changes occur during the examination, then the measured leak rate shall be mathematically corrected to account for such changes (refer to Equation 5).

4.0 RESULTS OF EXAMINATION

4.1 LEAK RATE CALCULATION (PRESSURE DROP)

For the conditions stated, the following formula may be applied.

Equation 1

$$Q = \frac{P_1V - P_2V}{t}$$

Q = Leak Rate (atm cm^3/s)

Where:
- P_1 = Pressure at start of examination (atmospheres)
- P_2 = Pressure at end of examination (atmospheres)
- V = Volume of system (cubic centimeters)
- t = Time duration of examination (seconds)

Assume:
1. Ideal gas
2. Viscous flow
3. No temperature change throughout examination
4. No change in barometric pressure throughout examination

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PRESSURE CHANGE TECHNIQUE

4.2 EQUATION FOR COMPENSATION OF MEASUREMENT SYSTEM VOLUME

When the measurement system volume is significant compared to the test article volume, either the examination time shall be increased or the permissible pressure change shall be decreased to compensate for the influence of the measurement system volume.

Equation 2

$$t_{total} = t_{sp} [1 + (V_S/V_A)]$$

Where: t_{total} = Total examination time

t_{sp} = Specified examination time for test article

V_S = Volume of measurement system

V_A = Volume of test article

or

Equation 3

$$P_{total} = P_{sp} [1 + (V_S/V_A)]$$

Where: P_{total} = Total permitted pressure change

P_{sp} = Specified pressure change permitted for the test article alone

V_S = Volume of measurement system

V_A = Volume of test article

APPENDIX B
PRESSURE CHANGE TECHNIQUE

The volume ratio shall be considered significant if:

Equation 4

$$\frac{V_S}{V_A} \geq 0.1$$

or if otherwise specified on the R/I.

4.3 EQUATIONS FOR TEMPERATURE AND PRESSURE CORRECTION

Atmospheric pressure and examination gas temperature shall be monitored during the performance of the leak test examination, and, if required, the examination results shall be corrected for changes in these parameters.

For rigid test articles, ideal gages, uncompensated measurement devices, and where measurement system and test article are exposed to the same temperature environment, the following correction shall be applied.

Equation 5

$$P_a = P_m - P_1 \left(\frac{T_2}{T_1} - 1 \right) + \left(P_{A_2} - P_{A_1} \right)$$

Where:

P_a = Actual pressure change (absolute)

P_m = Measured pressure change (uncompensated measuring device, absolute)

P_1 = Test pressure at start of examination (absolute)

T_1 = Absolute gas temperature at start of examination (Rankine or Kelvin)

T_2 = Absolute gas temperature at end of examination (Rankine or Kelvin)

P_{A_1} = Barometric pressure at start of examination (absolute)

P_{A_2} = Barometric pressure at end of examination (absolute)

See Table B-1 for sample calculations.

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PRESSURE CHANGE TECHNIQUE

4.4 RECORDS OF EXAMINATION

The following information shall be recorded, as a minimum.

- o Gas type (if mixed gas, list approximate mixture ratio)
- o Measured gas pressure
- o Gas temperature (estimate if ambient temperature is used and basis for estimate)
- o Barometric pressure
- o Test results

APPENDIX B
PRESSURE CHANGE TECHNIQUE

Table B-1. Sample Calculations.

Correction of pressure drop measurement for an increase in temperature and a drop in barometric pressure.

Equation:

$$Pa = Pm - P_1 \left(\frac{T_2}{T_1} - 1\right) + (P_{A_2} - P_{A_1})$$

Given:

Pa = Actual pressure change (absolute)

P_1 = Test pressure 5.0 psig argon (19.5 psia)

T_1 = 70°F (529°R) temperature at start of test (absolute)

T_2 = 80°F (539°R) temperature at end of test (absolute)

P_{A_1} = 29 inches of mercury (1 inch mercury = 0.5 psi)

P_{A_2} = 28 inches of mercury

Pm = -0.1 lb/in^2/30 minutes

Solution:

$$Pa = -0.1 - 19.5 \left(\frac{539}{529} - 1\right) + (14.0 - 14.5)$$

$$Pa = -0.1 - 0.37 - 0.5$$

Pa = -0.97 lb/in^2/30 minutes

In this example, both the temperature and barometric pressure changes were significant.

APPENDIX C
BUBBLE TEST TECHNIQUE

1.0 SCOPE

This appendix sets forth specific requirements for the bubble test technique and shall be used in conjunction with the Request/ Instruction for Nondestructive Test Services (R/I) form and NDT-LT-6000, "General Leak Test Procedure."

2.0 DIRECT PRESSURE TECHNIQUE

2.1 TEST MATERIALS

2.1.1 Gases

Unless otherwise specified in the R/I, the test gas will normally be air. Inert gases, such as nitrogen, helium, or argon, may be used. When inert gases are used, safety aspects such as oxygen-deficient atmosphere shall be considered.

2.1.2 Bubble Solution

The bubble solution shall be specifically designed for leak detection. Ordinary household soaps or detergents are prohibited as substitutes for bubble testing solutions. The bubble solution shall produce a thin film capable of wetting and adhering to the area being tested. The bubbles formed by a leak shall not break rapidly because of air drying or low surface tension. Halogen and sulfur content of the bubble solution shall be less than 0.5 percent by weight.

2.1.3 Immersion Bath

Water or another compatible solution shall be used for the bath.

2.2 SPECIFIC REQUIREMENTS

2.2.1 Temperature

Surface temperature of the part shall not be below 40° Fahrenheit nor above 125° Fahrenheit throughout the examination. Where it is impractical to comply with the temperature limitations, a specific technique shall be prepared, demonstrated, and approved by a Nondestructive Examination (NDE) Level III Leak Test (LT) Examiner before the test. The bubble solution and the immersion bath shall be compatible with the temperature of the test conditions.

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BUBBLE TEST TECHNIQUE

2.2.2 Other Considerations

Hydrostatic test shall not be made before bubble testing unless special drying procedures are approved by a NDE Level III LT Examiner.

2.2.3 Pressurization

The test pressure shall be specified on the R/I. Before examination the test pressure shall be held for a minimum of 15 minutes.

2.2.4 Application of Solution

The bubble-forming solution shall be applied to the surface to be tested by flowing the solution over the examination area. The number of bubbles produced in the solution by application should be minimized to reduce the problem of masking bubbles caused by leakage. In immersion testing, the area of interest shall be placed below the surface of the bath in an easily observable position.

2.2.5 Visual Examination

A direct visual examination shall be made by placing the eye within 24 inches (61 cm) of the surface to be examined and at an angle of not less than 30 degrees to the surface being examined. Mirrors may be used to improve angle of vision, and aids such as magnifying lens may be used to assist examinations. The specific part, component, pipe, vessel, or section thereof under immediate examination, shall be illuminated, if necessary, with flashlight or other auxiliary lighting to attain a minimum of 15 foot candles for general examination and a minimum of 50 foot candles for the detection or study of small anomalies.

2.2.6 Remote Visual

In some cases, remote visual examination may be substituted for direct examination. Remote visual examination may be by visual aids such as mirrors, telescopes, borescopes, fiber optics, cameras, or other suitable instruments. Visual aid shall have a resolution capability such that the 1/64-inch markings on a steel rule may be clearly distinguished.

2.2.7 Indication of Leakage

The presence of leakage on the surface of the component or weld is indicated by bubbles or foam produced by gas flowing through an orifice passage(s).

APPENDIX C
BUBBLE TEST TECHNIQUE

When leakage is observed, the leak(s) shall be marked. Depressurize the component or system and repair as required by the referencing American Society of Mechanical Engineers, ASME Boiler and Pressure Vessel Code section. As a minimum, the repair area(s) shall be retested by the bubble test method.

3.0 VACUUM BOX TECHNIQUE

3.1 SPECIFIC REQUIREMENTS

In addition to the following specific requirements, Section 2.0 of this appendix shall also apply.

3.1.1 Vacuum Box

A vacuum box of convenient size shall have a suitable gasket, valve(s), 0 to 15 psi or equivalent gage, and a window, which provides adequate lighting and viewing of the test surface.

3.1.2 Vacuum Source

Any convenient source may be used to create the required vacuum. The gage shall register at least 2 psi below atmospheric pressure or partial vacuum required by the referencing ASME Code section.

3.1.3 Vacuum Retention

The required partial vacuum (differential pressure) shall be maintained for at least 10 seconds during the examination.

3.1.4 Vacuum Box Overlap

A minimum overlap of 2 inches shall be used.

	Doc Number	PM/S Number	
1. Data Sheet Number	2B-95-01013/W	2C-00097	D/S Status OPEN
Work Item Title	MAINTENANCE SUPPORT ANNUAL TESTING BUSS CASK		

2. PM/S Type 7 INSTRUMENT CALIBRATION PROGRAM
PM/S Title ANNUAL NDE TESTING OF THE BUSS
PM/S Due Date 09/28/95 Frequency 365 Recall Basis 1 PERIODIC, CALENDAR DATE
Operations Rel Reqd Y PM/S Authority LOWERY,JL

Procedure Number N/A Title NOT APPLICABLE
Procedure Date Revision Number
Procedure Type FUNCTEST

3. Component Number USA-9511-B(U) System C99R
Component Name USA-9511-B(U)
Safety Class 3 Facility 2C
Bldg/Rm 225B Other CRANE PAD Other
Manufacturer SANDIA NAT Model R-1
Serial Number
Reference Drawings

4. Assoc Components Assoc PM/S Reference Documents Type

5. Data Sheet Body

		Standards	Exp Date	Tolerance
Loop/Seq Number	T0001-1			
Mode	N/A			
Comp Admin Code	REG			
Cal Tag Status	ACTIVE			

NOTE: The BUSS cask is required to have annual NonDestructive Examination (NDE) testing performed according to Chapter 8, Section 8.1.4.1, 8.1.4.2 and 8.2 of the Safety Analysis Report for Packaging (SARP). The leak detector (Helium Mass Spectroscopy) must have a sensitivity of 5.0 x 10(-6) atm-cm(3)/sec.

1. Does the BUSS cask containment boundary meet the leak rate criteria of less than 1.0 x 10(-5) atm-cm(3)/sec? (Yes/~~No/NA~~) PTS 01/04/96

2. Does the lid seal meet the leak rate criteria of less than 1.0 x 10(-4) atm-cm(3)/sec? (Yes/~~No/NA~~) PTS 01/04/96

3. Does the upper port seal meet the leak rate criteria of less than 1.0 x 10(-4) atm-cm(3)/sec? (Yes/~~No/NA~~) PTS 01/04/96

4. Does the lower port seal meet the leak rate criteria of less than 1.0 x 10(-4) atm-cm(3)/sec? (Yes/~~No/NA~~) PTS 01/04/96

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Doc Number PM/S Number

1. Data Sheet Number 2B-95-01013/W 2C-00097 D/S Status OPEN

Work Item Title MAINTENANCE SUPPORT ANNUAL TESTING BUSS CASK

5. Does the sum of the leak rates for the lid, upper and lower port meet the leak rate criteria of less than 1.0 x 10(-4) atm-cm(3)/sec?
(Yes)/~~No~~/~~NA~~ YS 01/04/~~95~~ YS

6. Do the lift lugs meet the criteria of no detectable cracks using dye penetrant?
(Yes)/~~No~~/~~NA~~ WDP 11/29/95

7. Do the trunnions meet the criteria of no detectable cracks using dye penetrant?
(Yes)/~~No~~/~~NA~~ WDP 11/29/95

8. Restore BUSS cask to shipping configuration. Rick L. Crawford 12/4/95

6. Data Sheet Complete Signature Rick L. Crawford Date 12/5/95

7. Res Code	Description	No.	Act Hrs
~~98-23~~ (C MY)	Millwrights	1	64

8. Completed Satisfactory YES

9. Comments
INSTRUCTIONS: PERFORM ANNUAL NON-DESTRUCTIVE EVALUATION (NDE) OF THE BUSS CASK PER NDT-LT6000 AND NDT-PT4000.

Westinghouse Hanford Company

NDE LEAK TEST PROCEDURE AND TEST REPORT UL-100

NON DESTRUCTIVE EXAMINATION
306 BLDG., 300 AREA - TEL. 376-6401

Job No. 95-34

Requestor	Company	Project/System/Work Package/Traveler No.
PAUL T SAUERESSIG	WHC	BUSS CASK #USA/9511/B (U)
		ANNUAL HELIUM TESTING
		WORK ORDER # KB64D

MSIN	Bldg.	Area
5-65	225B	200E

Acceptance Std. | Section | Para. | Date | ☐ NA

CONTAINMENT LID SEAL + UPPER PORT SEAL + LOWER PORT SEAL LESS THAN 1.0 X 10-4 ATM/CC/SEC.
CONTAINMENT BOUNDRY LESS THAN 1.0 X 10-5 ATM cc/SEC

Dwg. No. ☐ NA: SAND92-0967 SECTION 7

TEST CONDITIONS

- Temperature AMB. Device ID ____ ☒ NA
- Barometric Pressure AMB. ☐ NA
- Test Pressure ▲ 14.7 PSIA ☐ NA
- Gas HELIUM ☐ NA
- Concentration 100% ☐ NA
- Other ____ ☒ NA
- Bubble Solution ____ ☒ NA
- Batch No. ____
- Gage 1 584-31-04- 002 ☐ NA
- Range 0-50 PSIA
- Calib. Exp. 9/28/95
- Gage 2 584-31-04- ____ ☒ NA
- Range ____
- Calib. Exp. ____
- Relief Valve ____ ☒ NA

TEST EQUIPMENT ☐ NA

- Manufacturer LH UL-100 PLUS
- Ident. No. WC-48869
- Mach. Sen. 1.3 X 10-11 Atm/cc/sec/Div
- Std. No. 584-40-03- 018
- Std. Leak 1.6 X 10-8 Atm/cc/sec
- Calib. Exp. 07/07/96

SYSTEM SENSITIVITY ☐ NA

☐ Same as MSLD Calib. or:

- Sensitivity 6.7 X 10-11 Atm/cc/sec/Div
- Std. No. 584-40-03-007
- Std. Leak 1.4 X 10-5 Atm/cc/sec
- Calib. Exp. 1/6/96

ADDITIONAL STD. ☒ NA

- Sensitivity ____ Atm/cc/sec/Div
- Std. No. ____
- Std. Leak ____ Atm/cc/sec
- Calib. Exp. ____

NCR ☒ NA

Cleaning ☒ NA

WHC PROCEDURE NO. ☐ NA

☒ NDT-LT-6000 Rev. 3
Appendix A Rev. 2
☐ Special Tech. No. N/A
☐ Work Inst. N/A

TEST TIME

- He Response Time INSTANT ☐ NA
- He Accum. Time ____ ☒ NA
- Soak Time ____ ☒ NA
- Additional Times ____ ☒ NA

Weld No., Part No., or Serial No.	Acc.	Rej.	No Rel. Ind.	Comments
CONTAINMENT LID SEAL	X		X	NO DETECTABLE LEAKS FOUND (< 1.1 X 10-11 ATM/CC/SEC.)
UPPER PORT SEAL	X			LEAK RATE =1.5 X 10-7 ATM/CC/SEC.
LOWER PORT SEAL	X			LEAK RATE = 7.7 X 10-8 ATM/CC/SEC.
TOTAL LEAK RATE FOR				CONTAINMENT LID SEAL =1.1 X 10-11 ATM/CC/SEC
BUSS CASK SEALS	X			UPPER PORT SEAL =1.5 X 10-7 ATM/CC/SEC
				LOWER PORT SEAL =7.7 X 10-8 ATM/CC/SEC
				TOTAL =2.3 X 10-7 ATM/CC/SEC
CONTAINMENT BOUNDRY	X		X	NO DETECTABLE LEAKS FOUND (< 6.7 X 10-11 ATM/CC/SEC)

Technique Pre Approval ☒ NA | LT Level/Date

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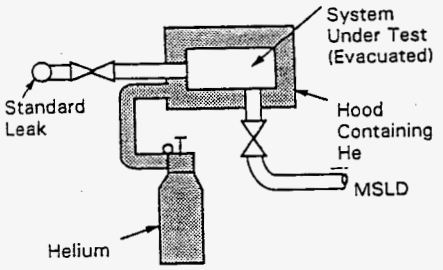
Technician	Level	Interpreted by	LT Level II	Reviewed by
WD PURDY W.D Purdy	II	WD PURDY W.D Purdy	II	
Date of Examination: 12/01/95		Date: 12/01/95		Date: 12-4-95

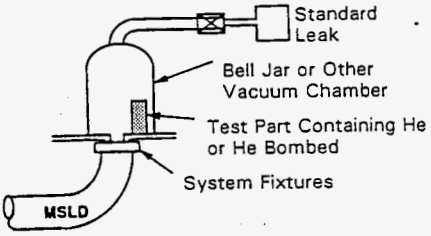
A-6001-492 (11/94)

5. Attached PAGES for Set-up

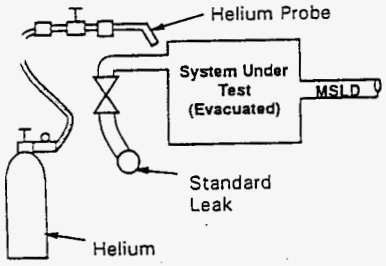
I ☐ Hood Method (Total Leak Rate)
☐ Std. Leak at MSLD



II ☐ Bell Jar (Hood)



II ☐ Helium Tracer Probe (Leakage Location)

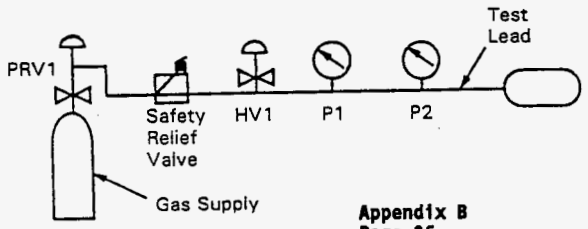


IV ☐ Detector Probe (Leakage Location)
Quick Test Probe Length _____
Response Time _____
Std. No. _____
Std. Leak _____ Atmcc/sec

☐ Leakage Location
System Under He Pressure
Calib. Exp. _____
Sensitivity
_____ Atmcc/sec/Div
MSLD

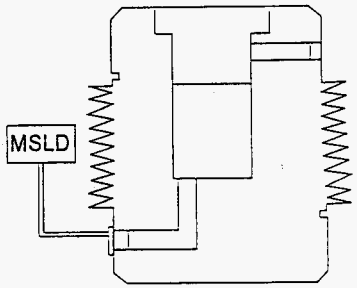
☐ He Accumulation Method
System Under He Pressure
Plastic Wrap

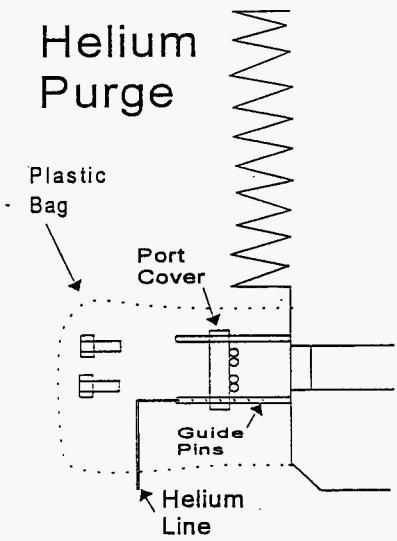
V ☐ Pressure Method



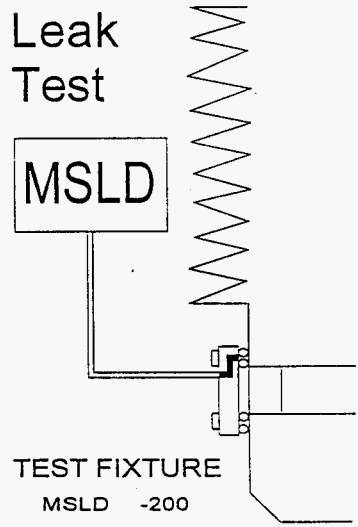
ATTACHMENT 3

Lower Port Seal





3a



3b

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ATTACHMENT 2

Upper Port Seal

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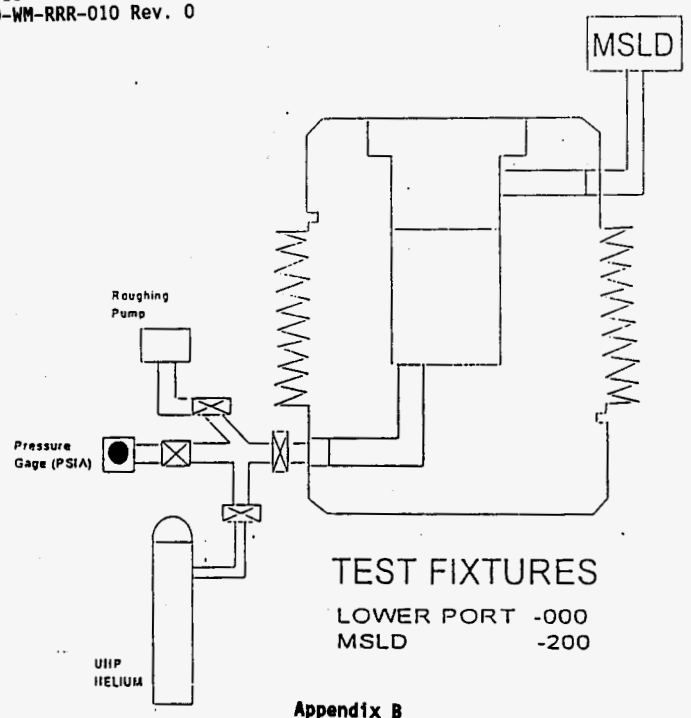

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ATTACHMENT 1

Containment Lid Seal

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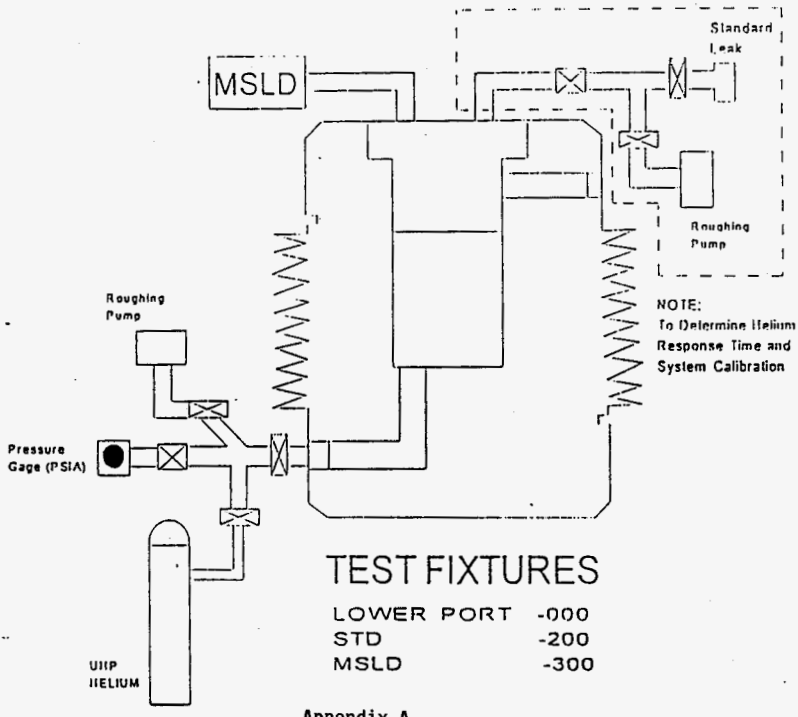

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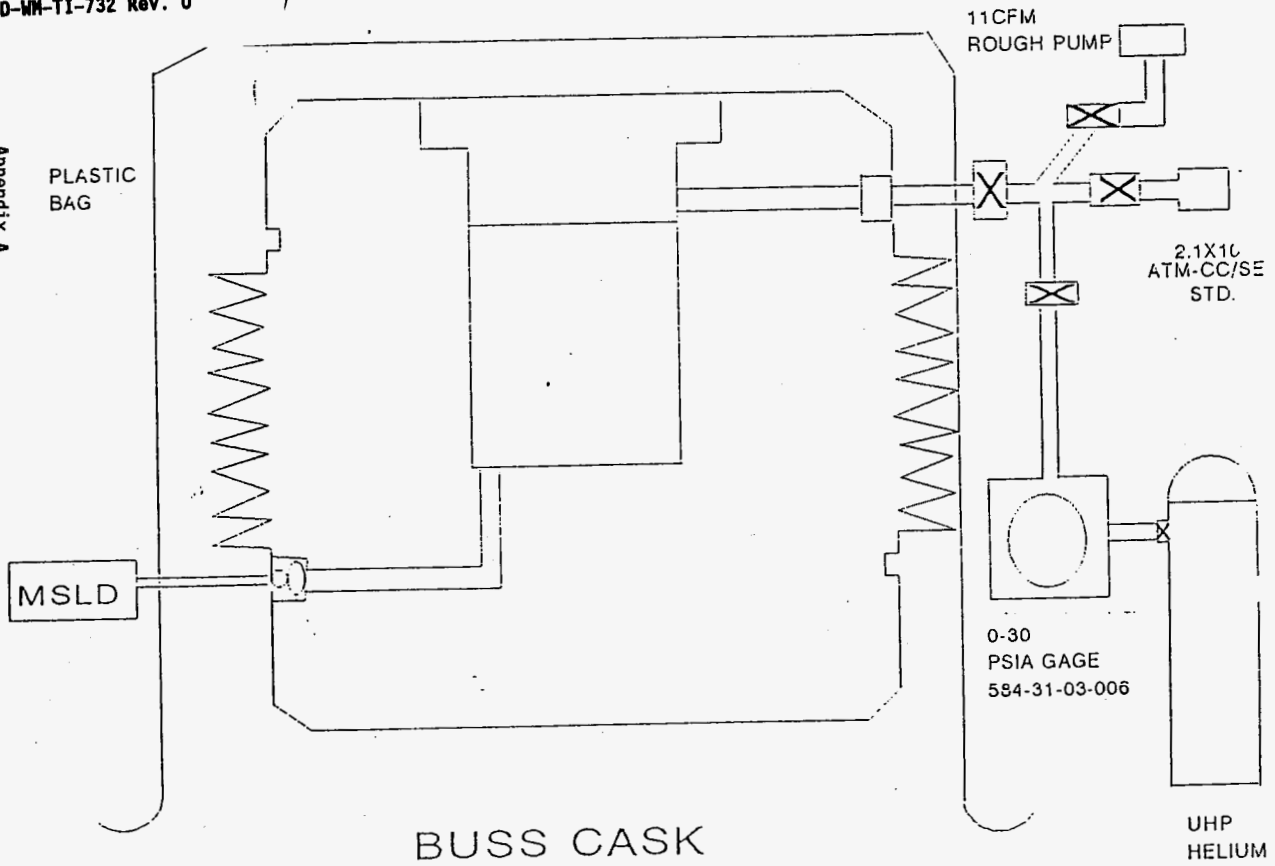

BUSS CASK

CONTAINMENT BOUNDRY TEST

Appendix C: Dye Penetrant of Trunnions and Lift Lugs Data

Ci

Westinghouse Hanford Company

NDE PENETRANT PROCEDURE AND TEST REPORT

NON DESTRUCTIVE EXAMINATION
306 BLDG., 300 AREA - TEL. 376-5401

Job No. 94-204

Requestor	Company	Project/System/Work Package/Traveler No.
UL T SAUERESSIG	WHC	BUSS CASK TRAILER SKID
		2B-94-00953/P

MSIN	Bldg.	Area
S6-65	225B	200E

KB5B2

Acceptance Std.	Section	Para.	Date	NA	Dwg. No.	NA	Material	NCR	NA
SNL 9912119				☐		☒	S/S		☒

PRODUCT OR STAGE OF MANUFACTURING

- ☐ As Cast
- ☐ As Forged
- ☐ As Machined
- ☒ As Assembled
- ☐ As Welded
- ☐ Weld Prep
- ☐ Root Pass
- ☒ Final
- ☐ Other
- ☐ Repair No.

WHC PROCEDURE NO.

- ☐ NA
- ☒ NDT-PT-4000 Rev. 2
- Appendix A Rev. 1

AREA TO BE INSPECTED

- ☒ *Full inspection;* 100% of Area Requested
- ☐ Other (Explain below)

MANUFACTURER

- ☒ Sherwin
- ☐ Magnaflux
- ☐ Other

DYE

- ☒ Color Contrast
- ☐ Fluorescent

Special PT Technique No.

- ☒ NA

CLEANING

	Pre	Post
Alcohol	☒	☒
Cleaner/Remover	☒	☒
Other	☐	☐

	Type	Batch No.	Time (min.)
Penetrant	DP-40	015-F1	10
Cleaner ☐ NA	DR-60	224-F4	5
Emulsifier ☒ NA			
Developer	D-100	216-G6	7

Developer Application

- ☒ Spray
- ☐ Dip
- ☐ Brush
- ☐ Powder

Light Level

- ☐ µW/cm 2
- ☒ Foot Candles

> 100

Technique Pre Approval Level/Date

- ☒ NA

Weld No., Part No., or Serial No.	Acc.	Rej.	No Rel. Ind.	Indications/Comments
WELD W-1 TOP		X		LINEAR INDICATION GREATER THAN 1/4"
WELD W-1 THRU W-6	X			SEE PAGE 3 OF REPORT FOR SIZE & LOCATION OF INDICATIONS

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Technician	PT Level	Interpreted by	PT Level	Reviewed by
WD PURDY W. Purdy	II	WD PURDY W. Purdy	II	John K. Keene
Date of Examination		**Date**		**Date**
10/10/94		10/10/94		10-14-94

TABLE I

LIMITS OF IMPERFECTIONS IN ACCEPTABLE WELDS

Imperfection	Limit	
	Class I Weld	Class II Weld
Cracks in weld bead	Unacceptable	Unacceptable
Cracks in parent metal	Unacceptable	Unacceptable
Crater Cracks	Unacceptable	Unacceptable
Incomplete fusion and inadequate joint penetration	Unacceptable	As determined by inspection methods for Class II welds, the aggregate length of the imperfections shall not exceed 1-1/2 T in a weld length of 6T and the length of any individual imperfection shall not exceed 1/2 T. If the weld length is less than 6T, the aggregate length of the imperfections shall not exceed 1/4 the weld length and the length of any individual imperfection shall not exceed 1/12 the weld length. (See Note 1)
Porosity (Internal)	The maximum size and population of porosity shall be in accordance with Appendix IV of Section VIII of ASME Boiler and Pressure Vessel Code.	Porosity is not normally detected by inspection methods for Class II welds and, therefore, is not a factor in their acceptability.
Inclusions (Internal)	Approximately spherical inclusions shall be evaluated as porosity. Any elongated inclusion which has a length greater than 1/4 T or 1/4 inch, whichever is less, shall be unacceptable. Any group of inclusions in line shall not have an aggregate length greater than T in a length of 12 T, except when the distance between successive inclusions exceeds 6L (where L is the length of the longest inclusions in the group). (See Note 1)	Inclusions are not normally detected by inspection methods for Class II welds and, therefore, are not a factor in their acceptability.
Undercut	Unacceptable	Unacceptable (See Note 2)
Overlap	Unacceptable	Unacceptable (See Note 2)
Convexity of butt welds on either side	Weld Size Up to 0.125 inch 0.125 to 0.500 inch 0.500 inch and larger	Maximum Reinforcement Height 0.050 inch 25% of weld size 0.125 inch
Concavity	Unacceptable in butt welds. In fillet welds, actual throat shall not be less than the theoretical throat for specified weld size.	
Size of fillet welds	Specified weld size (length of legs) +50%, -0%	

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NOTES:

1. (T) is the specified weld size.
2. Infrequent undercut and overlap may be acceptable.

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Page 3

welds = outer

1 Top 1 Linear 9/32"
1 Rounded ∠ 1/8"

1 Bot. 2 Rounded ∠ 3/32" To 1/16"

2 Top 2 Linear ∠ 1/8
2 Rounded ∠ 3/32" To 1/16"

2T = 1 inch 1 Rounded ∠ 1/16"
2T = 2 inch. 1 Rounded ∠ 1/16"

2 Bot 2 Rounded ∠ 3/32" To 1/16"

3 Top 2 Rounded ∠ 3/32" To 1/16"

3 Bot. 1 Rounded ∠ 1/16"

4 Top 2 Rounded ∠ 3/32" To 1/16"

4T = 9 3/4 inch. 1 Rounded ∠ 1/16"

4B = 3 inch 1 Rounded ∠ 1/16"

4 Bot. 1 Linear ∠ 1/8"

4 Bot 1 Rounded ∠ 1/16"

5 Top 2 Rounded ∠ 3/32 To 1/16"

5B = 7 1/2 inch 1 Linear ∠ 1/8"

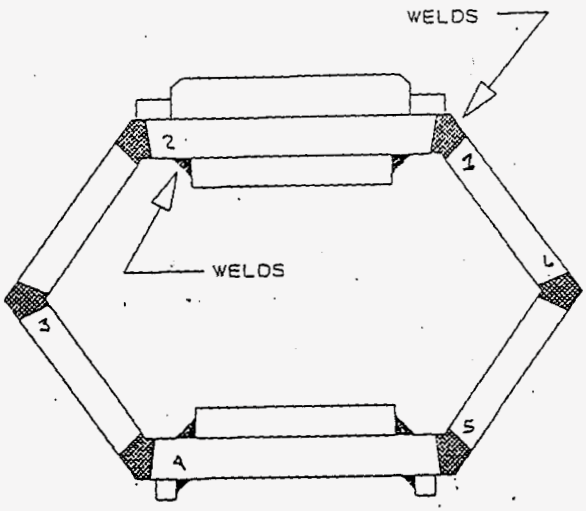
5B = 8 1/2 inch 1 Linear ∠ 1/8"

5B No indications

6 Top No indication

6B = 7 1/2 inch 1 Linear ∠ 1/8"

6 Bot No indications



Inner Welds no indications

FIGURE 2. MOUNTING BLOCK WELDS

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Doc Number PM/S Number

1. Data Sheet Number 2B-95-01013/W 2C-00097 D/S Status OPEN
   Work Item Title MAINTENANCE SUPPORT ANNUAL TESTING BUSS CASK

2. PM/S Type 7 INSTRUMENT CALIBRATION PROGRAM
   PM/S Title ANNUAL NDE TESTING OF THE BUSS
   PM/S Due Date 09/28/95 Frequency 365 Recall Basis 1 PERIODIC, CALENDAR DATE
   Operations Rel Reqd Y PM/S Authority LOWERY,JL

   Procedure Number N/A Title NOT APPLICABLE
   Procedure Date Revision Number
   Procedure Type FUNCTEST

3. Component Number USA-9511-B(U) System C99R
   Component Name USA-9511-B(U)
   Safety Class 3 Facility 2C
   Bldg/Rm 225B Other CRANE PAD Other
   Manufacturer SANDIA NAT Model R-1
   Serial Number
   Reference Drawings

4. Assoc Components | Assoc PM/S | Reference Documents | Type

5. Data Sheet Body

		Standards	Exp Date	Tolerance
Loop/Seq Number	T0001-1			
Mode	N/A			
Comp Admin Code	REG			
Cal Tag Status	ACTIVE			

NOTE: The BUSS cask is required to have annual NonDestructive Examination (NDE) testing performed according to Chapter 8, Section 8.1.4.1, 8.1.4.2 and 8.2 of the Safety Analysis Report for Packaging (SARP). The leak detector (Helium Mass Spectroscopy) must have a sensitivity of 5.0 x 10(-6) atm-cm(3)/sec.

1. Does the BUSS cask containment boundary meet the leak rate criteria of less than 1.0 x 10(-5) atm-cm(3)/sec? (Yes/~~No~~/~~NA~~) PTS 01/04/96

2. Does the lid seal meet the leak rate criteria of less than 1.0 x 10(-4) atm-cm(3)/sec? (Yes/~~No~~/~~NA~~) PTS 01/04/96

3. Does the upper port seal meet the leak rate criteria of less than 1.0 x 10(-4) atm-cm(3)/sec? (Yes/~~No~~/~~NA~~) PTS 01/04/96

4. Does the lower port seal meet the leak rate criteria of less than 1.0 x 10(-4) atm-cm(3)/sec? (Yes/~~No~~/~~NA~~) PTS 01/04/96

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	Doc Number	PM/S Number	
1. Data Sheet Number	2B-95-01013/W	2C-00097	D/S Status OPEN
Work Item Title	MAINTENANCE SUPPORT ANNUAL TESTING BUSS CASK		

5. Does the sum of the leak rates for the lid, upper and lower port meet the leak rate criteria of less than 1.0 x 10(-4) atm-cm(3)/sec?
   (Yes)/~~No/NA~~ TTS 01/04/~~95~~ TTS

6. Do the lift lugs meet the criteria of no detectable cracks using dye penetrant?
   (Yes)/~~No/NA~~ WDP 11/29/95

7. Do the trunnions meet the criteria of no detectable cracks using dye penetrant?
   (Yes)/~~No/NA~~ WDP 11/29/95

8. Restore BUSS cask to shipping configuration. [signature] 12/4/95

6. Data Sheet Complete Signature [signature] Date 12/5/95

. Res Code	Description	No.	Act Hrs
~~95~~ 23 (1/04/95 TTS)	Millwright	1	64

8. Completed Satisfactory YES

9. Comments
   INSTRUCTIONS: PERFORM ANNUAL NON-DESTRUCTIVE EVALUATION (NDE) OF THE BUSS CASK PER NDT-LT6000 AND NDT-PT4000.

TITLE:

GENERAL LIQUID PENETRANT EXAMINATION PROCEDURE

Approved by G. J. Fisher 12/29/93

A. J. Fisher, Manager
Quality Assurance

1.0 PURPOSE

This procedure establishes the minimum requirements for the control of liquid penetrant examination of materials and assemblies.

2.0 SCOPE

This procedure shall be used in conjunction with NDT-GA-2000, "General Administrative Procedure," for the administration of liquid penetrant examinations at WHC.

3.0 DEFINITIONS

nonaqueous developer

A developer in which the developing powder is applied as a suspension in a quick-drying solvent.

penetration time

The time allowed, after penetrant has been applied to the test surface, for the penetrant to enter discontinuities.

post-emulsification

A penetrant removal technique employing a separate emulsifier applied over the surface penetrant to make it removable with water spray.

4.0 RESPONSIBILITIES

The Nondestructive Examination (NDE) group is responsible for maintaining this procedure current to the requirements of the American Society of Mechanical Engineers (ASME) Code and applicable WHC-controlled manuals.

5.0 GENERAL REQUIREMENTS

5.1 Relation to Other Documents

Documents referenced in this procedure shall be considered part of this procedure to the extent specifically referenced herein.

5.2 Certification of Personnel

All WHC personnel performing liquid penetrant examination for acceptance shall be certified in accordance with the requirements of WHC-CM-4-39, *Qualification and Certification of Nondestructive Examination Personnel.*

5.3 Procedure Qualification

Standard techniques (Appendices A and B) shall be qualified by demonstration to the satisfaction of the Authorized Inspector and the NDE Level III liquid penetrant examiner in the standard temperature range of 60 degrees Fahrenheit to 125 degrees Fahrenheit. This will be accomplished by using a comparator block as described in Appendix C. This will be done for each penetrant family used at WHC as a standard technique and documentation shall be in accordance with Appendix C and NDT-GA-2000.

5.4 Deviations from Requirements

If it becomes necessary to change the examination parameters outside of the limit of requirements contained in this procedure, a special technique shall be prepared and qualified by demonstration. Special technique qualification shall be approved by an NDE Level III liquid penetrant examiner before its use in an actual examination. The records documenting the technique qualification shall be retained and submitted to the Authorized Code Inspector for concurrence, where required. Where the specified sensitivity or the test requirements are not achieved, the appropriate documentation shall be prepared in accordance with NDT-GA-2000.

5.5 Special Instructions

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5.5.1 Chemical and fire hazards

Toxic and/or flammable materials, for cleaning or examination, shall be used in accordance with the manufacturer's recommendations and applicable WHC safety and disposal requirements.

5.5.2 Handling and cleanliness considerations

Lead, aluminum, and carbon steel shall not contact stainless steel and high-nickel alloys being examined. Additional restrictions, as well as specific handling and cleanliness instructions, shall be specified in the

Request/Instruction for Nondestructive Examination (R/I) or documents directly specified therein.

5.6 Applicable Test Equipment and Approved Material

5.6.1 Liquid penetrant comparators

Penetrant comparators as described in Appendix C shall be used to qualify penetrant examination techniques. (See Appendix C for manufacturing and qualification specifications.)

5.6.2 Materials

5.6.2.1 Liquid penetrant system materials

Penetrant examination materials shall be restricted to manufacturer-designated families of materials. Control of contaminants in all penetrant and associated cleaning materials shall be as specified in NDT-GA-2000.

5.6.2.2 Cleaning solvents

Pre- and post-cleaning solvent shall be either reagent grade (or better) acetone, reagent grade (or better) alcohol, or penetrant family cleaner, unless otherwise specified in the R/I.

5.6.2.3 Masking/marking materials

Tapes and elastomers used as plugging or masking materials shall be compatible with the material under test. Marking materials shall be as specified in the R/I.

5.6.2.4 Cloth/paper

Cloth or paper towels used in penetrant examination shall be clean and lint free.

5.6.3 Support Equipment

5.6.3.1 Penetrant spraying equipment

Systems for spraying penetrants, other than spraying from commercially available pressurized containers, shall be equipped with filters placed on the upstream side near the air inlet to preclude contamination of the penetrant by oil, water, or dirt sediment that may have collected in the lines.

5.6.3.2 Warm water rinse equipment

Warm water rinses used in the fluorescent post-emulsified penetrant system shall not exceed 50 psi in pressure and 110 degrees Fahrenheit in temperature.

5.6.3.3 Ultraviolet light sources

High-intensity black lights (near ultraviolet) shall be used for illumination of fluorescent penetrant indications. The black lights shall be provided with suitable clean filters (Kopp' Number 41 or equivalent) and will pass near ultraviolet in the range between 330 nm and 390 nm but will filter out the short wavelength rays and most of the visible light.

5.6.3.4 Ultraviolet light meters

An ultraviolet sensitive light meter shall be used to determine the black light intensity in the area of interest on the component. Calibration shall be in accordance with NDT-GA-2000.

6.0 EXAMINATION REQUIREMENTS

6.1 Examination Prerequisites

6.1.1 Materials porosity

Liquid penetrant examination shall be limited to nonporous metallic, ceramic, glassy, or plastic materials unless a special technique is written and qualified for a porous material.

6.1.2 Surface temperature

The standard temperature range for liquid penetrant examination is from 60 degrees Fahrenheit to 125 degrees Fahrenheit. The surface to be examined and the penetrant material shall be maintained in this temperature range throughout the examination. If the penetrant examination is outside of this range, a special technique shall be prepared with penetrant and surface temperatures as follows.

1. Below 60 degrees Fahrenheit

   The surface to be examined and the penetrant material shall be the same temperature throughout the examination.

2. Above 125 degrees Fahrenheit

There is no requirement that the penetrant material be maintained above room temperature.

6.1.3 Surface irregularities

Surface preparation by grinding, machining, or other methods may be necessary where surface irregularities could mask indications of unacceptable discontinuities. Surface blasting such as sand blasting, grit blasting, metal shot peening, or vapor blasting shall not be done on surfaces before performing liquid penetrant examinations.

6.1.4 Surface cleanliness

Before the liquid penetrant examination, the surface to be examined and all adjacent areas within at least 1 inch shall be dry and free of any dirt, grease, lint, scale, welding flux, weld spatter, oil, or other extraneous matter that could obscure surface openings or otherwise interfere with the examination.

6.1.5 Prevention of feature contamination

Small fabricated grooves or holes, which lead to areas from which it would be difficult to remove liquid penetrant materials, shall be plugged or masked before examination. The materials used for this purpose shall be as specified in paragraph 5.6.2.3. Where it is not possible to plug or mask these areas, customer agreement shall be obtained to permit residual penetrant materials and documented on the R/I via direct signature or per telecon.

6.2 Examination Set-up Considerations

6.2.1 Basic geometric considerations

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The extent of coverage is as follows.

6.2.1.1 Welds

For all *ASME Boiler and Pressure Vessel Code*, Section III, welds, the entire length of the weld including the adjacent base metal for at least 1/2 inch on each side of the weld shall be examined. If this requirement is unattainable, a nonconformance report (NCR) shall be written before the examination to document the condition.

For all other welds, the entire length of the weld including the base metal region lying to either side of the weld to the limits of either the heat-affected zone or the span of one weld bead width, whichever is greater, shall be examined. Special conditions may warrant other coverage requirements. Such special considerations shall be noted on either the R/I or the Penetrant Procedure and Test Report.

6.2.1.2 Materials

The examination shall encompass the surface area as requested on the R/I.

6.2.1.3 Multiple examinations

If each penetrant examination step cannot be completed within the prescribed time, because of the size of the surface to be examined, then the surface shall be examined in suitably sized increments. Sufficient overlap shall be done to ensure 100 percent coverage of the area requested.

6.2.2 Penetrant

Either color contrast solvent-removable or fluorescent post-emulsified penetrant systems may be employed. Other penetrant systems shall be employed only when specifically requested on the R/I and after consultation with, and approval by, an NDE Level III liquid penetrant examiner. A special technique shall be generated. Fluorescent penetrant examination shall not follow a color contrast penetrant examination. In either case, only those materials designated by the manufacturer as belonging to a single penetrant family shall be employed in any specific examination.

6.2.3 Pre-examination considerations

6.2.3.1 Prerequisites

A pre-examination visual inspection shall be made on the test object to determine if all examination prerequisites contained in paragraph 6.1 can be satisfied. If the prerequisites have not been met, the customer shall be informed of the condition, and examination shall be postponed until all examination prerequisites can be met.

6.2.3.2 Identification

Traceability shall be provided such that the examination report, the object, and the area examined can be identified with respect to each other at any time.

6.2.4 Post-examination considerations

6.2.4.1 Post-examination cleaning

Following each penetrant examination, all penetrant examination materials shall be completely cleaned from the test surface.

6.2.4.2 Application of protective coating

The application of protective coatings by NDE personnel shall be specified in the R/I and shall be limited to those for which NDE personnel have been trained.

6.3 Results of Examination

6.3.1 Evaluation of results

6.3.1.1 Interpretation of indications

The NDE certified liquid penetrant examiner (Level II or III) shall interpret indications and determine whether they represent relevant or nonrelevant indications in accordance with the applicable acceptance Code or Standard as noted on the R/I. Any indication which is believed to be nonrelevant shall be regarded as a defect and shall be re-examined to verify whether or not an actual defect is present. Surface conditioning may precede the re-examination.

6.3.1.2 Acceptance criteria

Acceptance criteria shall be specified in the R/I.

6.3.1.3 Rework/repair

Repaired areas shall be cleaned and re-examined using the same penetrant system that was used to locate the original defect.

6.3.2 Records of examination

6.3.2.1 Record contents

The record of examination shall be the Penetrant Procedure and Test Report, Figure 1. The report shall include the defining examination parameters and the results of the examination.

6.3.2.2 Report

The Penetrant Procedure and Test Report shall describe the documentation of specific examination parameters and the results of the examination.

The documentation of specific examination parameters shall contain the following information as a minimum.

- Job number
- Requester and address
- Project/system/work package/traveler
- Acceptance standard
- Drawing number
- Material

- NCR number
- Product or stage of manufacture
- WHC procedure and revision number
- Inspection area
- Penetrant material manufacturer, type, and batch number
- Special technique number
- Penetrant technique parameters
- Pre- and post-cleaning materials
- Technique pre-approval
- Examiner and certification level
- Interpreter(s) and certification level
- Date of examination
- Level III review and signature

The results of the examination shall contain the following information.

- Specific part identification
- Disposition
- Indications/Comments

Locations on the report form, which are not applicable to a particular examination, shall be shown as NA (not applicable).

6.3.2.3 Records storage

Records of examination shall be retained in accordance with NDT-GA-2000.

7.0 REFERENCES

All documents referenced below shall be maintained to the latest revision.

American Society of Mechanical Engineers, *ASME Boiler and Pressure Vessel Code*.

WHC-CM-4-38, *Nondestructive Examination Procedures*, NDT-GA-2000, "General Administrative Procedure."

WHC-CM-4-39, *Qualification and Certification of Nondestructive Examination Personnel*.

Figure 1. Penetrant Procedure and Test Report.
(BD-7320-043)

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Westinghouse Hanford Company

NDE PENETRANT PROCEDURE AND TEST REPORT
NON DESTRUCTIVE EXAMINATION
306 BLDG., 300 AREA - TEL. 376-5401

Job No.

Requestor (client) | Company | Project/System/Work Package/Traveler No.

MSN | Bldg. | Area

Acceptance Std. | Section | Para. | Date | ☐ NA | Dwg. No. | ☐ NA | Material | NCR | ☐ NA

PRODUCT OR STAGE OF MANUFACTURING
☐ As Cast ☐ Weld Prep
☐ As Forged ☐ Root Pass
☐ As Machined ☐ Final
☐ As Assembled ☐ Other _____
☐ As Welded ☐ Repair No. _____

WHC PROCEDURE NO.
☐ NA
☐ NDT-PT-4000 Rev _____
Appendix _____ Rev. _____

AREA TO BE INSPECTED
☐ Full Inspection; 100% of Area Required
☐ Other (Explain below)

MANUFACTURER
☐ Sherwin
☐ Magnaflux
☐ Other _____

DYE
☐ Color Contrast
☐ Fluorescent

Special PT Technique No.
☐ NA

CLEANING | Pre | Post
Alcohol | ☐ | ☐
Cleaner/Remover | ☐ | ☐
Other _____ | ☐ | ☐

	Type	Batch No.	Time (min.)
Penetrant			
Cleaner ☐ NA			
Emulsifier ☐ NA			
Developer			

Developer Application
☐ Spray
☐ Dip
☐ Brush
☐ Powder
☐ NA

Light Level
_____ ☐ µW/cm²
☐ Foot Candles

Technique Pre-Approval | Level/Date

Weld No., Part No., or Serial No.	Acc.	Rej.	No Rel. Ind.	Indications/Comments

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Tech | PT Level | PT Level III Review

Date of Examination | Date of Examination | Date

SAMPLE

APPENDIX A
COLOR CONTRAST SOLVENT-REMOVABLE STANDARD TECHNIQUE

1.0 PURPOSE

This appendix defines the specific requirements for application and examination using the color contrast solvent-removable standard technique.

2.0 SCOPE

This appendix shall be used in conjunction with NDT-PT-4000, "General Liquid Penetrant Examination Procedure," and NDT-GA-2000, "General Administrative Procedure."

3.0 EXAMINATION REQUIREMENTS

3.1 PRE-CLEANING

The area to be examined shall be cleaned by dipping, spraying, swabbing or brushing before penetrant application. Ultrasonic cleaning is the recommended practice for items that have been previously penetrant inspected.

3.2 DRYING

Immediately following solvent pre-cleaning, the surface to be examined shall be thoroughly dried by normal evaporation or with forced hot air, provided the surface temperature is not raised above 125 degrees Fahrenheit. The surface to be examined shall be allowed a minimum of 5 minutes drying time, between the time when the last trace of cleaning solvent visually disappears and the application of penetrant, to allow complete evaporation of the cleaning solvent.

3.3 PENETRANT APPLICATION

The surface to be examined shall be thoroughly coated with penetrant by brushing, spraying, or dipping. Pools of penetrant should be prevented from forming on the object. The test surface shall be kept wetted for the minimum period of 10 minutes and not more than 1 hour. If the penetrant material should thicken, congeal, or dry, the test surface shall be completely rewetted with the penetrant and shall be kept thoroughly wetted for one additional penetration time.

APPENDIX A
COLOR CONTRAST SOLVENT-REMOVABLE STANDARD TECHNIQUE

3.4 EXCESS PENETRANT REMOVAL

After the penetration time has elapsed, the excess penetrant on the surface shall be removed with a lint-free cloth or absorbent paper, taking care to minimize removal of penetrant from discontinuities. Repeat the removal operation until most traces of penetrant have been removed. The remaining traces shall be removed by wiping the surface lightly with a cloth or absorbent paper moistened with the penetrant family cleaner/remover. Flushing the surface with solvent, following the application of the penetrant and before development, is prohibited.

3.5 DRYING

After excess penetrant removal, the surfaces shall be dried by normal evaporation for a minimum of 5 minutes and a maximum of 15 minutes.

3.6 DEVELOPING

Nonaqueous developer shall be applied as soon as practicable after drying. It shall be applied by spraying, except where safety or restricted access preclude it. The developer shall be thoroughly agitated before application and applied in the form of a light fog spray covering the examination surface in a thin even film. Under conditions of safety or restricted access, the developer may be applied by brushing, covering the surface in a thin film without excessive smearing of residual penetrant. It shall be up to the discretion of the examiner who will be interpreting the results as to whether brushing on developer is applicable.

In the event the developer is applied too heavily, or there is excessive coloration (background), the surface shall be re-examined beginning with pre-cleaning, Section 3.1.

3.7 EXAMINATION

The examination is to be conducted in a well-lighted area. The minimum illumination at the examination surface shall be 100 foot candles.

The surface under examination shall be observed during the application of developer and immediately following developer application to detect the nature of any indications which tend to bleed out profusely. Developing time for final interpretation begins immediately after the nonaqueous developer is dry. Final interpretation shall be made after allowing the penetrant to bleed out for 7 to 30 minutes. If bleed-out does not alter the examination results, longer periods up to 1 hour are permitted.

APPENDIX B
FLUORESCENT POST-EMULSIFIED STANDARD TECHNIQUE

1.0 PURPOSE

This appendix defines the specific requirements for application and examination using the fluorescent post-emulsified standard technique.

2.0 SCOPE

This appendix shall be used in conjunction with NDT-PT-4000, "General Liquid Penetrant Examination Procedure," and NDT-GA-2000, "General Administrative Procedure."

3.0 EXAMINATION REQUIREMENTS

3.1 PRE-CLEANING

The area to be examined shall be cleaned by dipping, spraying, swabbing or brushing before penetrant application. Ultrasonic cleaning is the recommended practice for items that have been previously penetrant inspected.

3.2 DRYING

Immediately following solvent pre-cleaning, the surface to be examined shall be thoroughly dried by normal evaporation or with forced hot air, provided the surface temperature is not raised above 125 degrees Fahrenheit. The surface to be examined shall be allowed a minimum of 5 minutes drying time, between the time when the last trace of cleaning solvent visually disappears and the application of penetrant, to allow complete evaporation of the cleaning solvent.

3.3 PENETRANT APPLICATION

The surface to be examined shall be thoroughly coated with penetrant by brushing, spraying or dipping. Pools of penetrant should be prevented from forming on the object. The test surface shall be kept wetted for the minimum period of 10 minutes and not more than 1 hour. If the penetrant material should thicken, congeal, or dry, the test surface shall be completely rewetted with the penetrant and shall be kept thoroughly wetted for one additional penetration time.

APPENDIX B
FLUORESCENT POST-EMULSIFIED STANDARD TECHNIQUE

3.4 EXCESS PENETRANT REMOVAL

After the penetration time has elapsed, the excess penetrant on the surface shall be removed by emulsification. The emulsifier shall be applied by spraying or dipping. Emulsification time shall be governed by surface roughness and the type of discontinuities sought. It shall not exceed 5 minutes unless other times are qualified in a special technique.

After emulsification, the mixture shall be removed by a warm water rinse. During the rinse and after washing, the area undergoing examination shall be visually inspected with a black light to ensure complete removal of all penetrant from the surface. If the examination area does not wash clean and has an excessive fluorescent background because of insufficient emulsification of the penetrant, that area shall be completely reprocessed with a longer emulsification time. That longer time shall not exceed 5 minutes unless the longer time has been qualified as a special technique. Reprocessing shall begin with the pre-cleaning operation, Section 3.1.

3.5 DRYING

The examination surface shall be dry before nonaqueous developer is applied.

The surfaces may be dried by blotting with clean lint-free materials or by using circulating warm air, provided the temperature of the surface is not raised above 125 degrees Fahrenheit. The time for surface drying after removal of last traces of excess penetrant and before application of developer shall be limited to a minimum of 5 minutes and a maximum of 15 minutes.

3.6 DEVELOPING

Nonaqueous developer shall be applied as soon as practicable after drying. It shall be applied by spraying, except where safety or restricted access preclude it. The developer shall be thoroughly agitated before application and applied in the form of a light fog spray covering the examination surface in a thin even film. Under conditions of safety or restricted access, the developer may be applied by brushing, covering the surface in a thin film without excessive smearing of residual penetrant. It shall be up to the discretion of the examiner who will be interpreting the results as to whether brushing on developer is applicable.

APPENDIX B
FLUORESCENT POST-EMULSIFIED STANDARD TECHNIQUE

In the event the developer is applied too heavily, or there is excessive fluorescence (background), the surface shall be re-examined beginning with pre-cleaning, Section 3.1.

3.7 EXAMINATION

The examination is to be conducted in a darkened area using the filtered "black light." The bulb shall be allowed to warm up for at least 5 minutes before use in an examination. The black light intensity at the surface under examination shall be determined at least once every 8 hours and whenever the work location is changed, using a meter which is sensitive to light in the ultraviolet spectrum, centered on 365 nm. Two readings shall be taken: the first without a filter and the second with an ultraviolet (365 nm) filter over the sensing element of the meter. The second reading is deducted from the first, and the difference shall be a minimum of 800 $\mu W/cm^2$. The person evaluating the indications shall adapt his eyes before inspection. When entering the darkened inspection area from a room illuminated artificially, at least 5 minutes shall be allowed for dark adaptation. When entering the darkened inspection area from a sunlight illuminated area, at least 10 minutes shall be allowed for dark adaptation. If the examiner wears glasses or lenses, they shall not be photosensitive.

The surface under examination shall be observed during the application of developer and immediately following developer application to detect the nature of any indications that tend to bleed out profusely. Developing time for final interpretation begins immediately after the nonaqueous developer is dry. Final interpretation shall be made after allowing the penetrant to bleed out for 7 to 30 minutes. If bleed-out does not alter the examination results, longer periods up to 1 hour are permitted.

APPENDIX C
COMPARATOR BLOCK MANUFACTURE AND USE IN TECHNIQUE QUALIFICATION

1.0 PURPOSE

This appendix defines the specific requirements for the manufacture of comparator blocks and how they are used in technique qualification.

2.0 SCOPE

This appendix shall be used in conjunction with NDT-PT-4000, "General Liquid Penetrant Examination Procedure," and NDT-GA-2000, "General Administrative Procedure."

3.0 EXAMINATION REQUIREMENTS

3.1 MANUFACTURING SPECIFICATIONS

Conventional American Society of Mechanical Engineers (ASME) liquid penetrant comparators shall be made of aluminum, ASTM* B209, Type 2024 or SB-211, Type 2024, 3/8-inch thick, and shall have approximate face dimensions of 2 by 3 inches. At the center of each face, an area approximately 1 inch in diameter shall be marked with 950 degrees Fahrenheit temperature-indicating crayon or paint. The marked area shall be heated with a blow torch, or similar device, to a temperature between 950 and 975 degrees Fahrenheit. The specimen shall then be immediately quenched in cold water to produce a network of fine cracks on each face. The block shall then be dried by heating to approximately 300 degrees Fahrenheit. The block will then be given a unique number to distinguish it from other blocks. An example block is shown in Figure C-1. Commercially available crack blocks which have been fabricated in accordance with the ASME Boiler and Pressure Vessel Code may also be used.

3.2 TECHNIQUE QUALIFICATION

As a standard technique, the temperature of the penetrant and the surface of the part to be processed shall not be below 60 degrees Fahrenheit nor above 125 degrees Fahrenheit throughout the examination period. For standard technique qualification a demonstration examination of a cracked block shall be provided for approval of the Authorized Inspector and the Nondestructive Examination (NDE) Level III liquid penetrant examiner. The demonstration will be done at 60 degrees Fahrenheit and then again at 125 degrees Fahrenheit to show penetration effectiveness throughout this temperature range.

*American Society for Testing and Materials.

APPENDIX C
COMPARATOR BLOCK MANUFACTURE AND USE IN TECHNIQUE QUALIFICATION

All other penetrant techniques shall be qualified before use, for the temperatures at which they will be used, by comparative demonstration to the standard technique on an ASME crack block as defined in Section 3.1. Technique qualification shall be approved by the Authorized Inspector (where applicable) and by a NDE Level III in liquid penetrant. Technique qualification shall be documented using the Technique Qualification Sheet, Figure C-2 and controlled according to NDT-GA-2000.

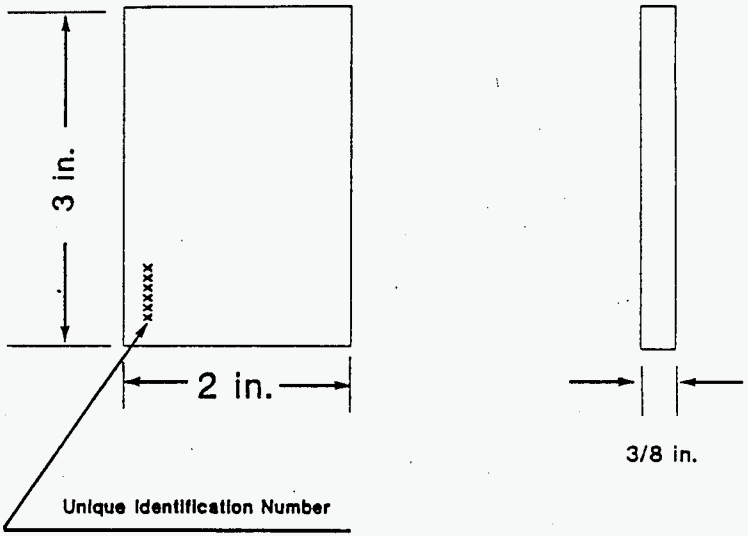
Where examinations at temperatures below 60 degrees Fahrenheit are to be qualified, the penetrant materials and block shall be cooled to below the proposed examination temperature before the application of penetrant materials and maintained at this temperature throughout the examination. Photographs shall be taken at various stages of development. The same block shall now be cleaned ultrasonically for at least 4 hours and then reprocessed using the standard technique (60 to 125 degrees Fahrenheit) with photographs taken at the same intervals as taken during the low-temperature examination. Indications of cracks shall be compared between the photographs and if the indications obtained under the proposed conditions are essentially the same as obtained during examination between 60 and 125 degrees Fahrenheit, the proposed technique shall be considered qualified for use.

If the proposed temperature for the examination is above 125 degrees Fahrenheit, then only the block need be held at this temperature throughout the examination, not the penetrant materials. The block shall be photographed at the proposed temperature and compared as described above.

A special technique qualified at a temperature lower than 60 degrees Fahrenheit shall be considered qualified from that temperature to 60 degrees Fahrenheit.

To qualify a technique for temperatures above 125 degrees Fahrenheit, the upper and lower temperature limits shall be established, and the special technique shall be qualified at these temperatures.

Figure C-1. Liquid Penetrant Comparator.



(NOTE: Dimensions given are for guidance only and are not critical.)

Figure C-2. Technique Qualification Sheet.

REFERENCE NDT-PT-4000 REV 1

TECHNIQUE QUALIFICATION SHEET

STANDARD TECHNIQUE ☐
SPECIAL TECHNIQUE ☐
#

PENETRANT MATERIALS MANUFACTURER

COMPARATOR BLOCK ID. # _____

QUALIFIED TEMPERATURE RANGE
_____ (MINIMUM) TO _____ (MAXIMUM)

TECHNIQUE QUALIFICATION

○ PENETRANT _____	PENETRATION TIME	_____ MINIMUM	_____ MAXIMUM
○ CLEANER/REMOVER _____ ☐ NA	DRY TIME	_____ MINIMUM	_____ MAXIMUM
○ EMULSIFIER _____ ☐ NA	EMULSIFIER TIME	_____ MINIMUM	_____ MAXIMUM
○ DEVELOPER _____	DEVELOP TIME	_____ MINIMUM	_____ MAXIMUM

ADDITIONAL COMMENTS/INFORMATION

REFERENCE STANDARD TECHNIQUE

○ PENETRANT _____	PENETRATION TIME	_____
○ CLEANER/REMOVER _____ ☐ NA	DRY TIME	_____
○ EMULSIFIER _____ ☐ NA	EMULSIFIER TIME	_____
○ DEVELOPER _____	DEVELOP TIME	_____

PT EXAMINER / PT LEVEL	PT LEVEL III APPROVAL	AUTHORIZED INSPECTOR ☐ NA
DATE	DATE	DATE

PROCEDURE REVIEW AND APPROVAL

I have reviewed and approved the Nondestructive Examination Procedure NDT-PT-4000 revision 2 for conformance to the ASME Boiler and Pressure Vessel Code, 1992 issue, A-93 Addenda.

Please place this sheet in WHC-CM-4-38, in front of the above mentioned procedure.

A. F. Pardini
NDE Level III Penetrant Examiner

11/7/94
Date

J. C. Krogness, Manager
Nondestructive Examination

11-7-94
Date

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APPENDICES

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WELDING, CARBON, LOW-ALLOY, AND CORROSION-RESISTANT STEELS

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Drawing Call-Out: Weld and Inspect per 9912119-00 Class (1), (2), (3).

(1) Specify applicable class of weld from 1.1.
(2) Specify welding rods or electrodes per applicable material specification.
(3) Supplemental notes may be required. (See 6.1.)

1. GENERAL

1.1 Scope. This standard covers the requirements for process control, inspection, and acceptance of Class I and Class II arc welds in carbon and low-alloy steels and corrosion-resistant steels.

Class I -- A weld which is considered critical and, for higher reliability, has comprehensive inspection and nondestructive testing. See 4.4.2.1.

Class II -- A weld which has less stringent limits on imperfections and has less comprehensive inspection and nondestructive testing. See 4.4.2.2.

1.2 Definitions.

1.2.1 Welding Terms and Definitions. Welding terms and definitions used in this standard shall be in accordance with AWS A3.0 except as follows:

Porosity -- approximately spherical-shaped voids in the metal.

Aligned Porosity -- four or more individual voids within a specified weld length whose radiographic images are intersected by a straight line.

1.2.2 Welding Symbols. Welding symbols used on the product drawings shall be in accordance with ANSI/AWS A2.4.

1.2.3 Pentagon M Definition. /M/ is a symbol placed adjacent to a section of paragraph to designate requirements of information pertinent only to Bendix KCD, its suppliers and subcontractors.

1.2.4 /M/ Essential Process Variable. A welding condition which, when changed, will affect the mechanical or chemical properties (other than notch toughness) of the weldment.

2. DOCUMENTS

2.1 Required. The following documents are requirements to the extent stated elsewhere in this standard:

	9912114-00	Welders and Welding Operators Qualification
/M/	9921006-02	Inspection, Penetrant
/M/	9948013-00	Inspection, Radiographic
	MIL-I-6866B	Inspection, Penetrant
	MIL-I-6868E	Inspection, Magnetic Particle
	MIL-STD-00453B	Inspection, Radiographic
	MIL-STD-1595	Aerospace Welder Performance Qualification
	ANSI/AWS A2.4-76	Symbols For Welding and Nondestructive Testing
	AWS A 3.0-76	Welding Terms and Definitions
	ANSI/ASME Boiler and Pressure Vessel Code, Section VIII, 1977 Edition	Pressure Vessels
	ANSI/ASME Boiler and Pressure Vessel Code, Section IX, 1977 Edition	Welding and Brazing Qualifications

3. REQUIREMENTS

3.1 Welding Process. Welding shall be done by any of the arc welding processes, using manual, semiautomatic, and automatic techniques. When multiple choice of welding processes is given on a drawing, it shall be the responsibility of the fabricator to determine which process is appropriate for the specific weldment concerned.

3.2 Qualification of Welders and Welding Operators.

3.2.1 Manual or Semiautomatic Equipment. Welders using manual or semiautomatic welding equipment shall be qualified in accordance with one of the following:

(1) MIL-STD-1595

(2) ANSI/ASME Boiler and Pressure Vessel Code, Section IX

/M/ (3) 9912114

3.2.2 Automatic Equipment. Welding operators using automatic welding equipment shall be qualified in accordance with one of the following:

(1) MIL-STD-1595

(2) ANSI/ASME Boiler and Pressure Vessel Code, Section IX

/M/ (3) 9912114

3.3 Qualification of Welding Procedure.

3.3.1 The welding procedure for all Class I welds shall be qualified, and for those Class II welds for which the drawing requires qualification of procedure.

/M/ See 3.3.2.c for additional welding procedure requirements.

3.3.2 Welding procedure shall be qualified before welding is conducted on weldments for delivery, and shall consist of:

3.3.2 continued

a. Making sample welds on test parts which are made from base metal and filler metal meeting drawing requirements for weldments for delivery and which represent the thickness and design characteristics of welds in weldment for delivery. All aspects of welding practice appropriate for use on weldments for delivery, such as inert gas backup, back chipping or grinding root passes, preheat, current settings, etc., as applicable shall be documented.

b. Inspecting sample welds using methods specified on the drawing and/or herein, and by sectioning in a adequate number of places, to ensure that welds meet applicable quality requirements.

c. On the basis of a. and b. above, establish written procedures for all welds present in the weldment for delivery. These procedures shall be followed in fabricating weldments for delivery. /M/ for all welds, regardless of class and qualification applicability, a welding procedure consisting of detailed methods and essential process variables as determined by engineering shall be included in the manufacturing work directions.

d. All welding procedures and qualification inspection data shall be recorded and kept on file by the welding fabricator and shall be available to the Buyer.

e. When so specified, the welding procedure shall be subject to Sandia approval prior to welding on parts intended for delivery.

3.4 Weld Preparation. Loose scale, slag, rust, grease, oil, and other foreign matter shall be removed from surfaces to be welded.

3.4.1 Carbon and Low-Alloy Steels. Beveling and weld preparation may be done by oxygen cutting, provided cracking does not occur in the metal.

3.4.2 Corrosion-Resistant Steels. Beveling and weld preparation may be done by flux-oxygen cutting, provided cracking does not occur in the metal and provided at least 1/8 inch of metal is removed from all cut edges by mechanical means, grinding, etc.

3.5 Preheat.

3.5.1 Carbon and Low-Alloy Steels. Low-alloy steels having a carbon content greater than 0.25% and carbon steels having a carbon content greater than 0.35% shall be preheated to and maintained at a minimum temperature of 350°F during welding.

3.5.2 Corrosion-Resistant Steels. Hardenable steels of the 400 series shall be preheated to avoid cracking.

3.6 Low Hydrogen Covered Electrodes (EXX15, EXX16, EXX18 or EXX28). To prevent cracking in welds, low hydrogen flux-covered electrodes shall be stored and used in accordance with the recommendations of the electrode manufacturer and the electrode material specification.

3.7 Weld Defects. Imperfections that exceed the limits specified in Table I shall be considered defects and are unacceptable.

TABLE I

LIMITS OF IMPERFECTIONS IN ACCEPTABLE WELDS

Imperfection	Limit	
	Class I Weld	Class II Weld
Cracks in weld bead	Unacceptable	Unacceptable
Cracks in parent metal	Unacceptable	Unacceptable
Crater Cracks	Unacceptable	Unacceptable
Incomplete fusion and inadequate joint penetration	Unacceptable	As determined by inspection methods for Class II welds, the aggregate length of the imperfections shall not exceed 1-1/2 T in a weld length of 6T and the length of any individual imperfection shall not exceed 1/2 T. If the weld length is less than 6T, the aggregate length of the imperfections shall not exceed 1/4 the weld length and the length of any individual imperfection shall not exceed 1/12 the weld length. (See Note 1)
Porosity (Internal)	The maximum size and population of porosity shall be in accordance with Appendix IV of Section VIII of ASME Boiler and Pressure Vessel Code.	Porosity is not normally detected by inspection methods for Class II welds and, therefore, is not a factor in their acceptability.
Inclusions (Internal)	Approximately spherical inclusions shall be evaluated as porosity. Any elongated inclusion which has a length greater than 1/4 T or 1/4 inch, whichever is less, shall be unacceptable. Any group of inclusions in line shall not have an aggregate length greater than T in a length of 12 T, except when the distance between successive inclusions exceeds 6L (where L is the length of the longest inclusions in the group). (See Note 1)	Inclusions are not normally detected by inspection methods for Class II welds and, therefore, are not a factor in their acceptability.
Undercut	Unacceptable	Unacceptable (See Note 2)
Overlap	Unacceptable	Unacceptable (See Note 2)
Convexity of butt welds on either side	Weld Size Up to 0.125 inch 0.125 to 0.500 inch 0.500 inch and larger	Maximum Reinforcement Height 0.050 inch 25% of weld size 0.125 inch
Concavity	Unacceptable in butt welds. In fillet welds, actual throat shall not be less than the theoretical throat for specified weld size.	
Size of fillet welds	Specified weld size (length of legs) +50%, -0%	

NOTES:

1. (T) is the specified weld size.
2. Infrequent undercut and overlap may be acceptable.

3.8 Repair of Defects. Repair of defects is permissible, if the repaired weldment, the repair weld itself, and the adjacent parent metal meet the requirements of the original weldment. Weldments that are heat treated after welding may be repair-welded only after reduction to a strength level lower than 125,000 psi tensile ultimate, and provided that heat treatment follows repairing. A repaired weldment shall be reinspected in the same manner as the original weldment.

3.9 Marking. Impression stamping and other marking methods that may degrade the weldment shall be used only when permitted and then only in the area designated by the product drawing.

4. QUALITY PROVISIONS

4.1 Lot Definition. A lot shall consist of all weldments of one design submitted for inspection at one time.

4.2 Responsibility for Inspection and Testing. Inspection and testing specified herein and on the product drawing shall be the responsibility of the Supplier.

4.3 Inspection Sequence. Weldments shall be inspected after any heat treatment and after any cleaning or other preparation required for proper inspection.

4.4 Inspection and Testing Requirements.

4.4.1 In-Process Inspection. In-process inspection shall be performed to verify conformance to the weld preparation requirements in 3.4 and the preheat requirements of 3.5.

4.4.2 Product Inspection and Testing.

4.4.2.1 Class I Welds. The inspection requirements for Class I welds shall be:

(1) 100% visual inspection

(2) 100% penetrant or magnetic particle inspection, and

(3) 100% radiographic inspection

4.4.2.2 Class II Welds. The inspection requirement for Class II welds shall be:

(1) 100% visual inspection

(2) Penetrant or magnetic particle inspection of a 10% sample of each lot of weldments but never fewer than one weldment per lot. The sample shall be selected at random. If any weldment in the sample is found defective, the lot shall be rejected. Weldments of a rejected lot may be individually accepted by 100% penetrant inspection.

NOTE: Table 1 limits imperfections in Class II welds, and, therefore, describes the quality of the weld regardless of the fact that the required visual and penetrant inspection may not detect internal defects.

4.4.2.3 Class I and Class II Welds. Under the referee circumstances, the Production Agency reserves the right to require removal of a portion of any doubtful weld for testing or metallurgical examination. This portion can be removed by trepanning or other suitable method.

4.5 Inspection and Testing Methods.

4.5.1 Visual Inspection. Visual examination of welds and adjacent parent metal shall be with the aid of magnification not exceeding 10X.

4.5.2 Penetrant, Magnetic Particle and Radiographic Inspection. Penetrant inspection shall be in accordance with MIL-I-6866 or 9921006. Magnetic particle inspection shall be in accordance with MIL-I-6868. Radiographic inspection shall be in accordance with MIL-STD-453 or 9948013, Quality Level 2.

4.6 Inspection Records. The Supplier shall maintain the inspection records for at least one year after completion of welding.

5. PACKAGING, HANDLING AND STORAGE

Not applicable.

6. NOTES

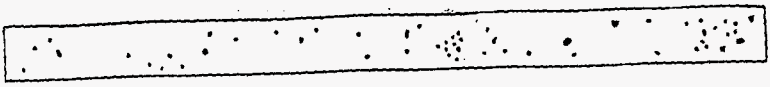
6.1 Design Guidance.

6.1.1 Class I Weld Restrictions. Avoid specifying Class I welds for fillet welds and groove welds that do not require complete joint penetration.

6.1.2 Machining after Welding. Machining after welding that substantially reduces the thickness of the weld may result in a wider heat-affected zone and lower mechanical properties than assumed. For critical applications, consider limiting the extent of machining after welding.

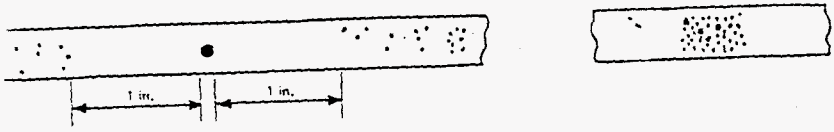
6.1.3 Post-Weld Heat Treatment. Post-weld heat treatment, when required, should be specified on the product drawing.

6.1.4 Repair of Welds. Repair welding may result in a wider heat-affected zone and lower mechanical properties than assumed. For critical application, consider limiting the extent of repairs.



RANDOM ROUNDED INDICATIONS

Typical concentration and size permitted in any 6 in. length of weld



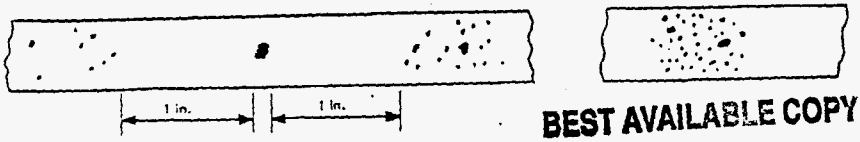
ISOLATED INDICATION
Maximum size per Table 4-1

CLUSTER

FIG. 4-3 CHARTS FOR t EQUAL TO $\frac{1}{8}$ in. to $\frac{1}{4}$ in., INCLUSIVE

RANDOM ROUNDED INDICATIONS

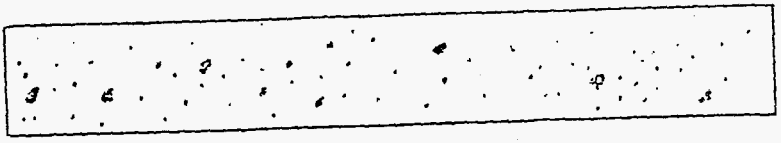
Typical concentration and size permitted in any 6 in. length of weld



ISOLATED INDICATION
Maximum size per Table 4-1

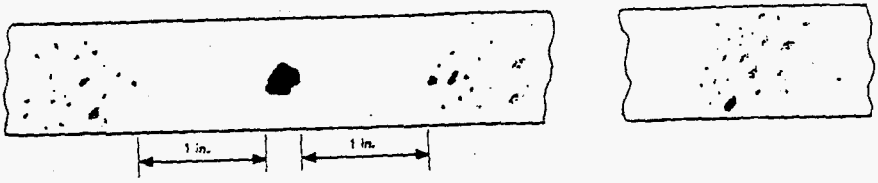
CLUSTER

FIG. 4-4 CHARTS FOR t OVER $\frac{1}{4}$ in. to $\frac{3}{8}$ in., INCLUSIVE



RANDOM ROUNDED INDICATIONS

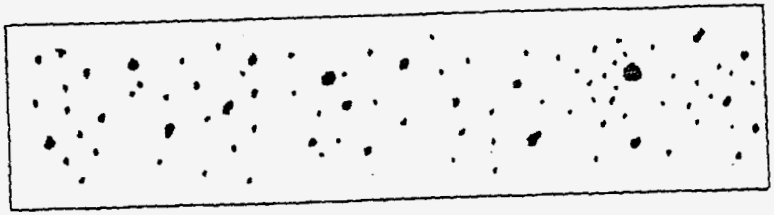
Typical concentration and size permitted in any 6 in. length of weld.



ISOLATED INDICATION
Maximum size per Table 4-1

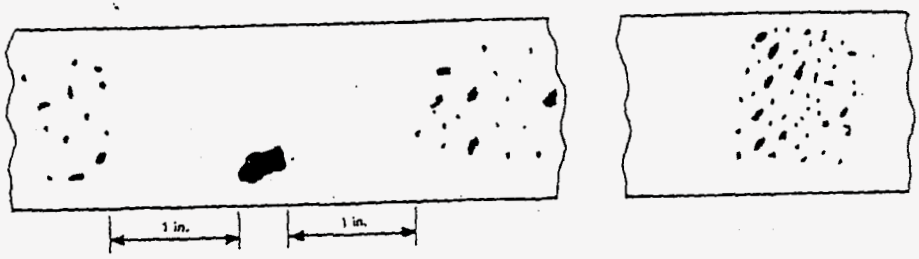
CLUSTER

FIG. 4-6 CHARTS FOR t OVER ¾ in. to 2 in., INCLUSIVE



RANDOM ROUNDED INDICATIONS

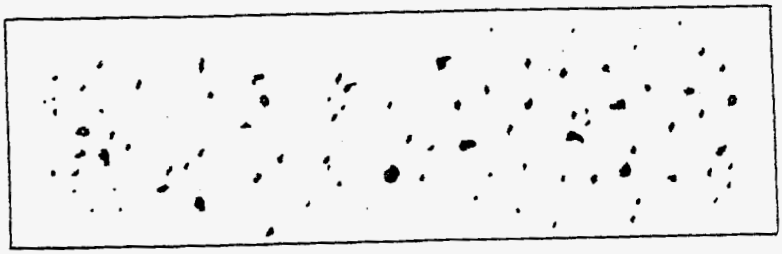
Typical concentration of size permitted in any 6 in. length of weld.



ISOLATED INDICATION
Maximum size per Table 4-1

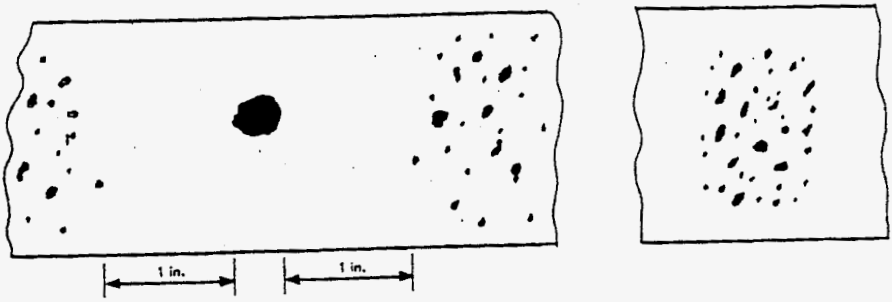
CLUSTER

FIG. 4-7 CHARTS FOR t OVER 2 in. to 4 in., INCLUSIVE



RANDOM ROUNDED INDICATIONS

Typical concentration and size permitted in any 6 in. length of weld.



ISOLATED INDICATION
Maximum size per Table 4-1

CLUSTER

FIG. 4-8 CHARTS FOR t OVER 4 in.

APPENDIX 8
METHODS FOR
LIQUID PENETRANT EXAMINATION (PT)

NOTE: Satisfactory application of this method of examination requires special skills in the techniques involved and in interpreting the results. The requirements specified herein presume application by suitably experienced personnel.

8-1 SCOPE

(a) This Appendix describes methods which shall be employed whenever liquid penetrant examination is specified in this Division.

(b) Article 6 of Section V shall be applied for detail requirements in methods, procedures and qualifications, unless specified within this Appendix.

(c) Liquid penetrant examination shall be performed in accordance with a written procedure, certified by the Manufacturer to be in accordance with the requirements of T-150 of Section V.

8-2 CERTIFICATION OF COMPETENCY OF NONDESTRUCTIVE EXAMINATION PERSONNEL

The manufacturer shall certify that each liquid penetrant examiner meets the following requirements.

(a) He has vision, with correction if necessary, to enable him to read a Jaeger Type No. 2 Standard Chart at a distance of not less than 12 in., and is capable of distinguishing and differentiating contrast between colors used. These requirements shall be checked annually.

(b) He is competent in the techniques of the liquid penetrant examination method for which he is certified, including making the examination and interpreting and evaluating the results, except that, where the examination method consists of more than one operation, he may be certified as being qualified only for one or more of these operations.

8-3 EVALUATION OF INDICATIONS

An indication is the evidence of a mechanical imperfection. Only indications with major dimensions greater than $\frac{1}{16}$ in. shall be considered relevant.

(a) A linear indication is one having a length greater than three times the width.

(b) A rounded indication is one of circular or elliptical shape with the length equal to or less than three times the width.

(c) Any questionable or doubtful indications shall be reexamined to determine whether or not they are relevant.

8-4 ACCEPTANCE STANDARDS

These acceptance standards shall apply unless other more restrictive standards are specified for specific materials or applications within this Division.

All surfaces to be examined shall be free of:

(a) relevant linear indications;

(b) relevant rounded indications greater than $\frac{3}{16}$ in.;

(c) four or more relevant rounded indications in a line separated by $\frac{1}{16}$ in. or less (edge to edge);

(d) an indication of an imperfection may be larger than the imperfection that causes it; however, the size of the indication is the basis for acceptance evaluation.

8-5 REPAIR REQUIREMENTS

Unacceptable imperfections shall be repaired and reexamination made to assure removal or reduction to an acceptable size. Whenever an imperfection is repaired by chipping or grinding and subsequent repair by welding is not required, the excavated area shall be blended into the surrounding surface so as to avoid sharp notches, crevices, or corners. Where welding is required after repair of an imperfection, the area shall

be cleaned and welding performed in accordance with a qualified welding procedure.

(a) Treatment of Indications Believed Nonrelevant. Any indication which is believed to be nonrelevant shall be regarded as an imperfection unless it is shown by reexamination by the same method or by the use of other nondestructive methods and/or by surface conditioning that no unacceptable imperfection is present.

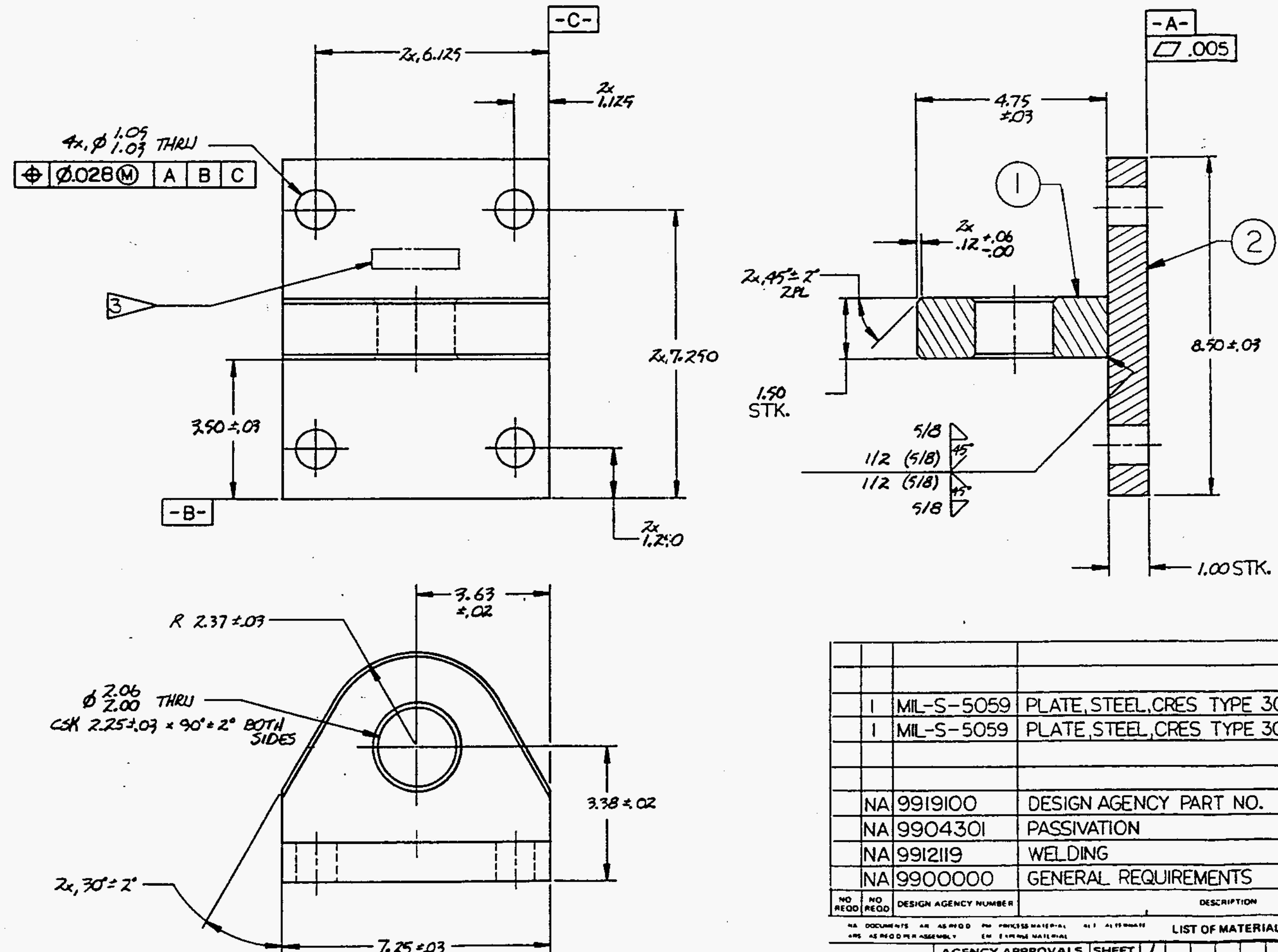
(b) Examination of Areas From Which Defects Have Been Removed. After a defect is thought to have been removed and prior to making weld repairs, the area shall be examined by suitable methods to ensure it has been removed or reduced to an acceptably sized imperfection.

(c) Reexamination of Repair Areas. After repairs have been made, the repaired area shall be blended into the surrounding surface so as to avoid sharp notches, crevices, or corners and reexamined by the liquid penetrant method and by all other methods of examination that were originally required for the affected area, except that, when the depth of repair is less than the radiographic sensitivity required, reradiography may be omitted.

NOTES:

1. WELD AND INSPECT PER 9912119, CLASS I, USING ER308 ELECTRODES OR RODS PER AWS A5.9-77.
2. PASSIVATE PER 9904301, TREATMENT A.
3. MARK DESIGN AGENCY PART NO. PER 9919100, CLASS C-1 METHOD A, LOCATE APPROX. AS SHOWN.

DESIGN AGENCY PART [redacted] NO.	ISSUE	DESCRIPTION (REVISIONS) PREPARED BY	DATE	CHKR	ENGR
T83109-000	A	PLATZBECKER, 7655 / EAKES, 6322	5/31/84	RE	HRY
	B	ADDED L/M & PASSIVATION C. JOJOLA (C&D) 7651 / EAKES 6323	9/14/84	RE	HRY



NO REQD	NO REQD	DESIGN AGENCY NUMBER	DESCRIPTION	NOTE	SHEET ZONE	ITEM
	1	MIL-S-5059	PLATE, STEEL, CRES TYPE 304, 1.00 STK.			2
	1	MIL-S-5059	PLATE, STEEL, CRES TYPE 304, 1.50 STK.			1
	NA	9919100	DESIGN AGENCY PART NO.			
	NA	9904301	PASSIVATION			
	NA	9912119	WELDING			
	NA	9900000	GENERAL REQUIREMENTS			

LIST OF MATERIAL

AGENCY APPROVALS — ORG | DATE | APPROVALS

SHEET 1 — ISSUE B

SHEET INDEX

PART CLASSIFICATION: **UNCLASSIFIED**

DWG CLASSIFICATION LEVEL: **UNCLASSIFIED**

TITLE: LUG, LIFT (BUSS)

SIZE C | FSCM NO 14213 | DWG NUMBER T83109

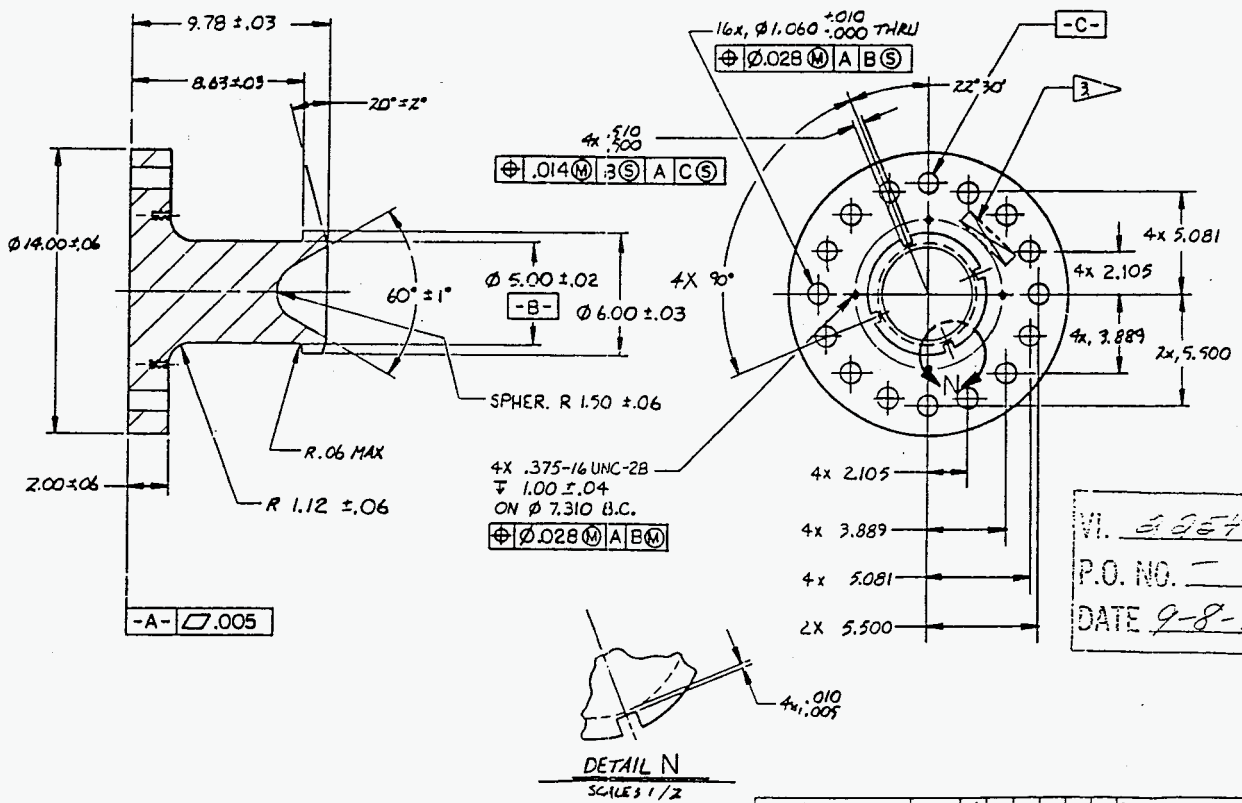
SCALE 1/2 | SHEET 1 OF 1

SF5300C(9-81)

NOTES:

1. GENERAL REQUIREMENTS ARE DEFINED IN 9900000.
2. MATERIAL: STEEL, STAINLESS, 17-4 PH PER ASTM-A-564 TYPE 630, H 900
3. MARK DESIGN AGENCY PART NO. PER 9919100, CLASS C-1, LOCATE APPROX AS SHOWN.
4. ALL MACHINED SURFACES TO BE 63
5. PASSIVATE PER 9904301.

DESIGN AGENCY PART NO.	ISSUE	REVISIONS DESCRIPTION / PREPARED BY	DATE	CHG	CAR
S51171-000	A	PLATZBECKER, 7655/EAKES, 6322	7/5/84	RE	HRY F
	B	ADDED NOTE 5 R COOKE CD 7651/EAKES 6322	8/31/84		HRY F
	C	ADDED .375-16 UNC HOLES REVISED ELET 2851/EAKES 6322	12-19-85		JLM F
	D	ADDED 8 THRU HOLES Ø1.060 J.ARCHULETA, (C&D) 2855/ BRONOWSKI, 6323	6-4-87	DRB	JLM F



DETAIL N
SCALE 3 1/2

VI. 22542 SHT. 373
P.O. NO. —
DATE 9-8-92 BLDG. 9825B

AGENCY APPROVALS			SHEET 1						
ORG	DATE	APPROVALS	ISSUE D						
			SHEET INDEX						
6323	9/6/84	[illegible]	PART CLASSIFICATION UNCLASSIFIED						
			DWG CLASSIFICATION LEVEL UNCLASSIFIED						

TITLE: TRUNNION, CASK BODY, (BUSS)

SIZE C | FSCM NO 14213 | DWG NUMBER S51171 | SCALE 1/4 | SHEET 1 OF 1

SF5300C(8-81)

Appendix D: Bolt Torque Test Data

1. Document Number 2B-95-00989/P *PREVENTIVE MAINTENANCE*
2. Work Item Title PM 2C23027 BUSS CASK TORQUE TEST

3. System C99R *BUSS-PM/CBRS/REP POOL EQ&F/G M*

4. Components

Component Number	Name
N/A	

Temporary Number	Name
N/A	

5. Location

Facility 2C *WESF*
Bldg/Rm 225B Other CRANE PAD Other

6. Associated Components

Component Number	Name
N/A	

7. Originator Name SWANSON,JL Date 09/19/95 Organization 16720
Telephone No. 2-0172 MSIN

8. Charge Code ~~KB5B2~~ KB64D JY 9/29/95

9. Work Item Description

COMPLY WITH PREVENTIVE MAINTENANCE REQUIREMENTS PER PM 2C23027.
PERFORM (180 DAY) BUSS CASK TORQUE TEST.

	Signature	Date
10. Operations Review	N/A	
11. Priority	2	
12. Phase Designator	OCT95 *SCHEDULED FOR OCTOBER 1995*	
13. Correct Maint. Assessment	N	
14. Personnel Safety Related	N	APPROVAL DESIGNATOR
15. Mode	IN	NA

16. Resolution/Retest

NO LOCK AND TAG REQUIRED:

COMPLY WITH PREVENTIVE MAINTENANCE PROCEDURE PROVIDED.

RECORD DATA (AS REQUIRED) ON THE PM DATA SHEET/S.

RECORD PROBLEMS/DISCREPANCIES AND ANY ADDITIONAL INFORMATION ON THE J-5.

B-PLANT

PREVENTIVE MAINTENANCE PROCEDURE

2C23027

Revision 0
Change B

BENEFICIAL USES SHIPPING SYSTEM (BUSS) CASK TORQUE TEST

Approval Designator Q

Prepared by:	PDCS	*R. L. Ganoe, Engineer
Validated by:	OPS/OMS	*M. D. Steel
Approved by:	OPS/BP	*P. T. Saueressig, Cog Engineer
	OPS/BP	*E. D. Robbins, Cog Engineer Manager
	ESQ/QA	*D. D. McAfee
Released by:	PDCS	*C. J. Hutchison Records Management Specialist

RELEASE DATE: 8/15/94

* Indicates original signatores.

Revision Status

Change Level	Date	Change Document	Page(s)	Description
Rev. 0	8/15/94	2U-94-0097	All	New procedure.
[A]	9/23/94	94-1910	5,6,16	Deleted all references to lock and tag (deleted Step 4.4 and re-numbered, deleted Step 6.5, and revised Step 11.1.)
[B]	9/27/95	B95-0132	5,10,11, 14,20,21	Update to meet IP-1140 standards. Add step 4.5, add step 5.1. Change 7.6.4 and 7.6.4a, 60 inch-lbs and on data sheet 3 of 7. Change 7.8.3 and 7.8.3a to 60 lbs and on data sheet 4 of 7. Change 7.13.2 and 7.13.3a to 120 inch lbs and on data sheet 5 of 7.

TABLE OF CONTENTS

1.0 PURPOSE AND SCOPE

This procedure provides a safe, uniform method to document and verify the torquing requirements of the BUSS Cask bolts on a semiannual frequency.

2.0 REFERENCES

None.

3.0 PERSONNEL REQUIREMENTS

Appendix D
Page 5
WHC-SD-WM-TI-732 Rev. 0

3.1 Millwright(s).

3.2 Quality Assurance personnel (QA).

3.3 Radiological Control Technician (RCT), as required.

3.4 Operations Personnel (OP), as required.

4.0 PRECAUTIONS AND LIMITATIONS

4.1 If during performance of this procedure, any of the following conditions are found, immediately stop work, place equipment in a safe condition, and notify Person In Charge (PIC) or Supervision:

- Any equipment malfunction which could prevent fulfillment of its functional requirements.
- Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.

4.2 Contact Supervision for additional instructions if changing plant conditions affect work or delays in work extend past end of shift.

4.3 If any waste is generated during performance of this procedure, consult Facility/Plant/Area Hazardous Waste Coordinator for specific instructions to ensure compliance with WHC and DOE environmental standards, as applicable, for disposal.

4.4 If performance of any steps in this procedure is not required for procedure completion, steps not performed shall be indicated as such by entering "N/A" in the appropriate Data Sheet signoff space and explained in the COMMENTS section of the Data Sheet.

4.5 This is a step-by-step compliance procedure.

5.0 SPECIAL TOOLS, EQUIPMENT, AND MATERIALS

NOTES

Measuring and Test Equipment (M&TE) used to collect qualitative data during performance of this procedure shall:

- Be within their current calibration cycle as evidenced by affixed calibration labels.
- Be capable of the desired range.
- Have an accuracy consistent with state-of-the-art limitations:
  - equal to or greater than input tolerance specified on CBRS Data Sheet,

  OR, if device being calibrated is not CBRS associated,

  - at least 4 times greater than specified device tolerance.

5.1 Calibrated torque wrench with a range of 10 to 200 inch-lbs, as applicable.

5.2 Calibrated torque wrench with a range of 0 to 75 ft-lbs, as applicable.

5.3 Calibrated torque wrench with a range of 0 to 500 ft-lbs, as applicable.

5.4 Calibrated torque multiplier.

5.5 Appropriately-sized socket wrenches.

5.6 Torque seal (paint).

6.0 PREREQUISITES

6.1 Obtain release from Operations management prior to performing this procedure.

6.2 Verify that Operations personnel have configured system of equipment (as identified in JCS work package) to allow performance of this procedure.

6.3 Ensure that Quality Assurance Personnel (QA) are available to witness and verify at hold points of procedure.

6.4 If potential for radiological contamination exists, request RCT to perform an equipment survey prior to beginning maintenance or removing equipment or component from its installed location.

7.0 INSTRUCTIONS

7.1 Basket Handle Bolts

7.1.1 REMOVE basket from the BUSS Cask cavity AND PLACE it IN the designated area.

7.1.2 LOOSEN the basket handle bolts using an appropriately-sized socket wrench.

QA HOLD POINT

7.1.3 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the basket handle bolts. Record on Data Sheet.

7.1.4 TORQUE the 4 basket handle bolts to 25 ft-lbs.

QA HOLD POINT

a. REPEAT torque sequence until all bolts maintain a 25 ft-lb torque (witnessed by QA). Record on Data Sheet.

7.2 Bore Plug

QA HOLD POINT

7.2.1 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the bore plug. Record on Data Sheet.

QA HOLD POINT

7.2.2 TORQUE the bore plug to 35 ft-lbs (witnessed by QA) using an appropriately-sized socket wrench. Record on Data Sheet.

7.3 Trunnion Bolts

7.3.1 LOOSEN the 16 trunnion bolts positioned in the north direction using an appropriately-sized socket wrench.

QA HOLD POINT

7.3.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench and torque multiplier (if required) used in the torquing of the trunnion bolts. Record on Data Sheet.

7.3.3 TORQUE the 16 trunnion bolts to 250 ft-lbs using a cross-tightening pattern.

QA HOLD POINT

a. REPEAT torque sequence in a cross-tightening pattern until all bolts maintain a 250 ft-lb torque (witnessed by QA). Record on Data Sheet.

QA HOLD POINT

7.3.4 APPLY torque seal to the bolts (performed by QA). Record on Data Sheet.

7.3.5 LOOSEN the trunnion bolts positioned in the south direction using an appropriately-sized socket wrench.

QA HOLD POINT

7.3.6 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench and torque multiplier (if required) used in the torquing of the trunnion bolts. Record on Data Sheet.

7.3.7 TORQUE the 16 trunnion bolts to 250 ft-lbs using a cross-tightening pattern.

QA HOLD POINT

a. REPEAT torque sequence in a cross-tightening pattern until all bolts maintain a 250 ft-lb torque (witnessed by QA). Record on Data Sheet.

QA HOLD POINT

7.3.8 APPLY torque seal to the bolts (performed by QA). Record on Data Sheet.

7.4 Trunnion Brass Washer Screws

7.4.1 LOOSEN the 8 trunnion brass washer screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.4.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the trunnion brass washer screws. Record on Data Sheet.

7.4.3 TORQUE the 8 washer screws to 20 ft-lbs using a cross-tightening pattern.

QA HOLD POINT

a. REPEAT torque sequence in a cross-tightening pattern until all washer screws maintain a 20 ft-lb torque (witnessed by QA). Record on Data Sheet.

7.5 Lifting Lug Bolts

7.5.1 LOOSEN the 8 lifting lug bolts using an appropriately-sized socket wrench.

QA HOLD POINT

7.5.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench and torque multiplier (if required) used in the torquing of the lifting lug bolts. Record on Data Sheet.

7.5.3 TORQUE the 8 lifting lug bolts to 250 ft-lbs using a cross-tightening pattern.

QA HOLD POINT

a. REPEAT torque sequence in a cross-tightening pattern until all bolts maintain a 250 ft-lb torque (witnessed by QA). Record on Data Sheet.

QA HOLD POINT

7.5.4 APPLY torque seal to the bolts (performed by QA). Record on Data Sheet.

7.6 Upper/Lower Port Cover Handle Screws

7.6.1 REMOVE both upper and lower port covers from the BUSS Cask body.

7.6.2 LOOSEN the 4 port cover handle screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.6.3 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the handle screws. Record on Data Sheet.

7.6.4 TORQUE the 4 handle screws to 60 inch-lbs.

QA HOLD POINT

a. REPEAT torque sequence until the handle screws maintain a 60 inch-lbs torque (witnessed by QA). Record on Data Sheet.

7.6.5 STORE the upper and lower port covers in the designated tool box.

7.7 Key Screws

7.7.1 LOOSEN the 4 key screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.7.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the key screws. Record on Data Sheet.

7.7.3 TORQUE the 4 key screws to 30 ft-lbs.

QA HOLD POINT

a. REPEAT torque sequence until the key screws maintain a 30 ft-lb torque (witnessed by QA). Record on Data Sheet.

7.8 Lower Impact Limiter Fill Cover Screws

7.8.1 LOOSEN the 16 impact limiter fill cover screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.8.2 REQUSET QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the fill cover screws. Record on Data Sheet.

7.8.3 TORQUE the 16 fill cover screws to 60 inch-lbs using a cross-tightening pattern.

QA HOLD POINT

a. REPEAT torque sequence in a cross-tightening pattern until the fill cover screws maintain a 60 inch-lb torque (witnessed by QA). Record on Data Sheet.

7.9 Lower Impact Limiter Outer End Cap Screws

7.9.1 LOOSEN the 3 outer end cap screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.9.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the outer end cap screws. Record on Data Sheet.

7.9.3 TORQUE the 3 cap screws to 20 ft-lbs.

QA HOLD POINT

a. REPEAT torque sequence until the cap screws maintain a 20 ft-lb torque (witnessed by QA). Record on Data Sheet.

NOTE
This section will only be performed if the crane is available. WHC will authorize continuance onto next section.

7.10 Upper Impact Limiter Fill Cover Screws

7.10.1 LOOSEN the 16 impact limiter fill cover screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.10.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the fill cover screws. Record on Data Sheet.

7.10.3 TORQUE the 16 fill cover screws to 60 inch-lbs using a cross-tightening pattern.

QA HOLD POINT

a. REPEAT torque sequence in a cross-tightening pattern until the fill cover screws maintain a 60 inch-lbs torque (witnessed by QA). Record on Data Sheet.

7.11 Upper Impact Limiter Outer End Cap Screws

7.11.1 LOOSEN the 3 outer end cap screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.11.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the outer end cap screws. Record on Data Sheet.

7.11.3 TORQUE the 3 cap screws to 20 ft-lbs.

QA HOLD POINT

a. REPEAT torque sequence until the cap screws maintain a 20 ft-lb torque (witnessed by QA). Record on Data Sheet.

7.12 Transportation Skid Brass Wear Strip Mounting Screws

7.12.1 LOOSEN the 10 wear strip mounting screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.12.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the wear strip mounting screws. Record on Data Sheet.

7.12.3 TORQUE the 10 mounting screws to 50 ft-lbs.

QA HOLD POINT

a. REPEAT torque sequence until the mounting screws maintain a 50 ft-lb torque (witnessed by QA). Record on Data Sheet.

7.13 Hexagonal Base-to-Skid Retaining Screws

7.13.1 LOOSEN the 2 base-to-skid retaining screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.13.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the base-to-skid retaining screws. Record on Data Sheet.

7.13.3 TORQUE the 2 retaining screws to 120 inch-lbs.

QA HOLD POINT

a. REPEAT torque sequence until the retaining screws maintain a 120 inch-lb torque (witnessed by QA). Record on Data Sheet.

7.14 Personnel Barrier to Skid Assembly Screws

7.14.1 LOOSEN the 18 barrier-to-skid screws using an appropriately-sized socket wrench.

QA HOLD POINT

7.14.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench used in the torquing of the barrier-to-skid screws. Record on Data Sheet.

7.14.3 TORQUE the 18 barrier-to-skid screws to 20 ft-lbs.

QA HOLD POINT

a. REPEAT torque sequence until the barrier-to-skid screws maintain a 20 ft-lb torque (witnessed by QA). Record on Data Sheet.

7.15 Skid-to-Trailer Tie-Down Bolts

7.15.1 LOOSEN the 8 skid-to-trailer tie-down bolts using an appropriately-sized socket wrench.

QA HOLD POINT

7.15.2 REQUEST QA to witness and verify the serial number and expiration date of the torque wrench and torque multiplier (if required) used in the torquing of the tie-down bolts. Record on Data Sheet.

7.15.3 TORQUE the 8 tie-down bolts to 290 ft-lbs.

QA HOLD POINT

a. REPEAT torque sequence until all bolts maintain a 290 ft-lb torque (witnessed by QA). Record on Data Sheet.

QA HOLD POINT

7.15.4 APPLY torque seal to the bolts (performed by QA). Record on Data Sheet.

8.0 RESTORATION

None.

9.0 TESTING AND ACCEPTANCE

None.

10.0 DISPOSITION

10.1 Person In charge (PIC) shall record Work Request Number which was generated as a result of this procedure, if applicable.

10.2 Inform Maintenance and Operations management that the maintenance procedure is complete.

10.3 Return Work Package to PIC or Maintenance supervisor.

11.0 BIBLIOGRAPHY

11.1 WHC-CM-4-3, Industrial Safety Manual, Standard PP-7, "Personal Protective Equipment."

11.2 HSRCM-1, Hanford Site Radiological Control Manual, Chapter 2, Part 3, "Posting," and Chapter 3, Part 2, "Work Preparation."

DATA SHEET (Sheet 1 of 7)

STEP		H/W/V	QA SIGN/STAMP
7.1.3	Torque wrench data (basket handle bolts): CAL. EXPIRATION DATE 11-9-96 S/N 813-88-01-042	V	Dan L Horn 11-30-95
7.1.4.a	Perform final torque (25 ft-lbs)	W	Dan L Horn 11-30-95
7.2.1	Torque wrench data (bore plug): CAL. EXPIRATION DATE 11/9/96 S/N 813-88-01-042	V	12/4/95
7.2.2	Perform final torque (35 ft-lbs)	W	12/4/95
7.3.2	Torque wrench data (trunnion bolts north direction): 19 ft-lbs w/multiplier CAL. EXPIRATION DATE 11/9/96 S/N 813-88-01-042 Torque multiplier data (if required): CAL. EXPIRATION DATE 5-24-96 S/N 813-88-04-002	V	11/30/95
7.3.3.a	Perform final torque (250 ft-lbs)	W	11/30/95
7.3.4	Apply torque seal to bolts.	V	11/30/95

DATA SHEET (Sheet 2 of 7)

STEP		H/W/V	QA SIGN/STAMP
7.3.6	Torque wrench data (trunnion bolts south direction): CAL. EXPIRATION DATE 11/9/96 S/N 813-88-01-042 Torque multiplier data (if required): CAL. EXPIRATION DATE 5-24-96 S/N 813-88-04-002	V	11/30/95
7.3.7.a	Perform final torque (250 ft-lbs)	W	11/30/95
7.3.8	Apply torque seal to bolts.	V	11/30/95
7.4.2	Torque wrench data (trunnion washer screws): CAL. EXPIRATION DATE 11/9/96 S/N 813-88-01-042	V	11/30/95
7.4.3.a	Perform final torque (20 ft-lbs)	W	11/30/95

DATA SHEET (Sheet 3 of 7)

STEP		H/W/V	QA SIGN/STAMP
7.5.2	Torque wrench data (lifting lug bolts): CAL. EXPIRATION DATE 11/9/96 S/N 813-88-01-042 Torque multiplier data (if required): CAL. EXPIRATION DATE 5-24-96 S/N 813-88-04-002	V	**Appendix D Page 20 WHC-SD-WM-TI-732 Rev. 0** 11/30/95
7.5.3.a	Perform final torque (250 ft-lbs)	W	11/30/95
7.5.4	Apply torque seal to bolts.	V	11/30/95
7.6.3	Torque wrench data (port cover handle screws): CAL. EXPIRATION DATE 3/31/96 S/N 776-88-01-254	V	12/1/95
7.6.4.a	Perform final torque (60 inch-lbs)	W	12/1/95
7.7.2	Torque wrench data (key screws): CAL. EXPIRATION DATE 11/9/96 S/N 813-88-01-042	V	Dan L Horn 12-1-95
7.7.3.a	Perform final torque (30 ft-lbs)	W	Dan L Horn 12-1-95

DATA SHEET (Sheet 4 of 7)

STEP		H/W/V	QA SIGN/STAMP
7.8.2	Torque wrench data (lower impact limiter fill cover screws): CAL. EXPIRATION DATE 3-31-96 S/N 776-88-01-254	V	Dennis Horn 10-12-95
7.8.3.a	Perform final torque (60 inch-lbs)	W	Dennis Horn 10-12-95
7.9.2	Torque wrench data (lower impact limiter outer end cap screws): CAL. EXPIRATION DATE 9-29-96 S/N 813-88-01-021	V	Dennis Horn 10-12-95
7.9.3.a	Perform final torque (20 ft-lbs)	W	Dennis Horn 10-12-95
7.10.2	Torque wrench data (upper impact limiter fill cover screws): CAL. EXPIRATION DATE 3-31-96 S/N 776-88-01-254	V	Dennis Horn 10-12-95
7.10.3.a	Perform final torque (60 inch-lbs)	W	Dennis Horn 10-12-95
7.11.2	Torque wrench data (upper impact limiter outer end cap screws): CAL. EXPIRATION DATE 9-29-96 S/N 813-88-01-021	V	Dennis Horn 10-12-95
7.11.3.a	Perform final torque (20 ft-lbs)	W	Dennis Horn 10-12-95

DATA SHEET (Sheet 5 of 7)

STEP		H/W/V	QA SIGN/STAMP
7.12.2	Torque wrench data (transporation skid wear strip mounting screws): CAL. EXPIRATION DATE ~~3-31-96~~ 1-4-96 DWH 10-12-95 S/N 813-88-01-026 ~~776-88-01-254~~ DWH 10-12-95	V	Dan L Horn 10-12-95
7.12.3.a	Perform final torque (50 ft-lbs)	W	Dan L Horn 10-12-95
7.13.2	Torque wrench data (hexagonal base-to-skid retaining screws): CAL. EXPIRATION DATE 3-31-96 S/N 776-88-01-254	V	Dan L Horn 10-12-95
7.13.3.a	Perform final torque (120 inch-lbs)	W	Dan L Horn 10-12-95
7.14.2	Torque wrench data (personnel barrier to skid assembly screws): CAL. EXPIRATION DATE 9-29-96 S/N 813-88-01-021	V	Dan L Horn 10-12-95
7.14.3.a	Perform final torque (20 ft-lbs)	W	Dan L Horn 10-12-95

DATA SHEET (Sheet 6 of 7)

STEP		H/W/V	QA SIGN/STAMP
7.15.2	Torque wrench data (skid-to-trailer tie-down bolts): CAL. EXPIRATION DATE 9-29-96 S/N 613-88-01-021 Torque multiplier data (if required): CAL. EXPIRATION DATE 8-3-96 S/N 813-88-04-001	V	Dennis Horn 10-18-95
7.15.3.a	Perform final torque (290 ft-lbs)	W	Dennis Horn 10-18-95
7.15.4	Apply torque seal to bolts.	V	Dennis Horn 10-18-95

DATA SHEET (Sheet 7 of 7)

Work Performed by:

Print Name	Signature	Date
Allen D. Sanders	A D Sanders	12/5/95

COMMENTS: Torque Wrench setting for Skid-to-trailer tie-down bolts (21 Ft.-Lbs.)
Torque Wrench setting for Trunnion Bolts / Lift Lugs (19 Ft.-lbs.)
Next year replace trunnion washer screws (Brass wearing)
Add new step prior to 1996 maintenance for proper trunnion alignment during re-installation.
Groove in trunnions should be aligned at 12 o'clock.
Make this step a hold point.

Appendix E: Impact Limiter Inspection and Weight Test Data

J-2 WORK REQUEST (W120)

Page: 1 10:35:51 20 SEP 1995

1. Document Number 2B-95-00988/P *PREVENTIVE MAINTENANCE*
2. Work Item Title PM 2C23026 BUSS CASK IMPACT LIMITER INSPECTION

3. System C99R *BUSS-PM/CBRS/REP POOL EQ&F/G M*

4. Components
   Component Number N/A Name
   Temporary Number N/A Name

5. Location
   Facility 2C *WESF*
   Bldg/Rm 225B Other Other

6. Associated Components
   Component Number N/A Name

7. Originator Name SWANSON,JL Date 09/19/95 Organization 16720
   Telephone No. 2-0172 MSIN

8. Charge Code KB5B2 ~~KB64D~~

9. Work Item Description

   COMPLY WITH PREVENTIVE MAINTENANCE REQUIREMENTS PER PM 2C23026.
   PERFORM (365 DAY) BUSS CASK IMPACT LIMITER INSPECTION.

	Signature	Date
10. Operations Review	N/A	
11. Priority	2	
12. Phase Designator	OCT95 *SCHEDULED FOR OCTOBER 1995*	
13. Correct Maint. Assessment	N	
14. Personnel Safety Related	N	APPROVAL DESIGNATOR
15. Mode	IN	NA

16. Resolution/Retest

NO LOCK AND TAG REQUIRED:

COMPLY WITH PREVENTIVE MAINTENANCE PROCEDURE PROVIDED.

RECORD DATA (AS REQUIRED) ON THE PM DATA SHEET/S.

RECORD PROBLEMS/DISCREPANCIES AND ANY ADDITIONAL INFORMATION ON THE J-5.

B-PLANT

PREVENTIVE MAINTENANCE PROCEDURE

2C23026

Revision 0
Change B

BUSS CASK IMPACT LIMITER ANNUAL INSPECTION

Approval Designator SQ

Prepared by:	PDCS	*R. R. Anderson, Engineer
Validated by:	OPS/OMS	*R. G. Lee
Approved by:	OPS/BP	*P. T. Saueressig, Cog Engineer
	OPS/BP	*E. D. Robbins, Cog Engineer Manager
	ESQ/NS	*G. J. Carr
	ESQ/QA	*D. D. McAffe
Released by:	PDCS	*G. A. Buel Records Management Specialist

RELEASE DATE: 8/25/94

* Indicates original signatores.

Revision Status

Change Level	Date	Change Document	Page(s)	Description
Rev. 0	8/25/94	94-0098	All	New procedure.
[A]	10/10/94	94-1965	5,6	Deleted all references to lock and tag and revised for minor editorial changes.
[B]	9/28/95	B95-0133	6,13,15, 21	Update to current IP-1140 standards, Add step 5.4, 5.5, and 5.6. Add to step 7.5.8 - 60 inch lbs. and on the data sheet 4 of 5. Add step 11.2, Re-number the steps in the Sect. 11.0

TABLE OF CONTENTS

1.0 PURPOSE AND SCOPE

This procedure provides a safe, uniform method to perform annual inspection at B-Plant of Buss Cask Impact Limiters and associated hardware, Limiter S/N S48929-001 and S/N S48929-002.

2.0 REFERENCES

None.

3.0 PERSONNEL REQUIREMENTS

3.1 Millwright (2).

3.2 Plant Engineer or Person In Charge.

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3.3 Quality Control Inspector.

3.4 Radiological Control Technician, (RCT).

4.0 PRECAUTIONS AND LIMITATIONS

4.1 If during performance of this procedure, any of the following conditions are found, immediately stop work, place equipment in a safe condition, and notify Person In Charge (PIC) or Supervision:

- Any equipment malfunction which could prevent fulfillment of its functional requirements.
- Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.

4.2 Contact Supervision for additional instructions if changing plant conditions affect work or delays in work extend past end of shift.

4.3 Comply with WHC and DOE environmental standards, as applicable, when disposing of any waste generated during performance of this procedure. Consult Facility/Plant/Area Hazardous Waste Coordinator for specific instructions.

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4.4 If performance of any steps in this procedure is not required for procedure completion, steps not performed shall be indicated as such by entering "N/A" in appropriate Data Sheet signature space and explained in the COMMENTS section of Data Sheet.

4.5 Sections or steps within sections of this procedure may be performed out of sequence, as required for maintenance or plant conditions.

4.6 Rigging and lifting shall be performed in compliance with the Hanford Site Hoisting and Rigging Manual.

5.0 SPECIAL TOOLS, EQUIPMENT, AND MATERIALS

NOTES

Measuring and Test Equipment (M&TE) used to collect qualitative data during performance of this procedure shall:

- Be within their current calibration cycle as evidenced by affixed calibration labels.
- Be capable of the desired range.
- Have an accuracy consistent with state-of-the-art limitations:
  - equal to or greater than input tolerance specified on CBRS Data Sheet,

  OR, if device being calibrated is not CBRS associated,

  - at least 4 times greater than specified device tolerance.

5.1 Overhead Crane, 40,000 pound minimum capacity.

5.2 Calibrated Dynamometer.

5.3 Tools, equipment and supplies as noted Pg. 1-15 to 1-17 of Bibliography Item 11.4.

5.4 Calibrated torque wrench with a range of 10 to 200 inch-lbs, as applicable.

5.5 Calibrated torque wrench with a range of 0 to 75 ft-lbs, as applicable.

5.6 Calibrated torque wrench with a range of 0 to 500 ft-lbs, as applicable.

6.0 PREREQUISITES

6.1 Obtain release from Operations management prior to beginning performance of this procedure.

6.2 If potential for radiological contamination exists, request RCT to perform equipment survey prior to beginning maintenance or prior to removal of equipment or component from its installed location.

7.0 INSTRUCTIONS

7.1 Lifting Holes

NOTES

- Lifting holes (6) are located on outer end (3) and circumference (3) as shown in Figure 1.
- Lifting hole inspection is to be performed for both impact limiters.

7.1.1 INSPECT Impact Limiter lifting holes (6) visually for thread wear or damage. RECORD results on Data Sheet.

7.1.2 EXAMINE visually area adjacent to lifting holes for distortion. RECORD results on Data Sheet.

7.1.3 CHECK that threaded inserts are tight. RECORD results on Data Sheet.

7.2 Weighing

QC HOLD POINT

NOTE

A calibrated dynamometer shall be used to measure the weight which is compared to the original weight marked on the Identification Plates. Notify WESF Engineering if an out of tolerance of -1% to +3% is found.

CAUTION

- Impact limiter weight is approximately 3000 lbs. Each of the 6 lifting points is individually capable of lifting the load. Lifting points are usually used two or three at a time.
- These lifts are not considered critical lifts.
- Lifting bridal has been tagged for 3.1 Ton capacity through October 1994. The rigging specialist may substitute similar-rated equipment.
- Safety shoes and hardhats are required on the crane pad.

[ ]QC 7.2.1 VERIFY that the dynamometer calibration is current. RECORD serial number, date calibrated, and calibration due dates on Data Sheet.

7.2.2 ENGAGE Impact Limiter lifting bridal for vertical lift of Impact Limiter S/N S48929-001 (cask interface area down) for weighing.

7.2.3 SET dynamometer indication to zero OR RECORD weight of bridal.

7.2.4 INSTALL swivel-lifting eyes into each of three lift points at the end of the impact limiter.

[ ]QC 7.2.5 VERIFY that the torque wrench calibration is current. RECORD serial number, date calibrated, and calibration due dates on Data Sheet.

7.2.6 TORQUE each swivel-lifting eye to 100 ft-lbs. RECORD on Data Sheet.

7.2.7 APPLY minimum tension to rigging. ADJUST, as required.

7.2.8 STAND CLEAR AND SLOWLY LIFT Impact Limiter approximately 2".

[ ]QC 7.2.9 RECORD weight on Data Sheet.

[ ]QC 7.2.10 CALCULATE the net percentage change between the listed weight of 3006 lbs and the measured weight AND RECORD result on Data Sheet.

7.2.11 LOWER Impact Limiter slowly onto crane pad surface AND DISENGAGE swivel-lifting eyes.

NOTE

Lifting instructions applying to the Impact Limiter are located on the BUSS cask handling frame. The handling frame has a keyed floating pad that interlocks with the Impact Limiter. This pad needs to be re-aligned to ensure that the BUSS cask can be easily re-assembled.

7.2.12 ENGAGE the Impact Limiter lifting bridal for vertical lift of Impact Limiter S/N S48929-002 (cask interface area up) for weighing.

7.2.13 SET dynamometer indication to zero OR RECORD weight of bridal.

7.2.14 INSTALL swivel-lifting eyes into each of three lift points on the outer circumference of the Impact Limiter.

[ ]QC 7.2.15 VERIFY that the torque wrench calibration is current. RECORD serial number, date calibrated, and calibration due date on Data Sheet.

7.2.16 TORQUE each swivel-lifting eye to 100 ft-lbs. RECORD on Data Sheet.

NOTE

Use softeners to prevent slings from scratching impact limiter when tension is applied.

7.2.17 APPLY minimum tension to rigging AND ADJUST, as required.

7.2.18 STAND CLEAR AND SLOWLY LIFT Impact Limiter approximately 2".

[ ]QC 7.2.19 RECORD weight on Data Sheet.

7.2.20 LOWER Impact Limiter slowly onto handling frame pad surface AND ENSURE (visually) that the Impact Limiter engages the raised keyed area of the handling frame pad.

7.2.21 DISENGAGE swivel eyes AND STORE bridal in BUSS cask gang box.

[ ]QC 7.2.22 CALCULATE the net percentage change between the listed weight of 2994 lbs and the measured weight AND RECORD result on Data Sheet.

[ ]QC 7.2.23 VERIFY that the weights and net percent change are entered and calculated correctly ([Measured-Listed)/Listed] x 100%).

7.3 Exterior Surface Visual Inspection

NOTES

- Inspection is to be performed for both Impact Limiters.
- Small dents are permissible on exterior surface.

7.3.1 VERIFY that the exterior surface of limiter skin is free of dents, gouges, or tears. RECORD results on Data Sheet.

7.3.2 CLEAN AND RE-PAINT damaged areas resulting from dings and scrapes.

7.4 Limiter/Cask Interface Inspection

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QC HOLD POINT

NOTES

- Inspection is to be performed for both Impact Limiters.
- Emphasize visual inspection of the tape joint groove (see Figure 2.)
- For interface inspection, Impact Limiter may be placed on a stand, if available; therefore, Steps 7.4.1 through 7.4.8 and 7.4.12 through 7.4.15 may not be necessary to perform.
- Lifting instructions apply to an Impact Limiter with the initial position of the cask interface area down. The Impact Limiter is raised, then turned in the orientation in which it is transported, exposing the cask interface surface to the side.

7.4.1 PLACE cardboard or rubber matting on the abrasive surface of the concrete crane pad to protect the Impact Limiter as it is lifted, rotated, and set down.

7.4.2 INSTALL bridal on two side lifting points ensuring a third, unused, sling is in between the two being used for initial lift.

[] QC 7.4.3 VERIFY that the torque wrench calibration is current. RECORD serial number, date calibrated, and calibration due dates on Data Sheet.

7.4.4 TORQUE swivel-lifting eyes to 100 ft-lbs. RECORD on Data Sheet.

7.4.5 APPLY minimum tension to rigging. INSPECT AND ADJUST, as required.

7.4.6 STAND CLEAR AND RAISE Impact Limiter slowly to allow bottom end of limiter to rotate beneath point of rigging.

7.4.7 SET DOWN limiter on its side AND CONTINUE to hold minimum tension on slings to prevent limiter from rolling.

7.4.8 CHOCK limiter on two (2) sides.

[ ]QC 7.4.9 VERIFY that the limiter-to-cask interface structure is free of wear, galling or damage. RECORD results on Data Sheet.

[ ]QC 7.4.10 VERIFY by visual inspection that the interface structure welds are free of cracks. RECORD results on Data Sheet.

[ ]QC 7.4.11 VERIFY that the air flow holes not obstructed. RECORD results on Data Sheet.

7.4.12 LOWER the crane block sufficiently to allow the third, unused, bridal sling to be installed into lifting point on end of Impact Limiter, if required.

7.4.13 STAND CLEAR AND SLOWLY LIFT Impact Limiter. The bridal sling installed in end of Impact Limiter will engage first. Continue lifting until center of gravity of Impact Limiter rotates below the rigging point.

7.4.14 LOWER Impact Limiter slowly, PLACING cask interface side down, as it was originally positioned.

7.4.15 PERFORM vertical lift to reposition Impact Limiter to the centerline of crane pad.

7.5 Limiter Fill Cover Inspection/Gasket Replacement

NOTES

- Inspection and gasket replacement is to be performed for both Impact Limiters.
- Gaskets have a limited shelf life. Controls should be in place to ensure that out of date gaskets are not used. Three years from manufacture date of sheet stock is recommended maximum life.

7.5.1 REMOVE set screws (4) securing each of the four (4) fill covers.

7.5.2 REMOVE loose material adhered to the cover or limiter.

7.5.3 WIPE away debris and dirt using a dry rag.

7.5.4 VERIFY that the replacement gaskets meet shelf life requirement identified on package. RECORD on Data Sheet.

7.5.5 INSTALL a new gasket on each fill hole in proper orientation over screw holes.

7.5.6 INSTALL fill covers with fasteners loose prior to torque application.

[ ]QC 7.5.7 VERIFY that the torque wrench calibration is current. RECORD serial number, date calibrated, and calibration due dates on Data Sheet.

[ ]QC 7.5.8 TORQUE fill cover fasteners to 5 ft-lbs (60 inch-lbs). RECORD on Data Sheet.

7.6 Turnbuckle Attachment Lugs

QC HOLD POINT

NOTES

- Inspection is to be performed for both Impact Limiters.
- Remove paint for further inspection only if obvious cracks are observed through the paint.

[ ]QC 7.6.1 EXAMINE the four (4) turnbuckle attachment lugs for visual signs of wear or damage. RECORD results on Data Sheet.

7.6.2 EXAMINE area around the turnbuckle attachment lugs of the Impact Limiter for gross defects (i.e., dents, Impact Limiter skin distortion, paint chipping/cracking). RECORD results on Data Sheet.

7.7 Nonstructural Weld Inspection

QC HOLD POINT

NOTES

- Inspection is to be performed for both Impact Limiters.
- Remove paint for further inspection only if obvious cracks are observed through the paint.

[ ]QC 7.7.1 EXAMINE circumferential area of the Impact Limiter for gross defects (i.e., dents, Impact Limiter skin distortion, paint chipping/cracking). RECORD results on data sheet.

8.0 RESTORATION

8.1 Ensure that the test equipment has been disconnected and removed.

8.2 Ensure that alarms are reset or cleared.

9.0 TESTING AND ACCEPTANCE

None.

10.0 DISPOSITION

10.1 Inform Maintenance and Operations Management that the Buss Cask Annual Inspection is complete.

10.2 Return Work Package to PIC or Maintenance Supervisor.

11.0 BIBLIOGRAPHY

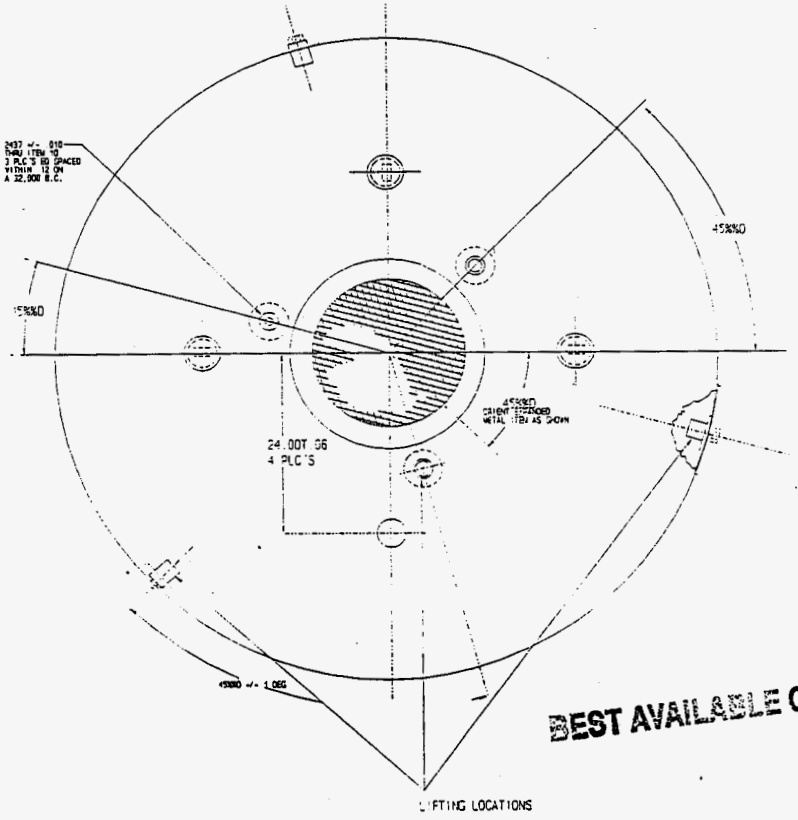
11.1 WHC-CM-4-3, Industrial Safety Manual, Section TE, "Tools and Equipment," and Standard No. PP-7.

11.2 WHC-CM-1-10, Safety Manual, WKS 10 "Personal Protective Equipment".

11.3 HSRCM-1, Hanford Site Radiological Control Manual, Chapter 2, Part 3, "Posting," and Chapter 3, Part 2, "Work Preparation."

11.4 DOE-RL 92-36, Hanford Site Hoisting and Rigging Manual.

11.5 Maintenance Manual for the Beneficial Uses Shipping System Cask, SANDS-0967, TTC-1220, UC-722, Revision 1, May 1993 (CVI 22542).



LIFTING LOCATIONS

Appendix E
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FIGURE 1. LIFTING LOCATIONS.

Appendix A
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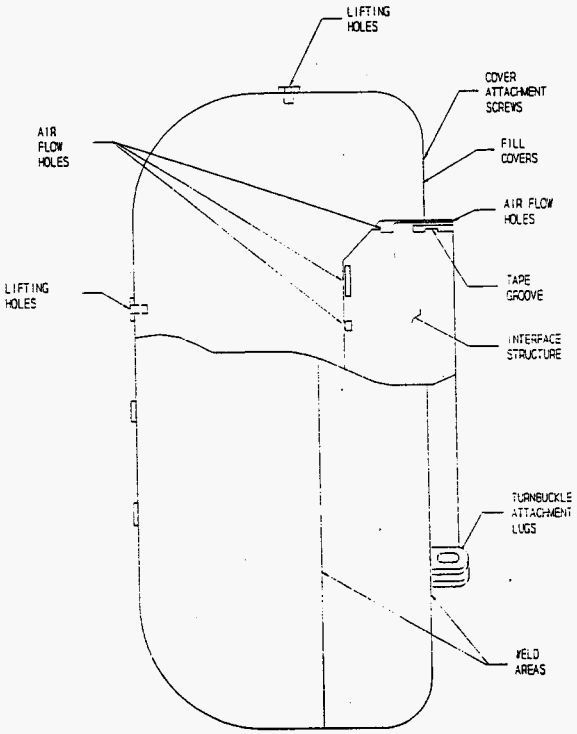

FIGURE 2. IMPACT LIMITER.

DATA SHEET (Sheet 1 of 5)

DATE: 10/04/95

Step	Description		
7.1	LIFTING HOLE INSPECTION:	S48929-001	S48929-002
7.1.1	Inspect lifting holes	Replaced one insert on side of Impact Limiter	The three lifting holes on side of Limiter OK. Inspect bottom side during Cask Assembly AND record after completion.
7.1.2	Adj. area, inserts tight		
7.1.3	MILLWRIGHT SIGNATURE /DATE	P/N. KNH12/10J-SP Remaining five inserts looked OK.	Lifting holes/Inserts inspected during Cask re-assembly. Inserts look OK. 10/4
	ENGINEERING SIGNATURE/DATE		
7.2	LIMITER WEIGHT:		
7.2.1	Dynamometer information	Dynamometer Serial Number: 815-21-00 028 Dynamometer last Calibrated: 7-31-95 Calibration due date: 7-31-96	
		QC SIGNATURE / STAMP / DATE: [signature] / NA / 10-4-95	
7.2.3	Bridal Weight (if applicable): N/A		
		LIMITER No. S48929-001	
7.2.5	Torque wrench information	Torque wrench serial number: 813-22-00-019 Torque wrench last calibrated: 9-29-95 Calibration due date: 9-29-96	
		QC SIGNATURE / STAMP / DATE: [signature] / NA / 10-4-95	
7.2.6	Verify that swivel-lifting eyes are torqued to 100 ft-lbs. YES [ ]		
	LIMITER No. S48929-001		
7.2.9	Present Weight: 3022	List Weight: 3006 lbs.	
7.2.10	% Weight Change: + 0.53 %		

DATA SHEET (Sheet 2 of 5)

Step Description

7.2.15 Torque wrench information Torque wrench serial number: 813-88-01-019
Torque wrench last calibrated: 9-29-95
Calibration due date: 9-29-96

QC SIGNATURE STAMP DATE

7.2.16 Verify that swivel-lifting eyes are torqued to 100 ft-lbs. YES [ ]

7.2.19 Present Weight: 3023 List Weight: 2994 lbs.
LIMITER No. S48929-CC3

7.2.22 % Weight Change: +0.97 %

7.2.23 Verify weights, % diff. correct

QC Signature /Stamp/Date

7.3 EXTERIOR SURFACE VISUAL INSPECTION:

7.3.1 Surface Condition (Note dents, gouges, repairs and location of damage):
S/N S48929-001: Nothing unusual outside of normal handling marks, scratches, chipped paint, etc.

S/N S48929-002: SAME AS Above.

MILLWRIGHT SIGNATURE /DATE ENGINEERING SIGNATURE /DATE

7.4 LIMITER/CASK INTERFACE INSPECTION:

7.4.3 Torque wrench information Torque wrench serial number: NA
Torque wrench last calibrated: NA
Calibration due date: NA

NA / NA / NA
STAMP DATE

DATA SHEET (Sheet 3 of 5)

Step Description

7.4.4 Verify that swivel-lifting eyes are torqued to 100 ft-lbs. YES NA [ ]

7.4.9 Verify that both interfaces are free of wear, galling, or damage:

Comments: S/N S48929-001 OK.

S/N S48929-002 OK.

10/4/95 / NA / 10-4-95

MILLWRIGHT SIGNATURE /DATE QC SIGNATURE /STAMP /DATE

7.4.10 Verify that interface structure welds are free of cracks:

Comments: S/N S48929-001 OK.

S/N S48929-002 OK.

10/4/95 / N/A / 10-4-95

MILLWRIGHT SIGNATURE /DATE QC SIGNATURE /STAMP /DATE

7.4.11 Verify that air flow holes are not obstructed for both limiters:

Comments: S/N S48929-001 OK

S/N S48929-002 OK

10/4/95 / N/A / 10-4-95

MILLWRIGHT SIGNATURE /DATE QC SIGNATURE /STAMP /DATE

DATA SHEET (Sheet 4 of 5)

Step	Description

7.5 FILL COVER INSPECTION/GASKET REPLACEMENT:

7.5.4 Verify that new gaskets, cover screws are torqued for both limiters:

Comments: S/N S48929-001 OK.

S/N S48929-002 OK.

10/4/95 — MILLWRIGHT SIGNATURE /DATE

10-4-95 — ENGINEERING SIGNATURE /DATE

7.5.7 Torque wrench information

Torque wrench serial number: 776-88-01-254
Torque wrench last calibrated: 3-31-95
Calibration due date: 3-31-96

Dennis L Homan | N/A | 10-4-95
QC SIGNATURE | STAMP | DATE

7.5.8 Torque fill cover to 5 ft-lbs. (60 inch lbs) (S/N S48929-001)

Dennis L Homan | N/A | 10-4-95
QC SIGNATURE | STAMP | DATE

7.5.8 Torque fill cover to 5 ft-lbs. (60 inch lbs) (S/N S48929-002)

Dennis L Homan | N/A | 10-4-95
QC SIGNATURE | STAMP | DATE

DATA SHEET (Sheet 5 of 5)

Step	Description
7.6	TURNBUCKLE ATTACHMENT LUGS:
7.6.1/ 7.6.2	Visual inspection for lug damage, skin distortion, and weld cracks for both limiters.

Comments: S/N S48929-001 OK

S/N S48929-002 OK

Allan Sanders / 10/4/95 — [signature] / N/A / 10-3-95 (4 ... 10-4-95)

MILLWRIGHT SIGNATURE /DATE QC SIGNATURE /STAMP /DATE

Step	Description
7.7	NONSTRUCTURAL WELD INSPECTION:
7.7.1	Visual inspection around circumferential area for dents, skin distortion, and paint chipping/cracking for both limiters.

Comments: S/N S48929-001 OK Nothing unusual outside of normal handling marks/scratches/

S/N S48929-002 OK chipped paint, etc.

Allan Sanders / 10/4/95 — [signature] / N/A / 10-4-95

MILLWRIGHT SIGNATURE /DATE / QC SIGNATURE /STAMP /DATE

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.2.3.1 - July 15, 1996

Acceptance Criteria:

Documentation which demonstrates that the BUSS cask trailer is road worthy and ready for transport.

Discussion:

The BUSS Cask trailer HO-63-3989 is subjected to an annual Class A & B inspection to evaluate the condition of various components. The Class A & B inspection was accelerated by the Capsule Management Team by four months ahead of the scheduled due date as a prudent measure to assure the performance of the trailer and to identify any deficiencies in-house prior to DOT inspections.

During the Class A & B inspections it was noted that the trailer brakes were significantly worn therefore required immediate replacement. In addition eight new tires were installed to replace the existing tires that had less than 50% tire tread. Both the brake pads and the tires were replaced.

In addition to the Class A & B inspection the Capsule Management Team requested the WHC transportation and Packaging group to perform a compliance check/inspection in accordance with 49 CFR 396 and a commercial vehicle safety alliance (CVSA) inspection which is the north american standard, uniform out of service criteria. This compliance check and its associated inspection points are similar to the compliance check performed by the DOT State inspectors however the DOT inspectors utilize an enhanced version. The WHC compliance check identified the following deficiencies, reference report No.001, attached.

1. Right side front conspicuity marking is peeling in the red section of the marker.

2. Rear end - conspicuity marking is peeling in the red section of the marker.

3. Brakes out of adjustment

4. Right side - inside of frame rail there is a crack at the weld.

Note: Items 1 and 2 were repaired at WESF and item 3 (brake adjustment) was performed at the 200E maintenance garage.

The weld repair, item 4, was completed by Nelson Manufacturing Company under purchase order # WDV-VDD-A24377. Nelson Manufacturing fabricated the trailer initially therefore WHC determined any weld repair should be performed by the original manufacturer utilizing the same welding process and weld procedure along with the applicable non destructive examination(s). No relevant indications were noted after the weld repair, reference MQS Magnetic Particle Examination Report # F0285.

Supporting Documentation:

- Purchase Order No. WDV-VDD-A24377
- Nelson Manufacturing Welding Procedure (SHT.1-4)
- Nelson Manufacturing Report of Visual Inspection of Welds
- MQS Magnetic Particle Examination Report No. F0285
- Compliance Check Closure Form # 002-

Outstanding Items/Limitations:

- Followup report for for 49 CFR 396 and a commercial vehicle safety alliance (CVSA) inspection. This item, though not specifically required is scheduled for July 30, 1996. See note for closure below.

Completion: Richard L. Pawlak Date: 7/24/96
M. W. Pawlak

Concurrence: Paul T Saueressig Date: 7/24/96
P. T. Saueressig

NOTE: Followup inspection in accordance with 49 CFR396 & (CVSA) inspection criteria was completed on July 30, 1996. Report No. 002 attached as supporting record.

Richard L. Pawlak 7/30/96
Paul T Saueressig 7/30/96

372-0050

NO. 001

DOE-T''' DRIVER/EQUIPMENT COMPLIANCE CHECK

U.S. DOT N\ | INSP. TYPE | PRE-SELECT ☒ RANDOM | AUDIT ☐ OTHER/SPECIAL

NAME OF CARRIER | INSPECTION DATE: July 1 1996

STREET ADDRESS | START TIME: 8:50 ☒ AM ☐ PM | INTERSTATE? ☒ YES ☐ NO

CITY | ST | ZIP | PLACE OF INSPECTION: B-PLANT WESF

DRIVER A | LICENSE NO. | ST | DATE OF BIRTH | PHYSICAL DATE | OS

DRIVER B | LICENSE NO. | ST | DATE OF BIRTH | PHYSICAL DATE | OS

SHIPPER | ORIGIN (CITY/STATE) | SHIPPING DOCUMENT NO.

RECEIVER | DESTINATION (CITY/STATE) | CARGO TANK SPEC. NO.

COMMODITY | HAZ MAT? Y N | RQ? Y N | HWT Y N | PLACARDT Y N | HAZARD CLASS | UN/NA NO.

VIN NO. 1FDXH81E4RVA17346 | ODOMETER 2,820 | HUBOMETER 34,085 | KM | NO. AXLES 4 | AXLES REQ. BRAKES 4

UNIT TYPE: TR-STRAIGHT TRUCK TT-TRUCK TRACTOR ST-SEMI TRAILER PT-POLE TRAILER FT-FULL TRAILER DC-DOLLY CONVERTER BU-BUS OT-OTHER

VEHICLE ORDER	UNIT TYPE	MAKE	BASE PLATE	ST	COMPANY NO	OUT OF SERVICE
1	TT	Ford	E-37525			
2	ST	Nelson	E-37515			
3						
4						
5						
6						

STEERING — BRAKE ADJUSTMENT MEASUREMENTS

	TYPE	AXLE 1	TYPE	AXLE 2	AXLE 3	AXLE 4	AXLE 5	AXLE 6	AXLE 7	AXLE 8	AXLE 9
RIGHT			30	1 7/8	2 1/4						
LEFT			30	2 1/2"	2"						

DECAL TT/TR | DECAL TRL 1 | DECAL TRL 2 | DECAL TRL 3

MCS PART NO.	VEH ORDER	OS	VIOLATIONS, DEFECTS, FINDINGS AND REMARKS
396.3	2		TRAILER: Right side and rear end - conspicuity marking - peeling off.
396.3	2		TRAILER: Right side - Inside of Frame rail, crack at weld
396.3	2	X	TRAILER: - BRAKES out of adjustment as noted above

VEHICLE/DRIVER ORDER	"OUT OF SERVICE" REQUIRED REPAIRS UNDER MCSR PART 396.7	OUT OF SERVICE STICKER NO.(S)
2	Trailers: Adjust brakes	

Appendix A
Page 615
WHC-SD-WM-RRR-010 Rev. 0

SIGNATURE/INSPECTOR: Rayby Lee Toolson | FINISH TIME: 10:15 ☒ AM ☐ PM | COPY RECEIVED BY

OS / VIOL REPAIR VERIFIED? Y ☐ | INSPECTOR ☐ | INITIAL: | DATE:

BUS, TRAILER, AND HEAVY TRUCK INSPECTION REPORT (CLASS B)

HO No.	Location	Date
64 3989	2711E	6/27/96

Refer to FOT&MS Procedure EM-01 Paragraph 4.3.2 for additional inspection criteria.
Vehicle Components Inspected mark (x) Yes, mark (x) No, or (-) Does not Apply

Okay Yes	Okay No		Okay Yes	Okay No	
		1. BRAKE SYSTEM (13)			7. STEERING MECHANISM (15)
✓		a. Serving brakes		—	a. Steering wheel free play
✓		b. Parking brake system		—	b. Steering column
✓		c. Brake drums or rotors		—	c. Front axle beam, etc.
✓		d. Brake hose		—	d. Steering gear box
✓		e. Brake tubing		—	e. Pitman arm
—	—	f. Low pressure warning		—	f. Power steering
—	—	g. Tractor protection valve		—	g. Ball and socket joints
—	—	h. Air compressor		—	h. Tie rods and drag links
—	—	i. Electric brakes		—	i. Nuts
—	—	j. Hydraulic brakes		—	j. Steering system
—	—	k. Vacuum systems			
		2. COUPLING DEVICES (59)			8. SUSPENSION (16)
—	—	a. Fifth wheels	✓		a. Any cracked, broken, missing U-bolts, spring hangers or other axle parts.
—	—	b. Pintle hooks			
—	—	c. Drawbar/towbar eye	✓		b. Spring assembly
—		d. Drawbar/towbar tongue			
	—	e. Safety devices	✓		c. Torque, radius or tracking components.
—	—	f. Saddle mounts			
		3. EXHAUST SYSTEM (43)			9. FRAME (14)
	—	a. Any exhaust system leaking forward of or directly below driver/sleeper compartment).	✓		a. Frame members
			✓		b. Tire and wheel clearance
	—	b. A bus exhaust leaking/discharging into atmosphere STDs 1,2,3	—	—	c. Adjustable axle assemblies (Sliding subframes)
					10. TIRES (17)
	—	c. Part of exhaust system located and likely to result in burning or damaging electrical wiring, fuel supply, etc.	—	—	a. Any steering axle tire of a power unit.
			✓		b. All other tires.
		4. FUEL SYSTEM (44)			11. WHEELS AND RIMS (18)
—	—	a. Visible Leak	—	—	a. Lock or slide ring
—	—	b. Fuel tank cap missing	✓		b. Wheels and Rims
			✓		c. Fasteners
—	—	c. Fuel tank securely attached	✓		d. Welds
		5. LIGHTING DEVICES (34)			12. WINDSHIELD GLASING (2)
✓		a. All lighting devices and reflectors required by Section 393 work.		—	a. Requirements and exceptions for cracks, vision discoloration.
		6. SAFE LOADING			13. WINDSHIELD WIPERS (2)
✓		a. Lading or spare tire will not fall out on highway		—	a. Present and working effectively.
✓		b. Protection against shifting cargo.			

Inspection is complete as indicated above.

C.A. CRAMBROOK
Printed Name Qualified Inspector

6/27/96
Date

Qualified Inspector's Signature

6/27/96
Date

ANNUAL VEHICLE INSPECTION REPORT

VEHICLE HISTORY RECORD	
REPORT NUMBER	FLEET UNIT NUMBER
21[illegible]583	525753
DATE 6-21-96	

MOTOR CARRIER OPERATOR: Westinghouse Hanford Company

ADDRESS: P.O. Box 1970

CITY, STATE, ZIP CODE: Richland, WA 99352

VEHICLE TYPE: ☐ TRACTOR ☒ TRAILER ☐ TRUCK ☐ (OTHER)

INSPECTOR'S NAME (PRINT OR TYPE): G.A. CLAYBROOK

THIS INSPECTOR MEETS THE QUALIFICATION REQUIREMENTS IN SECTION 396.19. ☒ YES

VEHICLE IDENTIFICATION (VIN) AND COMPLETE ☒ LIC. PLATE NO. ☐ VIN ☐ OTHER: E 37515 E 17515

INSPECTION AGENCY/LOCATION (OPTIONAL):

VEHICLE COMPONENTS INSPECTED

OK	NEEDS REPAIR	REPAIRED DATE	ITEM
			1. BRAKE SYSTEM
X			a. Service Brakes
X			b. Parking Brake System
X			c. Brake Drums or Rotors
X			d. Brake Hose
X			e. Brake Tubing
NA			f. Low Pressure Warning Device
NA			g. Tractor Protection Valve
NA			h. Air Compressor
NA			i. Electric Brakes
NA			j. Hydraulic Brakes
NA			k. Vacuum Systems
			2. COUPLING DEVICES
NA			a. Fifth Wheels
NA			b. Pintle Hooks
X			c. Drawbar/Towbar Eye
NA			d. Drawbar/Towbar Tongue
X			e. Safety Devices
NA			f. Saddle-Mounts
			3. EXHAUST SYSTEM
NA			a. Any exhaust system determined to be leaking at a point forward of or directly below the driver/sleeper compartment.
NA			b. A bus exhaust system leaking or discharging to the atmosphere in violation of standards (1), (2) or (3).
NA			c. No part of the exhaust system of any motor vehicle shall be so located as would be likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle.
	NA		**4. FUEL SYSTEM**
	NA		a. Visible leak
	NA		b. Fuel tank filler cap missing
	NA		c. Fuel tank securely attached
			5. LIGHTING DEVICES
	X		All lighting devices and reflectors required by Section 393 shall be operable.
			6. SAFE LOADING
	X		a. Part(s) of vehicle or condition of loading such that the spare tire or any part of the load or dunnage can fall onto the roadway.
			b. Protection against shifting cargo
			7. STEERING MECHANISM
	NA		a. Steering Wheel Free Play
	NA		b. Steering Column
	NA		c. Front Axle Beam and All Steering Components Other Than Steering Column
	NA		d. Steering Gear Box
	NA		e. Pitman Arm
	NA		f. Power Steering
	NA		g. Ball and Socket Joints
	NA		h. Tie Rods and Drag Links
	NA		i. Nuts
	NA		j. Steering System
			8. SUSPENSION
	X		a. Any U-bolt(s), spring hanger(s), or other axle positioning part(s) cracked, broken, loose or missing resulting in shifting of an axle from its normal position.
	X		b. Spring Assembly
	X		c. Torque, Radius or Tracking Components.
X			**9. FRAME**
X			a. Frame Members
X			b. Tire and Wheel Clearance
NA			c. Adjustable Axle Assemblies (Sliding Subframes)
			10. TIRES
NA			a. Tires on any steering axle of a power unit.
X			b. All other tires.
			11. WHEELS AND RIMS
NA			a. Lock or Side Ring
X			b. Wheels and Rims
X			c. Fasteners
			d. Welds
NA			**12. WINDSHIELD GLAZING** Requirements and exceptions as stated pertaining to any crack, discoloration or vision reducing matter (reference 393.60 for exceptions)
NA			**13. WINDSHIELD WIPERS** Any power unit that has an inoperative wiper, or missing or damaged parts that render it ineffective.
			List any other condition which may prevent safe operation of this vehicle.

INSTRUCTIONS: MARK COLUMN ENTRIES TO VERIFY INSPECTION: X OK, X NEEDS REPAIR, NA IF ITEMS DO NOT APPLY, _____ REPAIRED DATE

CERTIFICATION: THIS VEHICLE HAS PASSED ALL THE INSPECTION ITEMS FOR THE ANNUAL VEHICLE INSPECTION REPORT IN ACCORDANCE WITH 49 CFR 396.

DUPLICATE

400-FS-03

BUS/TRAILER/HEAVY TRUCK CLASS "A" INSPECTION

Truck No. 64389 | Mileage 34,084 | Date 6/27/96

CODES: USE CODE NUMBER FOR EACH ITEM DESIGNATING WORK PERFORMED

1. Adjust 2. Align 3. Wash/Clean 4. Tune-up 5. Inspect 6. Install Gaskets 7. Lubricate 8. Overhaul 9. Repair 10. Install 11. Remove 12. Weld 13. Replace 14. Straighten 15. Paint 16. Balance 17. Install Seal 18. Grind 19. OK

	CODE	INIT.
CLEAN VEHICLE		
Engine		
Battery and Box		
ROAD TEST		
WRITE DEFECTS ON HARD COPY.		
FRONT AXLE		
Brake Lining R&L		
Drums R&L		
CAM Shaft R&L		
Anchor Pins R&L		
Wheel Bearing R&L		
Diaphragms R&L		
Shock Absorbers R&L		
Wheel Nuts & Studs R&L		
Steering Knuckles R&L		
Steering Mounting		
Linkage		
Wheel Alignment Bal		
REAR AXLE/BOGIE		
Brake Lining R&L	13	SB
Drums R&L	3-5	
CAM Shaft R&L	19	
Anchor Pins R&L	3-7	
Wheel Bearing R&L	3-7	
Diaphragms R&L	13	
Seal Inner R&L	13	
Seal Outer R&L	13	
Shock Absorbers R&L	19	
Wheel Nuts & Studs R&L	19	
Flange Studs & Nuts	19	
CLUTCH SYSTEM		
Inspect		
Adjustment		
Release Bearing		
Linkage		
Fork		
Clutch Brake		
Foot Paddle		

	CODE	INIT.
SUSPENSION		
Springs/Torsilastic	19	SB
Shackles	19	
Frame	19	
Radius Rod & Bushing	19	
Cross Member	19	
DIFFERENTIAL		
Flanges		
Seal		
Drive Line		
U-Joints		
AIR SYSTEM		
Compressor		
Air Governor		
Lines		
Air Tanks		
Compressor Inlet		
Application Valve		
Quick Release Valve		
TRANSMISSION		
Vents		
Flanges		
Seal		
Shifting		
Speedometer Drive		
BATTERY		
Gravity		
Water Level		
Cables		
Connections		
Carrier Paint		
Holddown		
Holddown Bolt		
BUS/CAB INTERIOR		
Floor		
Seat Frames		
Seat Cushions		
Windows		

	CODE	INIT.
Glass		
Latches		
Steps		
Fire Extinguisher		
Hand Rails		
LIGHTING SYSTEM		
Headlights		
Fog Lights		
Dome Lights		
Stop Lights	19	SB
Tail Lights	19	
Turn Lights	19	
Instrument Lights		
Engine Comp. Lights		
Warning Lights		
Switches		
Step Lights		
Warning Buzzers		
HEATING SYSTEM		
Heater Core		
Heater Motors		
Fans		
Hoses		
Defroster		
AIR CONDITIONING SYSTEM		
Inspect Compressor		
Freon Level		
Belts		
BODY EXTERIOR		
Body Damage	19	SB
Bumpers		
Ventilators		
W/S Wipers		
Rear View Mirrors		
Hand Rail		

	CODE	INIT.
OIL SYSTEM		
Lines		
Cooler		
Dash Gauge		
Oil Pressure		
ENGINE		
Air Intake System		
Air Cleaner		
Drain Hoses		
Alternator		
Regulator		
Starter & Control		
Exhaust System		
Accelerator Linkage		
Shutoff		
Emergency Stop		
Governor		
FUEL SYSTEM		
Tank		
Lines		
Pump Pressure		
Primary Filter		
Secondary Filter		
Fuel Gauge		
COOLING SYSTEM		
Radiator		
Shutter		
Surge Tank		
Water Pump		
Lines		
Hoses		
Fan		
Shutterstat		
Alarmstat		
Final Road Test		

REMARKS

DUMP TRUCKS	
	Check Hoist Operation
	CAUTION: Install Safety Wedge's & Supports
	INSPECT: Hoist Mountings
	Cylinders & Lines for Leaks
	Check Oil Level
	Safety Chains
	Power Take-off Mounting for Tightness & Leaks
	Universals & Center Bearings for Condition
	Check & Adjust Linkage
	Cab Guard for Condition
	Tail Gate & Latches for Condition & Adjustment

WRECKERS & "A" FRAMES			
	CHECK OPERATION & CONDITION: Brakes		
	Boom		Sheaves
	Sheave Pins		Boom Pins
	Cables		Levers
	Power Take-off		Winch Mechanism
	Towing Cradle		

FUEL TANK TRUCKS & LUBRICATION TRUCKS
CHECK: Pumps
Hoses
Nozzles
Static Ground Chains & Cables
Reflector Type Flares
Fire Extinguishers
Truck Mounting Bolts
"No Smoking" Signs
Give Special Attention to Electric Wiring Harness

GARBAGE TRUCK
Check Operation
CAUTION: Install Safety Wedges & Supports
INSPECT: Hoist Mounting
Check Hydraulic Cylinders & Hoses
Compactor Mechanism
Power Take-Off
Body & Attachments
Check Hydraulic Oil Level and Filter

TRUCK TRACTOR
INSPECT: Fifth Wheel Mounting
CHECK: Operation
Locking Device & Jaws
Lubricate
CHECK: Brake Controls
Light Wiring

TRAILERS	
✓ INSPECT: Springs	✓ Shackles
✓ Center Bolts	
✓ Tighten "U" Bolts	
✓ Check Radius Rods	
✓ Wheels	
✓ Clean & Inspect Brake Linings, Drums, Diaphragms	
✓ Check Grease Seals	
✓ Clean, Repack & Adjust Wheel Bearings	
INSPECT: Fifth Wheel Mounting & Pin	
✓ Landing Supports	✓ Safety Chains
✓ Brake Hoses & Connections	
✓ Light Wiring & Connections	

REMARKS

Date Completed

6/27/96

Mechanic Signature

Supervisor Signature

BD-9100-131R (10/90)

THIS SHIPPING ORDER — Carbon, and retained by [illegible] Agent.

DESIGNATE WITH AN (X)
BY TRUCK ☐ FREIGHT ☐

RECEIVED, subject to the classification and lawfully filed tariffs in effect on the date of issue of Shipping Order.

the property described below, in apparent good order, except as noted [illegible] contents and condition of contents of packages unknown, marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the [illegible] Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

From NELSON MANUFACTURING CO.
At 6448 U.S. Rt. 224 • Ottawa, OH 45875

DATE: JULY 1996
SHIPPER'S NO.: 1313

CARRIER ↓
CARRIER'S NO.:

BY

CONSIGNEE AND DESTINATION:
WESTINGHOUSE HANFORD COMPANY
CENTRAL RECEIVING
2355 STEVENS DRIVE
RICHLAND, WA 99352

TRI-STATE

ROUTE

DELIVERING CARRIER

LAND: CRAIG BOWERS 509/376-7627

CAR OR VEHICLE INITIALS & NO.

NO. PACKAGES	* HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓
1		NELSON TRAILER SERIAL # 4685			
		(BOSS CASK TRAILER)			
		R/PAINTED / PAINTED PO# WDV-VDD-AZ9377			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
Per Tony Nelson
(Signature of Consignor)

If charges are to be prepaid, write or stamp here, "To be Prepaid."

Received $ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier.

Per _____
(The signature here acknowledges only the amount prepaid).

Charges Advanced.
$ _____

When transporting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response Communication Standard (HM-126C). Provide emergency response phone number in case of incident or accident. (in box at right)

EMERGENCY RESPONSE PHONE NO.

SHIPPERS CERTIFICATION: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SIGNATURE Tony Nelson TITLE _____

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
† Shipper's imprints in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.
Note — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____

Joplin, MO 1-800-234-8766

C.O.D. SHIPMENT
C.O.D. Amt _____
Collection Fee _____
Total Charges _____

THIS SHIPMENT IS CORRECTLY DESCRIBED.
CORRECT WEIGHT IS _____ LBS.

† The hbra boxes used for this shipment conform to the specifications set forth in the box makers certificate thereon, and all other requirements of the Consolidated Freight Classification.

Per Jeremy Henson Shipper

NELSON MANUFACTURING CO.
6448 U.S. Rt. 224 • Ottawa, OH 45875

Shipper, Per _____

Agent must detach and retain this Shipping Order and must sign the Original Bill of Lading.

Permanent post-office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.

2

DO NOT WRITE/TY... IN THE BOLD LINE AREA(S).

REQUISITION

Page 1 of 2 Date: 7/9/96

Buyer:			Buyer's Signature:
WOV	VOD	A24377	

Author:	MSIN:	Area:	Phone:	Need Date:	Associated Documents/End Use:
Eric P. Clements	G1-13	1100	376-4446	July 24, 1996	
Deliver To:	**Bldg./Room:**	**Area:**	**Phone:**	**QA/QC Requirements**	
Eric P. Clements	1163	1100	376-4446	Receipt Inspection, Items:	

Approved By	Date	MSIN	Phone	Location:
Approving Manager J. Greg Field	7/9/96	G1-11	376-0781	
QA - C.R. Hoover	7/9/96	G1-11	372-3625	Source Inspection Req: ☐ Yes ☒ No
				QA Review of Proposal: ☐ Yes ☒ No

Program Code:

Item	Co ID	Org. Code	Cost Element	Charge Code	% of Cost	Cost Estimate
	W	84100	100	KW6400		$2,500.00

Item No.	Qty.	Unit of Measure	Stock Number/Description/Specification	SSC/AD	QA Clauses	Unit Price	Total Price	Rec %	Prod Code
1	1	EA	Prepare weld repair procedure per AWSD1.1, for review by WHC. Repair main beam weld and MT repaired weld. Touch-up paint rust spots on trailer deck, sides & welded areas on the beneficial uses shipping system (Buss) Trailer DOE Serial #HO-64-3989 Government Plate # E37515. The Buss Trailer is a NHTSA/DOT Certified Trailer solely dedicated for the transport of the Buss Cask. The trailer manufacturer is Nelson Manufacturing, and to maintain Nelson's certification of the trailer, Nelson must repair the main structural beam weld. They will repair	3/9	N/A	2,360.00	2,360.00	0	2330

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WHC-SD-WM-RRR-010 Rev. 0

Ship To:
☒ 1. 2355 Stevens Dr., Richland, Washington, 99352
☐ 2. M0840, 200 East, Richland, Washington, 99352
☐ 3. Other: _____ Location

Vendor Name:	Confirm To:	Phone:	Date:
NELSON MANUFACTURING CO.	Anthony Niese	419-523-5321	7-15-96
Vendor Code: 60446 **Zip:** 45875			
Promised Date: 7-24-96			
Route Code: 35 **FOB Point:** OTTAWA, OHIO	**Payment Terms:** Net 30	**Ship Via:** See Below	

T of W	LSSA	OO	B of A	RSS	BPR	OVAR	DATA	SBSA	DBSA	BCA	GOV P.	PAT	SLR	HO
10 A	N B	Y C	2 D	20 E	14 F	0 G	N H	Y I	N J	N K	Y L	N M	N N	N O

DISTRIBUTION: White - Purchasing Other copies distribute as required

54-7600-001 (02/96)

CONTINUATION SHEET

PURCHASE REQUISITION

Requisition No.	Vendor	Vendor No.	Purchase Order No.	Page
			A24377	2 of 2

Item No.	Qty	Unit	Product Code	Description	Unit Price	Total	Recycle Yes	Recycle %
				the weld, inspect the weld and touch-up paint rust spots on the trailer to prepare it for use to transport the Buss Cask in late July 1996 to support the DOE Cs recovery Program.				
2				The Seller's welding and magnetic particle examination procedures, utilized to accomplish the required weld repair, as well as the Seller's certified weld inspection and NDE personnel shall be the same as those utilized relative to fabrication and inspection of the Long Length Contaminated Equipment (LLCE) Trailers procured through Mobilized Systems, Inc. (MSI) via WHC purchase order # MDW-XDV-437948, in order to reduce the timetable for completion of the required weld repair.				
				The Seller shall submit a letter to the Buyer which specifically states that they shall comply with these requirements and include a listing of the procedures and personnel which they intend to utilize during performance of this purchase order. This letter shall be submitted to the buyer for approval after award of the purchase order and prior to the start of repair activities.				
3				The Seller shall submit copies of the following documentation with the completed trailer assembly: o Applicable weld inspection reports o Applicable Magnetic Particle Examination Reports				

~~A-6001-665~~ (06/95)

PURCHASE ORDER

Westinghouse Hanford Company

Westinghouse Hanford Company
A subsidiary of Westinghouse Electric Corporation
P.O. Box 1970 Richland, Wa. 99352

RAINEY, BV — Telephone 509/ 376-5215

U.S. Government Contract No. DE-AC06-87RL10930 — Total Pages (Buyer Insert)

Mo./Day/Yr.	Page	Inquiry No.	This order is priority rated DOE-E	Certified Under D.P.A.S. Reg. (15CFR350)	Vendor Code	Order No.
07/15/1996	1	W-A24377	2		60646	WDV-VDD-A24377

NELSON MANUFACTURING COMPANY

6448 US RT 224 EAST
OTTAWA OH 45875-9789

IMPORTANT

Show Order No.on all packages, invoices, and correspondence. Complete packing list must accompany each shipment. Failure to properly identify will delay receipt of shipment and payment.

SHIP TO: 1

1. The Department of Energy
c/o Westinghouse Hanford Company
Central Receiving
2355 Stevens Drive
Richland, Washington 99352

2. As indicated below.

F.O.B.	Date Delivery Required at F.O.B. Point	Buyer	
OTTAWA, OH	07/24/96	D J VANCE	G1-64

Terms of Payment	Code	Ship Via
NET 30 DAYS	35	SEE BELOW

ITEM	QUANTITY	U/M	DESCRIPTION	UNIT PRICE	TOTAL PRICE
			Confirming Order if Checked [X] DO NOT DUPLICATE		
			SHIP VIA: CONTACT WHC'S GREG BONESS (509-376-7627) TWO (2) DAYS PRIOR TO ROUTING FOR SHIPPING ARRANGEMENT.		
1	1	EA	REPAIR TRAILER MANUFACTURED BY NELSON MANUFACTURING IN ACCORDANCE WITH ATTACHED SPECIFICATION REQUIREMENTS	2360.00	2360.00
			TOTAL VALUE OF THIS ORDER	2360.00	

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Westinghouse Hanford Company

Signature: D J Vance 7-15-96 (Date)

Item	C Center	MC	C Elem.	Chrg. Code	%	Author	MSIN	Area	Approval
001-001UW84100			100	KW64D	100	ERIC CLEMENTS			
						Co-Author	MSIN	Area	
						Deliver To	Bldg/Rm	Area	
						ERIC P. CLEMENTS	1163	1100	

00 PURCHASING NUMERICAL FILE

TRAILER REPAIR

Prepare weld repair procedure per AWSD1.1, for review by WHC. Repair main beam weld and MT repaired weld. Touch-up paint rust spots on trailer deck, sides & welded areas on the beneficial uses shipping system (Buss) Trailer DOE Serial #HO-64-3989 Government Plate #E37515. The Buss Trailer is a NHTSA/DOT Certified Trailer solely dedicated for the transport of the Buss Cask. The trailer manufacturer is Nelson Manufacturing, and to maintain Nelson's certification of the trailer, Nelson must repair the main structural beam weld. They will repair the weld, inspect the weld and touch-up paint rust spots on the trailer to prepare it for use to transport the Buss Cask in late July 1996 to support the DOE Cs recovery Program.

The Seller's welding and magnetic particle examination procedures, utilized to accomplish the required weld repair, as well as the Seller's certified weld inspection and NDE personnel shall be the same as those utilized relative to fabrication and inspection of the Long Length Contaminated Equipment (LLCE) Trailers procured through Mobilized Systems, Inc. (MSI) via WHC purchase order MDW-XDV-437948, in order to reduce the timetable for completion of the required weld repair.

The Seller shall submit a letter to the Buyer which specifically states that they shall comply with these requirements and include a listing of the procedures and personnel which they intend to utilize during performance of the purchase order. This letter shall be submitted to the Buyer for approval after award of the purchase order and prior to the start of repair activities.

The Seller shall submit copies of the following documentation with the completed trailer assembly:

- Applicable weld inspection reports
- Applicable Magnetic Particle Examination Reports

FAX COVER SHEET

Date: July 15, 1996

Page 1 of 3 Pages (Coversheet included)

Fax Number To:	Fax Number From:
419-523-6247	509-372-3793
Name:	**Name:**
Anthony N. Niese	Darla Vance
Phone Number/Location:	**Phone Number/Location:**
419-523-5321	509-376-5215
Organization:	**Organization:**
Nelson Manufacturing Company	Westinghouse Hanford Company

Message

Reference: Purchase Order No. WDV-VDD-A24377

See attached copy of subject purchase order

Author: Mary D (Denise) Clements at ~WHC2
Date: 7/19/96 8:49 AM
Priority: Normal
TO: Eric P Clements at ~WHC296
Subject: Welding Procedure

---------- Message Contents ----------

Eric,

Tom Delucchi had no problem with the weld procedure from Nelson. He reviewed it on Friday July 12th and agrees that the procedure will provide a quality weld.

Denise

NELSON MANUFACTURING COMPANY
Builders of Nelson Trailers
6448 US Route 224 East
Ottawa, Ohio 45875-9789
Phone (419)523-5321
Fax (419)523-6247

Number of Pages to Follow (4)

To: WHC Date: 7/9/96 Attn: Denise Clements

Hi Denise!

Following is our standard welding repair procedure. If you have any questions please call either myself or Craig Downing. Craig is our Welding Engineer.

Tony Niese

NELSON MANUFACTURING WELDING PROCEDURE

PROCESS:	Gas Metal Arc (GMAW), Semi-Automatic, Spray Transfer	NO. WP-001	REV. -
MATERIAL:	A572 Grade 50 Beam and Plate A514 Plate A572 Grade 60 Beam A36 Plate A36 Structural Crossmember A500 Grade B Structural Tubing	SHEET 4 OF 4	DATE 12/8/95
		WELDING SPEC. AWS D1.1-92	

5. Welding Inspection

When complete penetration is required, the backside must be ground to sound metal and, unless otherwise specified, visually inspected prior to welding.

Each pass must be visually inspected by the welder and cleaned prior to depositing additional passes.

Groove weld joints must be inspected for minimum depth and included angle prior to welding.

6. Back-Up Material

Material of equivalent yield strength as the material being joined may be used as back-up material to prevent melt through.

7. Welding Repair Procedure

Remove defective area by grinding and/or air arcing and grinding.

Visually inspect excavation to ensure complete defect removal

Excavation walls shall have a min. included angle of 45 and min. root radius of 1/8".

Excavation to be welded with an approved welding procedure.

8. Amperage vs. Wire Feed Speed

Amperage ranges listed are for reference purposes only. The wire feed speed controls the amperage and therefore will be maintained within the specified limits.

9. Alternate Welding Processes

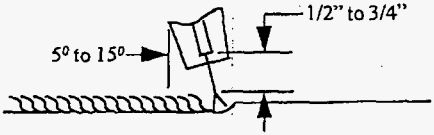
The SMAW process may be used as an alternate in those instances such as out of position work, rework/repair, capping, tacking, etc. Welding shall be performed by a qualified welder using an approved welding procedure.

NELSON MANUFACTURING WELDING PROCEDURE

PROCESS:	Gas Metal Arc (GMAW), Semi-Automatic, Spray Transfer	NO. WP-001	REV. -
MATERIAL:	A572 Grade 50 Beam and Plate A514 Plate A572 Grade 60 Beam A36 Plate A36 Structural Crossmember A500 Grade B Structural Tubing	SHEET 3 OF 4	DATE 12/8/95
		WELDING SPEC. AWS D1.1-92	

3. Welding Technique (continued)

A torch travel angle of 5°-15° (push angle) and an electrode stickout of 1/2" to 3/4" shall be used as shown below.



To obtain a flatter bead shape use a torch travel angle closer to a 15° push angle.

4. Preheat/Interpass Temperature and Filler Metal Requirements

Preheat and interpass requirements shall be as follows unless otherwise specified. Requirements determined based on thickness of thickest part to be joined.

Material	Thickness	Preheat	Filler
A36	0" - 3/4"	N/R	NS-115
A572 Grade 50	over 3/4" - 1 1/2"	50	NS-115
	over 1 1/2" - 2 1/2"	150	
	over 2 1/2"	225	
A572 Grade 60	0" - 3/4"	50	NS-115
	over 3/4" - 1 1/2"	150	
	over 1 1/2" - 2 1/2"	225	
	over 2 1/2"	300	
A514	0" - 3/4"	50	NS-102
	over 3/4" - 1 1/2"	125	
	over 1 1/2" - 2 1/2"	175	
	over 2 1/2"	225	

Filler metal requirements for parts of different yield strengths are based on the lower yield strength material unless otherwise specified. Tack welds incorporated into the final weld shall be made with electrodes meeting the requirements of the final weld.

NELSON MANUFACTURING WELDING PROCEDURE

PROCESS:	Gas Metal Arc (GMAW), Semi-Automatic, Spray Transfer	NO. WP-001	REV. -
MATERIAL:	A572 Grade 50 Beam and Plate A514 Plate A572 Grade 60 Beam A36 Plate A36 Structural Crossmember A500 Grade B Structural Tubing	SHEET 2 OF 4	DATE 12/8/95
		WELDING SPEC. AWS D1.1-92	

1. Joint Geometry

Joint configuration and sizes will be defined by the weld callout on the welding print (isometric or drawing)

Unless otherwise noted, groove joints shall have an included angle of no less than 45^0 for flat and horizontal welds and 60^0 for vertical and overhead welds.

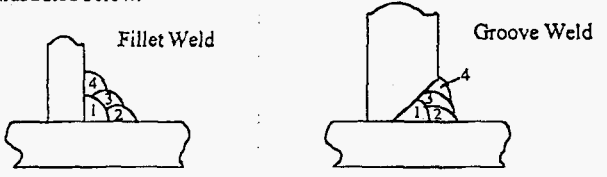
2. Weld Joint Preparation

Surfaces to be welded and surfaces adjacent to a weld, shall be free from loose or thick scale, slag, rust, moisture, grease, and other foreign material that prevent proper welding or produce objectionable fumes.

Flame cut edges
- Gouges less than 3/16" on otherwise satisfactory surfaces shall be removed by machining or grinding.
- Gouges that are greater than 3/16" may be repaired by welding as required provided the following conditions are met.
  1. Suitably prepare the repair area.
  2. Weld using an approved welding procedure.
  3. Grind the completed weld smooth and flush with the adjacent surfaces.

3. Welding Technique

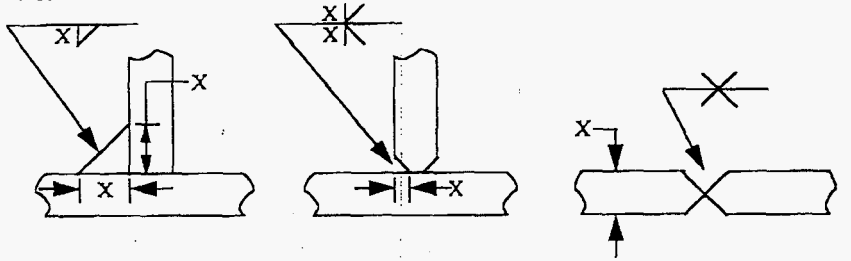
For multipass fillet and groove welds performed in the horizontal position, the stacking bead technique shall be used. This consists of using the previous bead as a shelf to support the bead being deposited. The sequence to accomplish this is illustrated below.



NELSON MANUFACTURING WELDING PROCEDURE

PROCESS:	Gas Metal Arc (GMAW), Semi-Automatic, Spray Transfer	NO. WP-001	REV. -
MATERIAL:	A572 Grade 50 Beam and Plate A514 Plate A572 Grade 60 Beam A36 Plate A36 Structural Crossmember A500 Grade B Structural Tubing	SHEET 1 OF 4	DATE 12/8/95
		WELDING SPEC. AWS D1.1-92	

JOINT GEOMETRY DEFINITION:



FILLET WELD PARTIAL PENETRATION WELD FULL PENETRATION WELD

ELECTRODE TYPE	NS115 (AWS ER70S-6), NS102 (AWS ER100S)
WELD POSITION	Flat, Horizontal
AUTO TRAVEL SPEED (IPM)	N/A
ELECTRODE DIAMETER	.045
CURRENT (AMPS)	230-250
ARC VOLTAGE	25-30
WIRE FEED SPEED (IPM)	300-350
CURRENT TYPE AND POLARITY	Direct Current, Electrode Positive
SHIELDING GAS	90%Ar - 10%CO_2
CUP SIZE FLOW RATE	5/8" 35-50 CFH
POWER SOURCE	Constant Voltage, Rectifier Type
REMARKS	Stringer weld passes only.

DATE: 7-18-96

TO: Eric Clements 362

FROM: Darla Vance

BLDG. G1-64 AREA PHONE 376-5215

SUBJECT

WA24377 - Trailer

Attached is documentation concerning weld inspections procedures & qualifications for subject purchase order.

SIGNED

Darla L Vance

REPLY

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SIGNED PHONE

* GPO1988-594-456/1003M
54-7600-122 (12-87)

FOR INTERNAL USE ONLY

ORIGINATOR : DETACH PINK COPY, SEND REMAINING SET FOR ADDRESSEE'S REPLY.
ADDRESSEE : WRITE REPLY. RETURN YELLOW COPY TO SENDER.

NELSON MANUFACTURING COMPANY
Builders of Nelson Trailers
6448 US Route 224 East
Ottawa, Ohio 45875-9789
Phone (419)523-5321
Fax (419)523-6247

Number of Pages to Follow (2)

To: WHC Date: 7/18/96 Attn: Darla Vance
Ref: PO #WDV-VDD-A24377

Hi Darla!

Following is a copy of our weld inspections on the weld repair that we completed on Nelson trailer, serial #4685. The magnetic particle test was completed by Bryant Duncan of MQS Inspections. The procedures and qualifications of both Bryant Duncan and MQS have been submitted and approved for the LLCE project that we are currently working on.

The trailer is currently in the paint room. It will be completed and ready for shipment Friday (7/19/96) afternoon.

Please call if you have any questions.

Tony Niese

Nelson Manufacturing

REPORT OF VISUAL INSPECTION OF WELDS

Project WELD REPAIR TRAILER # 4685
Quality Requirements AWS D1.1 92
Reported to WESTINGHOUSE HANFORD

WELD LOCATION AND IDENTIFICATION SKETCH

Date	Weld Identification	Area	Interpretation		Repairs		Remarks
			Accept	Reject	Accept	Reject	
7/17/96	REPAIR WELD	100%	✓		✓		REPAIR WELD FOUND
	TRAILER #						ACCEPTABLE
	4685						

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D1.1-92 Structural Welding Code.

Inspector Craig S. Downing
Test Date 7/17/96

Manufacturer or Contractor NELSON MANUFACTURING
Authorized by
Date

AWS QC 1 CRAIG S. DOWNING 96042451 CWI

MAGNETIC PARTICLE EXAMINATION REPORT

Control Number: F0285 Date: 7-17-96 Page 1 of 1

Customer	Address
Nelson Manufacturing Company	6448 US Route 224 East Ottawa, OH

Purchase Order Number	Plan or Drawing Number	Part Number
Verbal Craig	N/S	4685

Item Description: Repair Weld on trailer 4685

Product Form / Material Type	Material Temperature	Surface Condition	Heat Treatment Before / After
C/S	ambient	as welded	N/A /

Examination Code / Spec.	Acceptance Standard	MAS Procedure Number
AWS D1.1/94	AWS D1.1/92	21.B.091-1990 Rev. 0

TECHNIQUE

Pre-Clean Method	Material	Batch Number	Evaporation Time
N/A	N/A	N/A	N/A
Equipment Make	**Model**	**Serial Number**	**Dwell Time**
MagnaFlux	Y6	238	N/A
Particle Type / Batch Number	**Vehicle / Batch Number**	**Concentration**	**Application**
BA Red / 94D035	N/A	N/A	Dust

Circular Magnetization
AC Current N/A amps
DC Current N/A amps
Contact Type: _____

Longitudinal Magnetization
AC Current N/A amps
DC Current N/A amps
Cable Size: _____
Coil / Solenoid Turns: N/A

Prod Method
Spacing N/A amp/inches

Yoke Method
Spacing 4-6 inches

Continuous X
Residual _____

Demagnetization
Method N/A

Residual Field
N/A

Post-Clean Method	Material	Batch Number
N/A	N/A	N/A

DISPOSITION

Piece / Serial Number	Qty. Accept	Qty. Reject	Remarks
Repair Weld on Trailer 4685	1	0	No relevant indications were noted at this time.
Totals	1	0	

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Technician	Technician Signature	SNT-TC-1A Level:	Date
W. Bryant Duncan	W. Bryant Duncan	II	7-17-96

NO. 002

DOE-TMD DRIVER/EQUIPMENT COMPLIANCE CHECK

U.S. DOT NO. DOT 525753	INSP. TYPE	PRE-SELECT ☒ RANDOM ☐	AUDIT ☐ OTHER/SPECIAL	INSPECTION DATE July 30 1996	
NAME OF CARRIER Westinghouse HANFORD CO.				START TIME 8:40 ☒ AM ☐ PM	INTERSTATE? ☒ YES ☐ NO
STREET ADDRESS P.O. BOX 1970				PLACE OF INSPECTION B-PLANT - WESF	
CITY Richland	ST WA	ZIP 99352			

DRIVER A	LICENSE NO.	ST	DATE OF BIRTH	PHYSICAL DATE	OS	
DRIVER B	LICENSE NO.	ST	DATE OF BIRTH	PHYSICAL DATE	OS	
SHIPPER	ORIGIN (CITY/STATE)			SHIPPING DOCUMENT NO.		
RECEIVER	DESTINATION (CITY/STATE)			CARGO TANK SPEC. NO.		
COMMODITY	HAZ MAT? Y (N)	RQ? Y (N)	HW? Y (N)	PLACARD? Y (N)	HAZARD CLASS	UN/NA NO.
VIN NO. Trailer = 1N9A14527P1012724	ODOMETER	HUBOMETER	KM	NO. AXLES 2.	AXLES REQ. BRAKES 2.	

UNIT TYPE: TR-STRAIGHT TRUCK TT-TRUCK TRACTOR ST-SEMI TRAILER PT-POLE TRAILER FT-FULL TRAILER DC-DOLLY CONVERTER BU-BUS OT-OTHER

VEHICLE ORDER	UNIT TYPE	MAKE	BASE PLATE	ST	COMPANY NO	OUT OF SERVICE
1						
2	ST	Nelson	E-33515	WA	110-64-3889	
3						
4						
5						
6						

BRAKE ADJUSTMENT MEASUREMENTS

	STEERING TYPE	STEERING AXLE 1	AXLE 2	AXLE 3	AXLE 4	AXLE 5	AXLE 6	AXLE 7	AXLE 8	AXLE 9
RIGHT			30	1½	1¾					
LEFT			30	1 7/8	1 7/8					
	DECAL TT/TR		DECAL TRL 1		DECAL TRL 2				DECAL TRL 3	

MCS PART NO.	VEH ORDER	OS	VIOLATIONS, DEFECTS, FINDINGS AND REMARKS
			NOTE: Deficiencies identified on #001 Have been corrected.

VEHICLE/ DRIVER ORDER	"OUT OF SERVICE" REQUIRED REPAIRS UNDER MCSR PART 396.7	OUT OF SERVICE STICKER NO.(S)

SIGNATURE/INSPECTOR	FINISH TIME	COPY RECEIVED BY
Przybylski \ Toolson	9:05 ☒ AM ☐ PM	

OS / VIOL REPAIR VERIFIED? Y ☐ INSPECTOR ☐ INITIAL: DATE:

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.2.4.1 - July 15, 1996

Acceptance Criteria:

Documentation that shows functional testing has been performed on the PAX phones, intercoms, compressed air supply, electrical outlets, radios, CCTV systems, emergency lighting, etc. that must be operational during the cesium capsule receipt activity.

Discussion:

- The following information is required for to complete verification of system operability.

1. Verify telephone communication on those telephones that will be used.
2. Verify operability of intercoms used for this task.
3. The compressed air supply is operable and PMs affecting operability are current. This is to be accomplished under section 4.2.4.2.
4. Electrical check of the outlets in G Cell.
5. Radio transmission test for (Four) radios and the base stations.
6. CCTV system operable.
7. Emergency lighting operable.

Supporting Documentation:

- Completed work package or COG approval for the following:

1. Verify telephone communication on those telephones that will be used.

   Signature _____ Date 7/24/96.

2. Verify operability of intercoms used for this task.

   Signature _____ Date 7/24/96.

3. Electrical check of the outlets in G Cell.

   Signature _____ Date 7/24/96.

4. Radio transmission test for (Four) radios and the base stations.

Signature _____ Date 7/24/96.

5. CCTV system operable.

Signature _____ Date 7/24/96.

6. Emergency lighting operable.

Signature _____ Date 7/24/96.

Outstanding Items/Limitations:

- None. AJD 7/24/96

Completion: _____ Date: 7/24/96
S. J. Davis

Concurrence: _____ Date: 7/28/96
P. T. Saueressig

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.2.4.2

Acceptance Criteria:

Documentation showing completion of scheduled Preventive Maintenance for WESF equipment such as manipulators, cranes, etc. or justification why they will have no impact on the cesium recovery program.

Discussion:

The cranes, hoists, and forklifts were documented in preparedness item 4.2.1.2. All other PM items were covered under 4.2.5.2. See these two items for documentation.

As of the date of this affidavit, G cell is equipment with 4 fully functional manipulators. There is one ready spare. An additional spare is projected to be ready on August 1, 1996.

Supporting Documentation:

None.

Outstanding Items/Limitations:

None.

Completion: L. D. Brist M. H. Pereira for Date: 7-31-96

Concurrence: P. T. Saueressig Date: 7/31/96

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.2.5.1 - July 24, 1996

Acceptance Criteria:

Documentation showing all ancillary equipment, tools, and materials defined by the procedures are available at WESF.

Discussion:

A walkdown of the BUSS cask unloading procedure was with a craftsman and an engineer performing a "one over one" verification that items listed in the tools and supplies section of the procedure were present at the facility.

Supporting Documentation:

EO-100-023, Section 3.2, checked and indenpendantly verified.
EO-100-012, Section 3.2, checked and indenpendantly verified.

Outstanding Items/Limitations:

None.

Completion: Mike W. Pawlak Date: 7/26/96
M. W. Pawlak

Concurrence: Paul T. Saueressig Date: 7/26/96
P. T. Saueressig

3.2 Tools and Supplies

- Calibrated Cutie Pie
- Calibrated Geiger Mueller
- Calibrated beta-gamma radiation survey meter
- Calibrated torque wrench, 1/2-inch drive, 30-250 ft-lb capacity
- Calibrated torque multiplier, 1-inch drive, 200-2200 ft-lb capacity
- Calibrated Surface temperature measurement apparatus 0-400 °F Temperature Stick
- Scissor lift platform or scaffolding
- Socket wrench set, 1/2-inch drive
- Socket, 12 point 1 5/8-inch, 1-inch drive
- Hex driver set, 1/2-inch drive
- Phillips screwdriver
- Open/box end wrenches, 1-1/4-inch, 1-1/2-inch, 2-inch, 2-1/4-inch
- 3/4-inch drive ratchet with 40-inch handle
- 2-inch extension 3/4-inch drive
- 8-inch extension 1-inch drive
- 3/4-inch socket 3/4-inch drive
- 1-inch to 3/4-inch adapter
- 1/2-inch to 3/4-inch adapter
- 3/4-inch to 1-inch adapter
- Certified BUSS cask horizontal lifting device, Part No. S49072
- Certified BUSS cask vertical lifting device, Part No. S49069
- Certified BUSS cask handling fixture, Part No. S48501
- Impact limiter lifting bridle, swivel eyebolts (3 each)
- Certified nylon strap (min 2000 lb capacity)
- Lid guide pin #1, Part No. S48955 (1 each)
- Lid guide pin #2, Part No. S48956 (2 each)
- Basket guide assembly, Part No. S49073
- Lid lifting fixture, Part No. S48590
- Hardware, 1/2-inch-20UNF X 1.125-inch long, Grade 8 bolts
- Tape joint removal tool, Part No. S94963 (1 each) or equivalent.
- Protective clothing
- Thermal resistant blanket — ON ORDER
- Thermal resistant gloves
- Rags
- Mirror
- Duct seal
- Tongs or broom handle

7-25-96
0900
7/25/96
7/26/96

3.2 Tools and Supplies (continued)

- ✓ Duct tape
- ✓ Teflon thread sealant tape
- ✓ Plastic sheeting or fire retardant plastic
- HEPA filter tool
- ✓ "EMPTY" tags and labels
- ✓ Radiation chains, signs, truckport ramps, optional
- ✓ Keys (For power to G-Cell Door, Canyon door, Capsule Transfer Device, and truckport Personnel Door)

7-25-96
0900

7/25/96

7/25/96

Procedure No. EO-100-012

3.2 Tools and Supplies

- ✓ Air Hose and Air Scribe
- ✓ Calibrated Cutie Pie (CP)
- ✓ Calibrated Geiger Mueller (GM)
- ✓ Camera/Video Equipment with 2 x or greater magnification
- ✓ Go-No-Go Gage 2.75 inch (2.750 to 2.760 inches)
- ✓ Dummy Capsule or Plate Standard (1/64, 1/32, 3/32, 1/16 inch increments)
- ✓ Smear Swabs

ALL ITEMS LISTED ABOVE ARE AVAILABLE AT 225B AND NO ITEMS ARE OPEN.

7/25/96

7/25/96

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.2.5.2 - July 26, 1996

Acceptance Criteria:

Documentation which demonstrates that instrumentation is calibrated and updated as required.

Discussion:

Checklist item 4.1.2 included review of calibrations required prior to receiving capsules from ARECO. There are no OSR calibrations delinquent, and no other PM/S activities which would preclude return of ARECO capsules.

Supporting Documentation:

Attached are PM/S activity overdue reports which reflect no delinquent OSR activities. This easy writer report was generated to look at the OSR field for instrumentation calibration prior to August 1996.

Outstanding Items/Limitations:

- None.

Completion: R. D. Warren/C. Clemmons Date: 7/31/96

Concurrence: P. T. Saueressig Date: 8/1/96

Loop/Seq	PM/S Num	Type	SC	Admin	Component Number	Procedure Number	Complete Dt	Res	Act Hrs	Doc Number
	PM/S Title				Component Name	PM/S Authority				
	2C-00013	5			N/A	2C22010	07/10/96	22	8	2B-96-00915
	225-B DIESEL ENGINE & STANDBY					X,C12E				
	2C-00027	5			N/A	2C23005	07/12/96	23	4	2B-96-00841
	15 TON CANYON CRANE INSPECTION					X,C41D				
	2C-00031	5			N/A	2C23011	07/26/96	23	8	2B-96-01106
	INSPECT/MANIPULATR REPAIR CART					X,C33A				
	2C-00036	5			N/A	2C23017	07/08/96	23	8	2B-96-01105
	ACECO 25-TON CRANE INSPECTION					X,C41		32	2	
								22	0	
	2C-00054	5			N/A	2C35001	07/08/96	35	4	2B-96-00953
	10-T CAPSULE STORAGE CRANE,HOI					X,C41		32	4	
								54	0	
	2C-00055	5			N/A	2C35002	07/08/96	35	8	2B-96-00976
	15 T CHECO CRANE, HOIST ROPE &					X,C41D		32	2	
								54	0	
								04	0	
	2C-00059	5			N/A	2C35008	07/08/96	35	4	2B-96-00837
	ACECO 25-TON CRANE HOIST AND L					X,C41		32	4	
								14B	0	
	2C-00064	5			N/A	2C35013	07/08/96	35	16	2B-96-01111
	ANNUAL BUSS CASK LIFT EQUIPMEN					X,C99R				
V0005-1	2C-00102	7	3	REG	P-S1-1	N/A	07/08/96	18	1	2B-96-01110
	POOL CELL #1 ROTOMETER				P-S1-1	LOWERY,JL				
V0005-2	2C-00103	7	3	REG	P-S1-2	N/A	07/08/96	18	1	2B-96-01110
	POOL CELL #1 ROTOMETER				P-S1-2	LOWERY,JL				
V0005-3	2C-00101	1	3	OSR	WFAS-S1-2	5-BC-009	07/08/96	18	2	2B-96-01110
	POOL CELL #1 LOW LEVEL ALARM S				WFAS-S1-2	LOWERY,JL				
V0005-5	2C-00098	1	3	OSR	WFT-S1-1	5-BC-010	07/08/96	18	2	2B-96-01110
	POOLCELL 1 WEIGHT FACTOR TRANS				WFT-S1-1	LOWERY,JL				
V0005-6	2C-00099	1	3	OSR	WFI-S1-1	5-BC-018	07/15/96	18	1	2B-96-01110
	POOL CELL 1_ WEIGHT FACTOR IND				WFI-S1-1	LOWERY,JL				
V0005-8	2C-00100	1	3	OSR	WFAS-S1-3	5-BC-015	07/08/96	18	2	2B-96-01110
	POOL CELL #1 PUMP SWITCH				WFAS-S1-3	LOWERY,JL				
V0017-1	2C-01658	7	4	PRCON	P-S2-1	N/A	07/08/96	18	1	2B-96-01110
	POOL CELL #2 ROTOMETER				P-S2-1	LOWERY,JL				

Select Fields Used: 1) Facility 2) Completion Date
Select Values Used: 1) 2C 2) 07/01/96 TO 07/30/96
Fixed Selection: Status Not Equal CANCELED

Loop/Seq PM/S	PM/S Num Title	Type	SC	Admin	Component Number Component Name	Procedure Number PM/S Authority	Complete Dt	Res	Act Hrs	Doc Number
17-2	2C-01657	7	4	PRCON	P-S2-2	N/A	07/08/96	18	1	2B-96-01110
POOL	CELL #2 ROTOMETER				P-S2-2	LOWERY,JL				
V0017-5	2C-00105	7	3	PRCON	WFT-S2-1	5-BC-010	07/08/96	18	2	2B-96-01110
POOL	CELL #2 WEIGHT FACTOR TRA				WFT-S2-1	LOWERY,JL				
V0017-6	2C-00106	7	3	PRCON	WFI-S2-1	5-BC-018	07/15/96	18	1	2B-96-01110
POOL	CELL #2 WEIGHT FACTOR IND				WFI-S2-1	LOWERY,JL				
V0035-1	2C-00119	7	3	REG	P-S3-1	N/A	07/08/96	18	1	2B-96-01110
POOL	CELL #3 ROTOMETER				P-S3-1	LOWERY,JL				
V0035-2	2C-00118	7	3	REG	P-S3-2	N/A	07/08/96	18	1	2B-96-01110
POOL	CELL #3 ROTOMETER				P-S3-2	LOWERY,JL				
V0035-3	2C-00117	1	3	OSR	WFAS-S3-2	5-BC-009	07/08/96	18	2	2B-96-01110
POOL	CELL #3 LOW LEVEL ALARM S				WFAS-S3-2	LOWERY,JL				
V0035-5	2C-00114	1	3	OSR	WFT-S3-1	5-BC-010	07/08/96	18	2	2B-96-01110
POOL	CELL #3 WEIGHT FACTOR TRA				WFT-S3-1	LOWERY,JL				
V0035-6	2C-00115	1	3	OSR	WFI-S3-1	5-BC-018	07/15/96	18	1	2B-96-01110
POOL	CELL #3 WEIGHT FACTOR IND				WFI-S3-1	LOWERY,JL				
V0035-8	2C-00116	1	3	OSR	WFAS-S3-3	5-BC-015	07/08/96	18	2	2B-96-01110
POOL	CELL #3 PUMP SWITCH				WFAS-S3-3	LOWERY,JL				
53-1	2C-00133	7	3	REG	P-S4-1	N/A	07/08/96	18	1	2B-96-01110
POOL	CELL #4 ROTOMETER				P-S4-1	LOWERY,JL				
V0053-2	2C-00132	7	3	REG	P-S4-2	N/A	07/08/96	18	1	2B-96-01110
POOL	CELL #4 ROTOMETER				P-S4-2	LOWERY,JL				
V0053-3	2C-00131	1	3	OSR	WFAS-S4-2	5-BC-009	07/08/96	18	1	2B-96-01110
POOL	CELL #4 LOW LEVEL ALARM S				WFAS-S4-2	LOWERY,JL				
V0053-5	2C-00128	1	3	OSR	WFT-S4-1	PSCP-6-172	07/08/96	18	2	2B-96-01110
POOL	CELL #4 WEIGHT FACTOR TRA				WFT-S4-1	LOWERY,JL				
V0053-6	2C-00129	1	3	OSR	WFI-S4-1	5-BC-018	07/15/96	18	1	2B-96-01110
POOL	CELL #4 WEIGHT FACTOR IND				WFI-S4-1	LOWERY,JL				
V0053-8	2C-00130	1	3	OSR	WFAS-S4-3	5-BC-015	07/08/96	18	2	2B-96-01110
POOL	CELL #4 PUMP SWITCH				WFAS-S4-3	LOWERY,JL				
V0079-1	2C-00146	7	3	REG	P-S5-1	N/A	07/08/96	18	1	2B-96-01110
POOL	CELL #5 ROTOMETER				P-S5-1	LOWERY,JL				
V0079-2	2C-00147	7	3	REG	P-S5-2	N/A	07/08/96	18	1	2B-96-01110
POOL	CELL #5 ROTOMETER				P-S5-2	LOWERY,JL				

Select Fields Used: 1) Facility 2) Completion Date
Select Values Used: 1) 2C 2) 07/01/96 TO 07/30/96
Fixed Selection: Status Not Equal CANCELED

Loop/Seq	PM/S Num	Type	SC	Admin	Component Number	Procedure Number	Complete Dt	Res	Act Hrs	Doc Number
PM/S Title					Component Name	PM/S Authority				
V0079-3	2C-00144	1	3	OSR	WFAS-S5-2	5-BC-009	07/08/96	18	2	2B-96-01110
POOL CELL #5 LOW LEVEL ALARM S					WFAS-S5-2	LOWERY,JL				
V0079-5	2C-00142	1	3	OSR	WFT-S5-1	PSCP-6-172	07/08/96	18	2	2B-96-01110
POOL CELL #5 WEIGHT FACTOR TRA					WFT-S5-1	LOWERY,JL				
V0079-6	2C-00143	1	3	OSR	WFI-S5-1	5-BC-018	07/15/96	18	1	2B-96-01110
POOL CELL #5 WEIGHT FACTOR IND					WFI-S5-1	LOWERY,JL				
V0079-8	2C-00145	1	3	OSR	WFAS-S5-3	5-BC-015	07/08/96	18	2	2B-96-01110
POOL CELL #5 PUMP SWITCH					WFAS-S5-3	LOWERY,JL				
V0099-1	2C-00160	7	3	REG	P-S6-1	N/A	07/09/96	18	1	2B-96-01110
POOL CELL #6 ROTOMETER					P-S6-1	LOWERY,JL				
V0099-2	2C-00159	7	3	REG	P-S6-2	N/A	07/09/96	18	2	2B-96-01110
POOL CELL #6 ROTOMETER					P-S6-2	LOWERY,JL				
V0099-3	2C-00157	1	3	OSR	WFAS-S6-2	5-BC-009	07/09/96	18	2	2B-96-01110
POOL CELL #6 LOW LEVEL ALARM					WFAS-S6-2	LOWERY,JL				
V0099-5	2C-00155	1	3	OSR	WFT-S6-1	PSCP-6-172	07/09/96	18	2	2B-96-01110
POOL CELL #6 WEIGHT FACTOR TRA					WFT-S6-1	LOWERY,JL				
V0099-6	2C-00156	1	3	OSR	WFI-S6-1	5-BC-018	07/15/96	18	1	2B-96-01110
POOL CELL #6 WEIGHT FACTOR IND					WFI-S6-1	LOWERY,JL				
/9-8	2C-00158	1	3	OSR	WFAS-S6-3	5-BC-015	07/09/96	18	2	2B-96-01110
POOL CELL #6 PUMP SWITCH					WFAS-S6-3	LOWERY,JL				
V0125-1	2C-00174	7	3	REG	P-S7-1	N/A	07/10/96	18	1	2B-96-01110
POOL CELL #7 ROTOMETER					P-S7-1	LOWERY,JL				
V0125-2	2C-00173	7	3	REG	P-S7-2	N/A	07/10/96	18	1	2B-96-01110
POOL CELL #7 ROTOMETER					P-S7-2	LOWERY,JL				
V0125-3	2C-00172	1	3	OSR	WFAS-S7-2	5-BC-009	07/10/96	18	2	2B-96-01110
POOL CELL #7 LOW LEVEL ALARM S					WFAS-S7-2	LOWERY,JL				
V0125-5	2C-00170	1	3	OSR	WFT-S7-1	PSCP-6-172	07/10/96	18	2	2B-96-01110
POOL CELL #7 WEIGHT FACTOR TRA					WFT-S7-1	LOWERY,JL				
V0125-6	2C-00169	1	3	OSR	WFI-S7-1	5-BC-018	07/15/96	18	1	2B-96-01110
POOL CELL #7 WEIGHT FACTOR IND					WFI-S7-1	LOWERY,JL				
V0125-8	2C-00171	1	3	OSR	WFAS-S7-3	5-BC-015	07/10/96	18	2	2B-96-01110
POOL CELL #7 PUMP SWITCH					WFAS-S7-3	LOWERY,JL				
V0142-1	2C-01752	7	4	PRCON	P-S8-1	N/A	07/17/96	18	1	2B-96-01110

Select Fields Used: 1) Facility 2) Completion Date
Select Values Used: 1) 2C 2) 07/01/96 TO 07/30/96
Fixed Selection: Status Not Equal CANCELED

Loop/Seq	PM/S Num	Type	SC	Admin	Component Number	Procedure Number	Complete Dt	Res	Act Hrs	Doc Number
	PM/S Title				Component Name	PM/S Authority				
	POOL CELL #8 ROTOMETER				P-S8-1	LOWERY,JL				
V0142-2	2C-01753	7	4	PRCON	P-S8-2	N/A	07/17/96	18	1	2B-96-01110
	POOL CELL #8 ROTOMETER				P-S8-2	LOWERY,JL				
V0142-3	2C-00200	7	3	PRCON	WFAS-S8-2	5-BC-009	07/16/96	18	1	2B-96-01110
	POOL CELL #8 LOW LEVEL ALARM S				WFAS-S8-2	LOWERY,JL				
V0142-5	2C-00199	7	3	PRCON	WFT-S8-1	5-BC-029	07/16/96	18	1	2B-96-01110
	POOL CELL #8 WEIGHT FACTOR TRA				WFT-S8-1	LOWERY,JL				
V0142-6	2C-00198	7	3	PRCON	WFI-S8-1	5-BC-018	07/15/96	18	1	2B-96-01110
	POOL CELL #8 WEIGHT FACTOR IND				WFI-S8-1	LOWERY,JL				
V0159-1	2C-01757	7	4	PRCON	P-S9-1	N/A	07/16/96	18	1	2B-96-01110
	POOL CELL #9 ROTOMETER				P-S9-1	LOWERY,JL				
V0159-2	2C-01758	7	4	PRCON	P-S9-2	N/A	07/16/96	18	1	2B-96-01110
	POOL CELL #9 ROTOMETER				P-S9-2	LOWERY,JL				
V0159-5	2C-00213	7	4	PRCON	WFT-S9-1	5-BC-029	07/16/96	18	1	2B-96-01110
	POOL CELL #9 WEIGHT FACTOR TRA				WFT-S9-1	LOWERY,JL				
V0159-6	2C-00214	7	4	PRCON	WFI-S9-1	5-BC-018	07/15/96	18	1	2B-96-01110
	POOL CELL #9 WEIGHT FACTOR IND				WFI-S9-1	LOWERY,JL				
V0171-1	2C-01760	7	4	PRCON	P-S10-1	N/A	07/10/96	18	1	2B-96-01110
	POOL CELL #10 ROTOMETER				P-S10-1	LOWERY,JL				
V0171-2	2C-01761	7	4	PRCON	P-S10-2	N/A	07/11/96	18	1	2B-96-01110
	POOL CELL #10 ROTOMETER				P-S10-2	LOWERY,JL				
V0171-5	2C-00222	7	4	PRCON	WFT-S10-1	PSCP-6-172	07/10/96	18	2	2B-96-01110
	POOL CELL #10 WEIGHT FACTOR TR				WFT-S10-1	LOWERY,JL				
V0171-6	2C-00221	7	4	PRCON	WFI-S10-1	5-BC-018	07/16/96	18	2	2B-96-01110
	POOL CELL #10 WEIGHT FACTOR IN				WFI-S10-1	LOWERY,JL				
V0197-1	2C-01768	7	4	PRCON	P-S11-1	N/A	07/16/96	18	1	2B-96-01110
	POOL CELL #11 ROTOMETER				P-S11-1	LOWERY,JL				
V0197-2	2C-01769	7	4	PRCON	P-S11-2	N/A	07/16/96	18	1	2B-96-01110
	POOL CELL #11 ROTOMETER				P-S11-2	LOWERY,JL				
V0197-5	2C-00232	7	4	PRCON	WFT-S11-1	5-BC-029	07/16/96	18	1	2B-96-01110
	POOL CELL #11 WEIGHT FACTOR TR				WFT-S11-1	LOWERY,JL				
V0197-6	2C-00233	7	4	PRCON	WFI-S11-1	5-BC-018	07/16/96	18	1	2B-96-01110
	POOL CELL #11 WEIGHT FACTOR IN				WFI-S11-1	LOWERY,JL				

Select Fields Used: 1) Facility 2) Completion Date
Select Values Used: 1) 2C 2) 07/01/96 TO 07/30/96
Fixed Selection: Status Not Equal CANCELED

Loop/Seq	PM/S Num	Type	SC	Admin	Component Number / Component Name	Procedure Number / PM/S Authority	Complete Dt	Res	Act Hrs	Doc Number
	PM/S Title									
22-3	2C-00259	1	3	OSR	CRM-S12-1	N/A	07/23/96	18	4	2B-96-01115
	FUNCTEST RAD MONITITOR PC 12				COUNT RATE METER	LOWERY,JL				
V0229-1	2C-00283	1	2	OSR	P-S12-1	N/A	07/11/96	18	2	2B-96-01110
	POOL CELL #12 ROTOMETER				P-S12-1	LOWERY,JL				
V0229-2	2C-00282	1	2	OSR	P-S12-2	N/A	07/11/96	18	1	2B-96-01110
	POOL CELL #12 ROTOMETER				P-S12--2	LOWERY,JL				
V0229-3	2C-00280	1	2	OSR	WFAS-S12-2	5-BC-009	07/10/96	18	1	2B-96-01110
	POOL CELL #12 LOW LEVEL ALARM				WFAS-S12-2	LOWERY,JL				
V0229-5	2C-00278	1	2	OSR	WFT-S12-1	PSCP-6-172	07/11/96	18	4	2B-96-01110
	POOL CELL #12 WEIGHT FACTOR TR				WFT-S12-1	LOWERY,JL				
V0229-6	2C-00279	1	2	OSR	WFI-S12-1	5-BC-018	07/15/96	18	1	2B-96-01110
	POOL CELL #12 WEIGHT FACTOR IN				WFI-S12-1	LOWERY,JL				
V0229-8	2C-00281	1	2	OSR	WFAS-S12-3	5-BC-015	07/16/96	18	1	2B-96-01110
	POOL CELL #12 PUMP SWITCH				WFAS-S12-3	LOWERY,JL				
V0237-M	2C-00295	1	2	OSR	STATUS-PANEL	5-BC-037	07/19/96	18	6	2B-96-01115
	BETA MONITOR STATUS PANEL				STATUS-PANEL	LOWERY,JL				
V0323-0	2C-00323	7	3	OSR	RAMP/-CRM-K1-4	N/A	07/19/96	18	1	2B-96-01115
	K1 EXHAUST FILTER RA				RAMP/-CRM-K1-4	LOWERY,JL				
V0324-4	2C-00329	7	3	OSR	RAMP-CRM-K1-5	N/A	07/19/96	18	1	2B-96-01115
	K1 EXHAUST FILTER RA				RAMP-CRM-K1-5	LOWERY,JL				
V0360-M	2C-00336	1	4	OSR	DET-296B-10-2	5-BM-054	07/22/96	18	1	2B-96-01115
	CONTINUOUS AIR MONITOR/BETA-ST				DET-296B-10-2	LOWERY,JL				
V0390-1	2C-00367	7	3	OPER	PS-K2-1-1	5-BC-009	07/26/96	18	2	2B-96-01114
	PRESSURE SWITCH - K2 EXHAUST				PS-K2-1-1	LOWERY,JL				
V0391-1	2C-00368	7	3	OPER	PS-K2-1-3	5-BC-009	07/26/96	18	2	2B-96-01114
	K2 EXHAUST				PS-K2-1-3	LOWERY,JL				
V0417-1	2C-00394	1	1	OSR	PS-K1-1-1	5-BC-009	07/26/96	18	2	2B-96-01114
	K1 HI EXH DUCT PRESSURE				PS-K1-1-1	LOWERY,JL				
V0432-1	2C-00409	7	3	OPER	PS-K4-1-1	5-BC-009	07/26/96	18	2	2B-96-01114
	POOL CELL PRESSURE SWITCH				PS-K4-1-1	LOWERY,JL				
V0440-1	2C-00414	7	3	REG	PS-K1-1-2	5-BC-009	07/26/96	18	2	2B-96-01114
	K1 LO EXH DUCT PRESSURE				PS-K1-1-2	LOWERY,JL				
V0461-1	2C-00453	7	3	OPER	PS-K3-1-1	5-BC-009	07/26/96	18	2	2B-96-01114
	K3 PRESSURE SWITCH HI CANYON T				PS-K3-1-1	LOWERY,JL				

Select Fields Used: 1) Facility 2) Completion Date
Select Values Used: 1) 2C 2) 07/01/96 TO 07/30/96
Fixed Selection: Status Not Equal CANCELED

Loop/Seq	PM/S Num	Type	SC	Admin	Component Number	Procedure Number	Complete Dt	Res	Act Hrs	Doc Number
PM/S Title					Component Name	PM/S Authority				
V0461-3	2C-00455	7	1	OPER	PS-K3-1-2	5-BC-009	07/26/96	18	2	2B-96-01114
K3 PRESSURE SWITCH HI EXH DUCT					PS-K3-1-2	LOWERY,JL				
V0461-5	2C-00454	7	3	REG	PS-K3-1-3	5-BC-009	07/26/96	18	2	2B-96-01114
K3 PRESSURE SWITCH LOW EXH DUC					PS-K3-1-3	LOWERY,JL				
V0651-1	2C-00547	7	3	OPER	PS-K3-1-4	5-BC-009	07/26/96	18	2	2B-96-01114
EMERGENCY JET					PS-K3-1-4	LOWERY,JL				
V0652-1	2C-00548	7		FSFT	DPI-K3-5	5-BC-002	07/26/96	18	2	2B-96-01114
EMERGENCY STEAM JET					DPI-K3-5	LOWERY,JL				
V0653-1	2C-00549	1	2	OSR	FM-K-4	5-BC-015	07/27/96	18	1	2B-96-01115
POOL CELL UNDER COVER BLOCK AI					FLOWMETER	LOWERY,JL				
V0655-3	2C-00556	1	2	OSR	RIT/RE-225BD-2E	05-BM-053	07/19/96	18	1	2B-96-01115
RADIATION INDICATING TRANSMITT					RIT/RE-225BD-2E	LOWERY,JL				
V0664-3	2C-00585	1	2	OSR	RIT/RE-225BD-1E	05-BM-053	07/19/96	18	1	2B-96-01115
RADIATION INDICATING TRANSMITT					RIT/-RE-225B-1E	LOWERY,JL				
V0669-3	2C-00603	1	2	OSR	RIT/RE-225BD-2W	05-BM-053	07/19/96	18	1	2B-96-01115
RADIATION INDICATING TRANSMITT					RIT/RE-225BD-2W	LOWERY,JL				
V0677-3	2C-00632	1	2	OSR	RIT/RE-225BD-1W	05-BM-053	07/19/96	18	1	2B-96-01115
RADIATION INDICATING TRANSMITT					RIT/RE-225BD-1W	LOWERY,JL				
75-3	2C-00777	7		FSFT	WFAS-100-1	5-BC-009	07/17/96	18	1	2B-96-01110
TK 100 WEIGHT FACTOR					WFAS-100-1	LOWERY,JL				
V1075-5	2C-00778	7	3	REG	WFAS-100-2	5-BC-009	07/17/96	18	1	2B-96-01110
TK 100 WEIGHT FACTOR					WFAS-100-2	LOWERY,JL				
V1075-6	2C-00779	7		FSFT	WFAS-100-3	5-BC-009	07/17/96	18	1	2B-96-01110
TK 100 LOW LEVEL PUMP CUT-OFF					WFAS-100-3	LOWERY,JL				

Total Number of Records Reported: 94

Select Fields Used: 1) Facility 2) Completion Date
Select Values Used: 1) 2C 2) 07/01/96 TO 07/30/96
Fixed Selection: Status Not Equal CANCELED

PAGE 1 10:16:48 31 JUL 1996

PM/S..... PM/S..... PM/S... PM/S D/S.. PM/S Current PM/S Cycle

Num. Title Comp. Status WP Numbers Due Dates

Admin.

Zero Records Processed

WESF PREPAREDNESS FOR ARECO
CESIUM CAPSULE RETURN AFFIDAVIT

Type:

__✓__ Preliminary

_____ Final

Checklist Item:

4.2.6.1 - July 15, 1996

Acceptance Criteria:

WESF housekeeping for areas affected by capsule return has been reviewed and found acceptable.

Discussion:

•	G-Cell	Hoist - ok/inspection light - ok
		Blank SVHS tapes
	Pool Cell	Underwater lights ok
		4 pc tongs - ok
		Overhead lights - ok
		Temperature in pc area is warm - 80°
	Canyon	Laundry & waste - ok

Supporting Documentation:

•

Outstanding Items/Limitations:

•	G-Cell	Floor needs decontamination
		Needs new heat blanket
		Housekeep
		Need to test video camera & monitor
		Smear pass through
	Pool Cell	Need to sweep & mop in PC area
	Canyon	New sisal craft paper for cask
	Truck Port	Move waste cask smear floor
		Test rollup & bifold doors
		Test cameras & crane

Completion: G. L. Garman/D. O. Dobson Date: 7/11/96

Concurrence: P. T. Saueressig Date: 7/12/96

WESF PREPAREDNESS FOR ARECO CESIUM CAPSULE RETURN AFFIDAVIT

Type:

_____Preliminary

__X__Final

Checklist Item:

4.2.6.2 - July 19, 1996

Acceptance Criteria:

Project W-252 schedule, work scope and anticipated facility configuration (i.e, interim cooling, cleaning heat exchangers) has been reviewed to assure no impacts and/or interferences to capsule return activities.

Discussion:

The project W-252 plant start up schedule has been developed to minimize activities that could potentially impact ARECO capsule return. Project management has been advised that all ARECO capsule return activities will receive priority over project activities.

WESF engineering has reviewed the project work scope for any possible activities that would impact ARECO capsule return. The activity that could have affected ARECO capsule return, installation of underground piping, has been completed to the extent that there will be no impact to ARECO capsule return. All remaining modifications to the pool cell area will be scheduled and completed without impacting the ARECO capsule returns scheduled in September 1996.

The project activities scheduled for completion during the ARECO capsule return are installation/testing of the Interim cooling system and cleaning of the existing pool cell heat exchangers. The Interim Cooling System, which is scheduled for installation in August 1996 and testing in September 1996, is designed to allow capsule movement. Therefore the installation or operation of the Interim cooling system will not affect ARECO capsule return. Cleaning of the pool cell heat exchangers is scheduled for September 1996. Only one heat exchanger will be cleaned at a time. This will allow Facility Operations to return to normal cooling in the event of a problem during testing of the interim cooling system which is scheduled for the same time frame. Since cleaning the heat exchangers will not preclude cooling with the existing cooling system, this activity will not impact ARECO capsule return.

Supporting Documentation:

W-252 PLANT START UP SCHEDULE
ARECO CAPSULE RETURN SCHEDULE

Checklist Item:

4.2.6.2 - July 19, 1996 (continued)

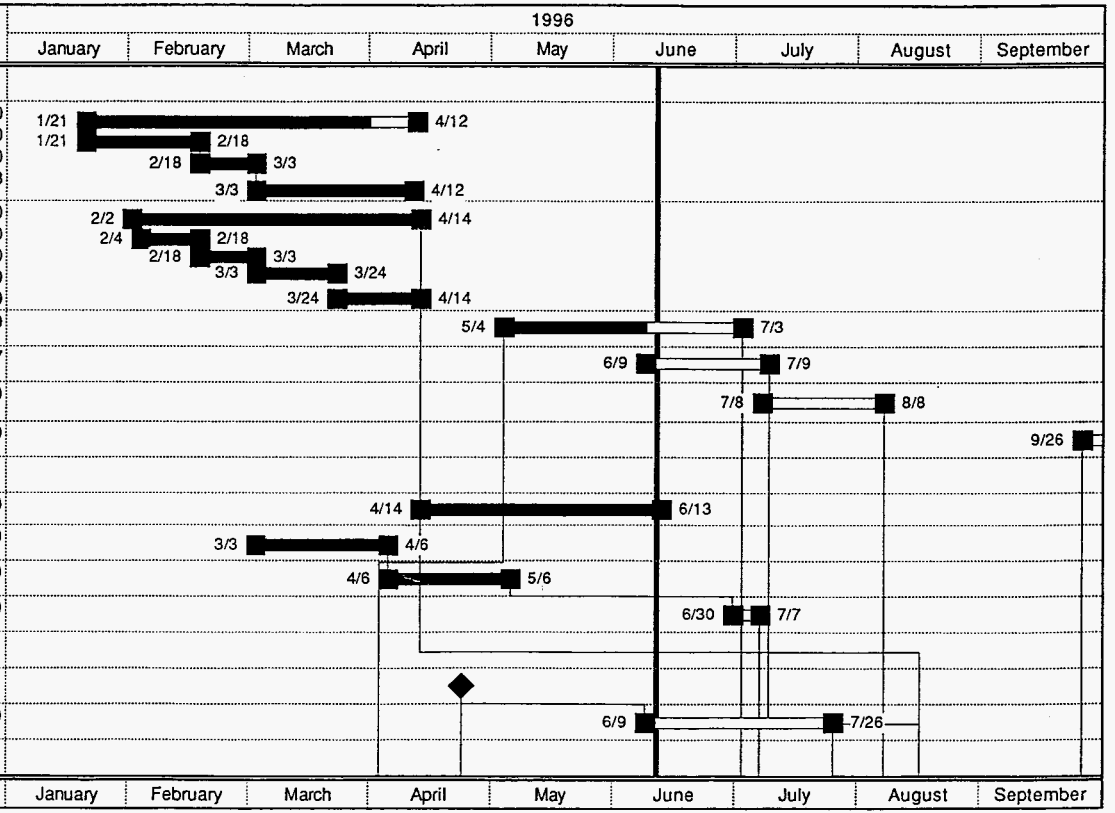
Outstanding Items/Limitations:

None

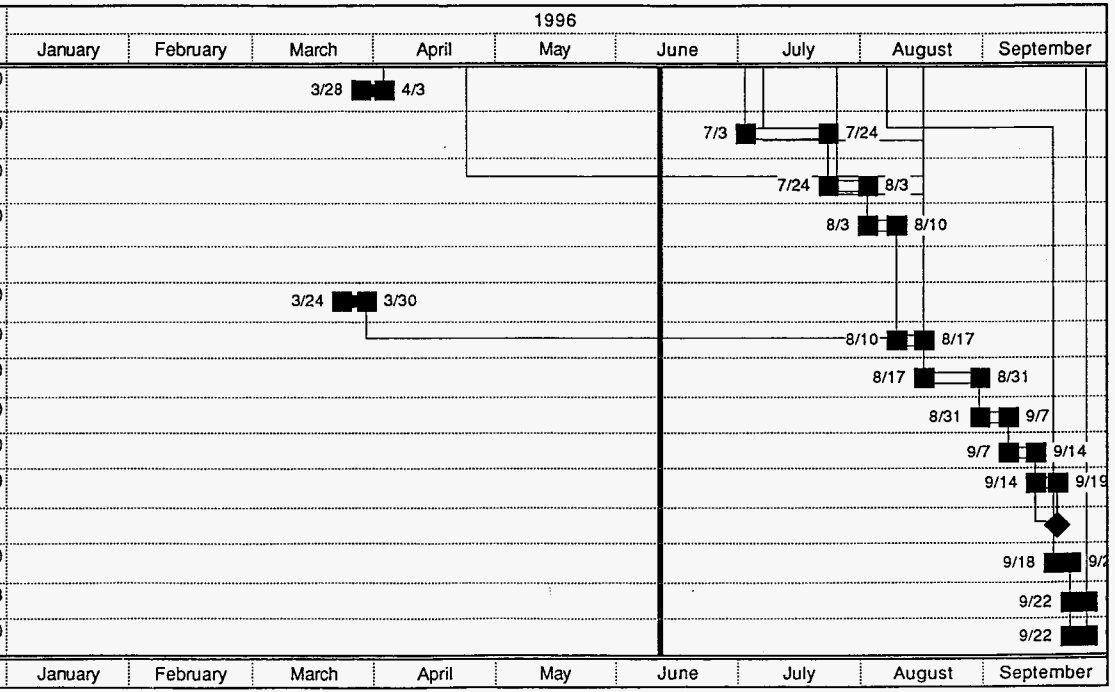
Completion: W R Shannon
W. R. Shannon Date: 7/12/96

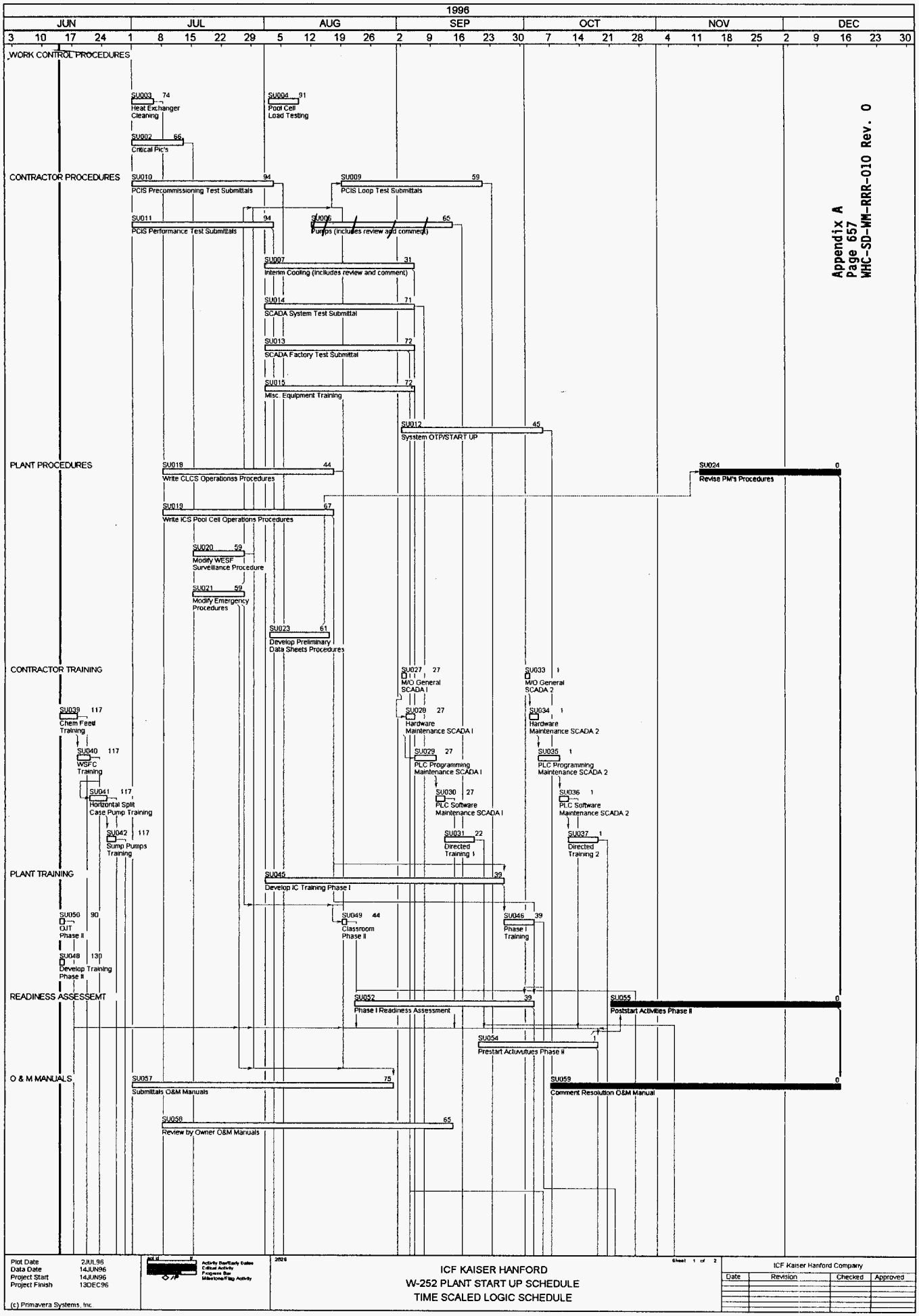
Concurrence: Paul T Saueressig
P. T. Saueressig Date: 7/15/96

Activity Name	Start Date	Finish Date	Duration
Program Documenation			
ARECO Implementation Plan	1/21/96	2/18/96	28.00
- WHC Prepare	2/18/96	3/3/96	14.00
-ARECO Review	3/3/96	4/12/96	40.00
- Comment Resolution/Issue	1/21/96	4/12/96	82.83
Transportation Plan	2/2/96	4/14/96	72.00
-WHC Draft	2/4/96	2/18/96	14.00
-States Update Information	2/18/96	3/3/96	14.00
-General Comment Period	3/3/96	3/24/96	21.00
- Comment Resolution/Issue	3/24/96	4/14/96	21.00
Facility Preparation Plan	5/4/96	7/3/96	60.00
WESF Preparedness Review	6/9/96	7/9/96	30.67
Project Closeout Plan	7/8/96	8/8/96	31.00
Project Record Archive	9/26/96	10/27/96	31.00
Procedure Preparations			
Cask Loading Procedures	4/14/96	6/13/96	60.00
Site Safety and Health Plan	3/3/96	4/6/96	34.00
Radiation Control Plan	4/6/96	5/6/96	30.00
RWP Issuance	6/30/96	7/7/96	7.00
Licensing			
Is work in scope of license ?	4/23/96		
Submit/Receive License	6/9/96	7/26/96	47.00
Facility Preparations			



Activity Name	Start Date	Finish Date	Duration
WHC-Scope Facility Modificaitions	3/28/96	4/3/96	6.00
Work Plan Preparations/Approval	7/3/96	7/24/96	21.00
Complete Preliminary Modifications	7/24/96	8/3/96	10.00
Complete Final Modifications (Operations Shutdown)	8/3/96	8/10/96	7.00
Cask Operations			
Special Form Inspections	3/24/96	3/30/96	6.00
Dry Run	8/10/96	8/17/96	7.00
Load /Transport 1st	8/17/96	8/31/96	14.00
Unload 1st/Transport	8/31/96	9/7/96	7.00
Load 2nd	9/7/96	9/14/96	7.00
Transport 2nd	9/14/96	9/19/96	5.00
Shipment Arrives at Hanford	9/19/96		
Re-install vital equipment	9/18/96	9/22/96	4.00
Exit Survey	9/22/96	9/26/96	4.33
Ship WHC Equipment	9/22/96	9/26/96	4.00





Appendix A
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WHC-SD-WM-RRR-010 Rev. 0

Plot Date	2JUL96
Data Date	14JUN96
Project Start	14JUN96
Project Finish	13DEC96

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

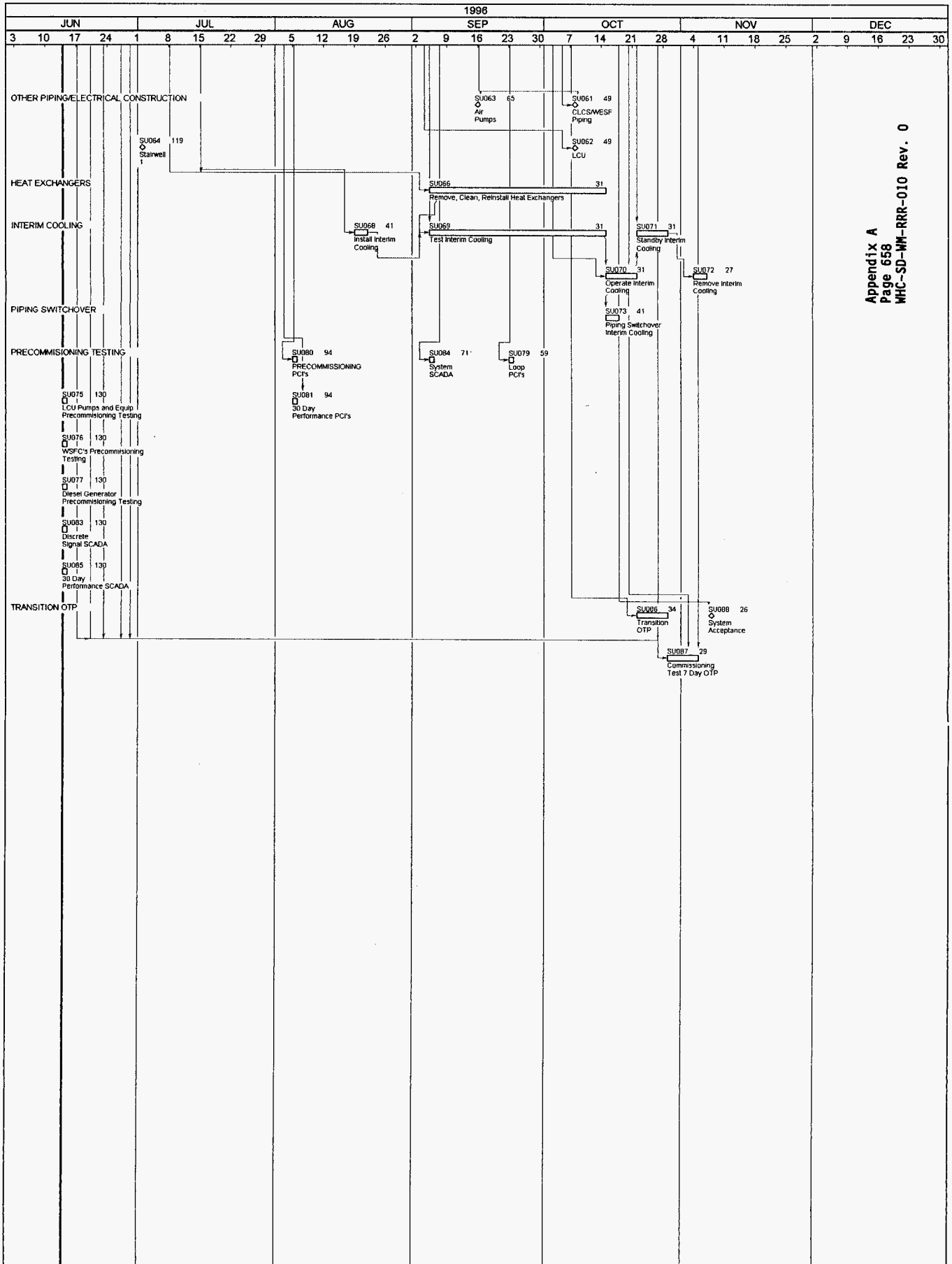
(c) Primavera Systems, Inc.

ICF KAISER HANFORD
W-252 PLANT START UP SCHEDULE
TIME SCALED LOGIC SCHEDULE

Sheet 1 of 2

ICF Kaiser Hanford Company

Date	Revision	Checked	Approved



Plot Date	2JUL96	Activity Bar/Early Dates	
Data Date	14JUN96	Critical Activity	
Project Start	14JUN96	Progress Bar	
Project Finish	13DEC96	Milestone/Flag Activity	

(c) Primavera Systems, Inc

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Sheet 2 of 2

ICF KAISER HANFORD
W-252 PLANT START UP SCHEDULE
TIME SCALED LOGIC SCHEDULE

ICF Kaiser Hanford Company

Date	Revision	Checked	Approved