DISTRIBUTION SHEET

To Distribution	From S. H. Norton	Page 1 of 1 Date 11/22/94			
Project Title/Work Order Readiness Assessment Plan For The Radioactive Mixed Waste Land Disposal Facility (Trench 31). WHC-SD-W025-PLN-002, Rev. 0		EDT No. 607531 ECN No. N/A			
Name	MSI N	Text With All Attac h.	Text Only	Attach. / Append ix Only	EDT/E CN Only
Central Files	L8-04	X			
O.S.T.I. (2)	L8-07	X			
M. D. Aichele	T4-05	X			
D. W. Carlyle	T4-03	X			
D. D. Carson	S1-52	X			
A. K. Crowell	S7-55	X			
T. H. Davies	T3-28	X			
C. H. Eccleston	H6-26	X			
R. F. Guercia	S7-55	X			
W. H. Hamilton, Jr.	N3-10	X			
P. L. Hapke	T4-05	X			
L. G. Irons	T3-01	X			
R. L. Martin	T3-01	X			
T. Nishioka	T3-01	X			
S. H. Norton	T3-01	X			
J. E. Spets	T3-01	X			
G. A. Whitney	T4-03	X			
J. J. Wick	T3-01	X			

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Page 1 of 2

1. EDT 607531

2. To: (Receiving Organization) Distribution				3. From: (Originating Organization) SWD Operational Readiness				4. Related EDT No.: N/A			
5. Proj./Prog./Dept./Div.: SWD				6. Cog. Engr.: L. G. Irons				7. Purchase Order No.: N/A			
8. Originator Remarks: Release of Readiness Assessment Plan for the Radioactive Mixed Waste Land Disposal Facility (Trench 31)								9. Equip./Component No.: N/A			
								10. System/Bldg./Facility: N/A			
11. Receiver Remarks:								12. Major Assm. Dwg. No.: N/A			
								13. Permit/Permit Application No.: N/A			
								14. Required Response Date: 10/19/94			
15. DATA TRANSMITTED								(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted				Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-W025-PLN-002	64	0	Readiness Assessment Plan for the Radioactive Mixed Waste Land Disposal Facility (Trench 31)				E,S,Q, D	1	1	N/A
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			
(G)	(H)	17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)								(G)	(H)
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
1	1	Cog.Eng. L. G. Irons	<i>L. G. Irons</i>	10/12/94	T3-01	P. L. Hapke	<i>(see page 2)</i>		N3-13	1	
1	1	Cog. Mgr. S. H. Norton	<i>S. H. Norton</i>		T3-01	D. W. Carlyle	<i>(see page 2)</i>		T4-03	1	
1	1	Q M. S. Cochrane	<i>M. S. Cochrane</i>	10/27/94	T3-52	R. W. Reddinger	<i>(see page 2)</i>		T4-05	1	
1	1	S D. J. Hart	<i>S. D. J. Hart</i>	10/27/94	T3-54	R. J. Roberts			N3-13	3	X ¹²
1	1	E G. D. Carpenter	<i>E. G. D. Carpenter</i>	10/27/94	H6-21	W. H. Hamilton, Jr.	<i>W. H. Hamilton Jr</i>		N3-10	1	1
18.		19.				20.		21. DOE APPROVAL (if required)			
<i>L. G. Irons</i> Signature of EDT Date 11/21/94		N/A Authorized Representative Date for Receiving Organization				<i>S. H. Norton</i> Cognizant Manager Date 11/22/94		Ctrl. No. 94-SWT-726 [] Approved [X] Approved w/comments [] Disapproved w/comments			

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BD-7400-172-1 (07/91)

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BLOCK	TITLE	
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(2)	To: (Receiving Organization)	<ul style="list-style-type: none"> ● Enter the individual's name, title of the organization, or entity (e.g., Distribution) that the EDT is being transmitted to.
(3)	From: (Originating Organization)	<ul style="list-style-type: none"> ● Enter the title of the organization originating and transmitting the EDT.
(4)	Related EDT No.	<ul style="list-style-type: none"> ● Enter EDT numbers which relate to the data being transmitted.
(5)*	Proj./Prog./Dept./Div.	<ul style="list-style-type: none"> ● Enter the Project/Program/Department/Division title or Project/Program acronym or Project Number, Work Order Number or Organization Code.
(6)*	Cognizant Engineer	<ul style="list-style-type: none"> ● Enter the name of the individual identified as being responsible for coordinating disposition of the EDT.
(7)	Purchase Order No.	<ul style="list-style-type: none"> ● Enter related Purchase Order (P.O.) Number, if available.
(8)*	Originator Remarks	<ul style="list-style-type: none"> ● Enter special or additional comments concerning transmittal, or "Key" retrieval words may be entered.
(9)	Equipment/Component No.	<ul style="list-style-type: none"> ● Enter equipment/component number of affected item, if appropriate.
(10)	System/Bldg./Facility	<ul style="list-style-type: none"> ● Enter appropriate system, building or facility number, if appropriate.
(11)	Receiver Remarks	<ul style="list-style-type: none"> ● Enter special or additional comments concerning transmittal.
(12)	Major Assm. Dwg. No.	<ul style="list-style-type: none"> ● Enter applicable drawing number of major assembly, if appropriate.
(13)	Permit/Permit Application No.	<ul style="list-style-type: none"> ● Enter applicable permit or permit application number, if appropriate.
(14)	Required Response Date	<ul style="list-style-type: none"> ● Enter the date a response is required from individuals identified in Block 17 (Signature/Distribution).
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	(C)* Sheet No.	<ul style="list-style-type: none"> ● Enter the sheet number of the information being transmitted. If no sheet number, leave blank.
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	(G) Reason for Transmittal	<ul style="list-style-type: none"> ● Enter the appropriate code to identify the purpose of the data transmittal (see Block 16).
	(H) Originator Disposition	<ul style="list-style-type: none"> ● Enter the appropriate disposition code (see Block 16).
	(I) Receiver Disposition	<ul style="list-style-type: none"> ● Enter the appropriate disposition code (see Block 16).
(16)	Key	<ul style="list-style-type: none"> ● Number codes used in completion of Blocks 15 (G), (H), and (I), and 17 (G), (H) (Signature/Distribution).
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	(G) Reason	<ul style="list-style-type: none"> ● Enter the code of the reason for transmittal (Block 16).
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	(J) Name	<ul style="list-style-type: none"> ● Enter the signature of the individual completing the Disposition 17 (H) and the Transmittal.
	(K)* Signature	<ul style="list-style-type: none"> ● Obtain appropriate signature(s).
	(L)* Date	<ul style="list-style-type: none"> ● Enter date signature is obtained.
	(M)* MSIN	<ul style="list-style-type: none"> ● Enter MSIN. Note: If Distribution Sheet is used, show entire distribution (including that indicated on Page 1 of the EDT) on the Distribution Sheet.
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(20)*	Cognizant Manager	<ul style="list-style-type: none"> ● Enter the signature and date of the cognizant manager. (This signature is authorization for release.)
(21)*	DOE Approval	<ul style="list-style-type: none"> ● Enter DOE approval (if required) by letter number and indicate DOE action.

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Page 2 of 2
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		10. System/Bldg./Facility: N/A
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 10/19/94

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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

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1		S D. J. Hart			R3-54	R. J. Roberts			N3-13	3 1/2	
1		E G. D. Carpenter			H6-21	W. H. Hamilton, Jr.			N3-10	1	

18. Signature of EDT Originator _____ Date _____	19. N/A Authorized Representative Date for Receiving Organization _____	20. Cognizant Manager _____ Date _____	21. DOE APPROVAL (if required) Ctrl. No. _____ [] Approved [] Approved w/comments [] Disapproved w/comments
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RELEASE AUTHORIZATION

Document Number: WHC-SD-W025-PLN-002, REV 0

Document Title: Readiness Assessment Plan for the Radioactive Mixed Waste Land Disposal Facility (Trench 31)

Release Date: 11/28/94

**This document was reviewed following the
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APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

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November 28, 1994

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SUPPORTING DOCUMENT

1. Total Pages 64

2. Title

Readiness Assessment Plan for the Radioactive Mixed Waste Land Disposal Facility (Trench 31)

3. Number

WHC-SD-W025-PLN-002

4. Rev No.

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5. Key Words

W-025; Radioactive Mixed Waste, Trench 31, Readiness Assessment Plan, Readiness Assessment, RA, RAP

6. Author

Name: Lee G. Irons

Signature

Organization/Charge Code 87700/A7K66

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PUBLIC RELEASE**

LMB 11/28/94

7. Abstract

This document provides the Readiness Assessment Plan (RAP) for the Project W-025 (Radioactive Mixed Waste Land Disposal Facility) Readiness Assessment (RA). The RAP documents prerequisites to be met by the operating organization prior to the RA. The RAP is to be implemented by the RA Team identified in the RAP. The RA Team is to verify the facility's compliance with criteria identified in the RAP. The criteria are based upon the "Core Requirements" listed in DOE Order 5480.31, "Startup and Restart of Nuclear Facilities."

8.

RELEASE STAMP

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BY WHC

DATE NOV 28 1994

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READINESS ASSESSMENT PLAN
FOR THE
RADIOACTIVE MIXED WASTE
LAND DISPOSAL FACILITY
(TRENCH 31)

Prepared by the Westinghouse Hanford Company

for the

United States Department of Energy

Under Contract DE-AC06-87RL10930

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ACRONYMS AND ABBREVIATIONS

ALARA	as low as reasonably achievable
ATP	acceptance test procedure
CAP	corrective action plan
CFR	Code of Federal Regulations
CRAs	criteria and review approaches
CWC	Central Waste Complex
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
ECN	engineering change notice
Ecology	State of Washington Department of Ecology
ETF	200 Area Effluent Treatment Facility
HDPE	high-density polyethylene
LCO	limiting condition of operation
LERF	Liquid Effluent Retention Facility
LLMW	low-level radioactive mixed waste
NEPA	National Environmental Policy Act
OSHA	Occupational Safety and Health Administration
OSR	operational safety requirement
OTP	operational test procedure
PM	preventative maintenance
QUEST	Quality, Environmental, Safety Tracking System
RA	readiness assessment
RCRA	Resource Conservation and Recovery Act
SARP	safety analysis report for packaging
S/RID	standards/requirements identification document
SWBG	Solid Waste Burial Grounds
SWD	Solid Waste Disposal
SWM	Solid Waste Management
TQ	threshold quantity
TSD	treatment/storage/disposal
TSR	technical safety requirement
USQ	unreviewed safety question
WAC	Washington State Administrative Code
WAE	WHC Waste, Analytical, and Environmental Services
WHC	Westinghouse Hanford Company
WPD	DOE Waste Programs Division
WRTS	Waste Remediation Tracking System

REFERENCES

- 1) DOE Order 5480.21, *Unreviewed Safety Questions*
- 2) DOE Order 5480.22, *Technical Safety Requirements*
- 3) DOE Order 5480.23, *Nuclear Safety Analysis Reports*
- 4) DOE Order 5480.31, *Start-up and Restart of Nuclear Facilities*
- 5) DOE Order 5481.1B, *Safety Analysis and Review System*
- 6) DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*
- 7) DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*
- 8) DOE-STD-3006-93, *Planning and Conducting Operational Readiness Reviews*
- 9) WHC-CM-1-3, *Management Requirements and Procedures*
- 10) WHC-CM-1-4, *Corrective Action Management Manual*
- 11) WHC-CM-3-5, *Document Control and Records Management Manual*
- 12) WHC-CM-5-34, *Solid Waste Disposal Operations Administration*
- 13) WHC-EP-0063-4, *Hanford Site Solid Waste Acceptance Criteria*
- 14) WHC-SD-WM-ISB-002, *Solid Waste Burial Grounds Interim Safety Basis*
- 15) WHC-SD-W025-PSAR-001, *Mixed Waste Lined Landfill (Project W-025) Preliminary Safety Analysis Report*

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1.0 INTRODUCTION

1.1 Facility Description

Project W-025 involves a modification to the existing Burial Grounds facility, specifically, the construction of a Radioactive Mixed Waste Disposal Facility, which is designated Trench 31 of the Solid Waste Burial Grounds (SWBG) 218-W-5. Trench 31 (hereafter known as "the facility") will contain waste designated as low-level radioactive mixed waste (LLMW) produced either at the Hanford Site or by offsite generators. The facility will accept containerized and bulk LLMW. Facility operations will require the use of trucks, forklifts, cranes, bulldozers, etc.

The facility, is located in the 218-W-5 low level burial ground in the northwest portion of the 200 West area of the Hanford Site. It consists of a rectangular landfill with approximate base dimensions of 250 ft. by 100 ft. and a surface grade footprint of 3.2 acres. The floor of the landfill slopes slightly, giving a variable depth of 30 to 40 ft. The floor slope is a minimum of 2%, allowing drainage to a recessed section at the eastern end that houses the sumps for leachate collection.

The landfill is Resource Conservation and Recovery Act (RCRA) compliant, with a double liner and leachate collection systems. The bottom and sides of the landfill are covered with a 3 ft. deep operations layer of soil to protect the liner system during fill operations. Additional layers progressing toward the subgrade for the landfill floor include (1) a geotextile that will act as a cushion between the operations layer and the primary drainage gravel, (2) a 1 ft. layer of primary drainage gravel, (3) a geotextile that will act as a cushion between the drainage gravel and the primary and secondary geomembranes, (4) a geonet with high transmissivity functioning as a redundant drainage system in conjunction with drainage gravel on the floor, (5) the primary leachate barrier, a 60 mil high-density polyethylene (HDPE) liner, (6) 1.5 ft. of compacted clay/soil admix, (7) a geotextile cushion, (8) 1 ft. of drainage gravel, (9) a geotextile cushion, geonet and a secondary 60 mil HDPE liner and, (10) 3 ft. of admix material (clay/soil) meeting permeability requirements. On the landfill sideslopes, the primary and secondary liner systems utilize geocomposite (2 geotextiles thermally bonded to a geonet), drainage layers instead of the drainage gravel and geotextiles used on the floor.

The primary leachate collection system is composed of 4 in. diameter perforated drainage pipes that lie along the centerline of the floor, at the base of the side slopes, and down the "upslope" side of the access ramp. The floor slopes will direct leachate to the center of the floor, which also slopes down toward the sump area located at the east end of the landfill. The secondary leachate collection system is installed above the secondary liner system. Pumps are provided in the sump areas, and provide for removal and

storage of leachate in a 10,000 gal. storage tank located at the eastern crest of the landfill.

It is planned that leachate collected from the operating landfill will be transferred to the Hanford double-shell tank system for storage. Treatment and disposal of the leachate will be facilitated through the use of existing facilities, such as the 242-A Evaporator, the Liquid Effluent Retention Facility (LERF) and the 200 Area Effluent Treatment Facility (ETF).

In accordance with regulatory requirements and permit conditions, leachate will be removed from the facility and collected in the 10,000 gallon collection tank. When a need for transfer of leachate from collection tank arises, the leachate will be sampled to determine that a transfer to the double-shell tank farms via tanker truck can occur. The leachate will be stored in the double-shell tank system until it can be staged for processing through the 242-A Evaporator.

The Westinghouse Hanford Company (WHC) is the Hanford Site Operating Contractor and is the responsible contractor for facility startup and operation of the leachate collection system.

1.2 Hazards Analysis

WHC-SD-W025-PSAR-001, *Mixed Waste Lined Landfill (Project W-025) Preliminary Safety Analysis Report*, provides a hazards analysis for the operation of this facility. The results of the hazards analysis showed that the facility would be classified as a low hazard. This classification was based on WHC's implementation of DOE Order 5481.1B, *Safety Analysis and Review System*, that provided requirements for safety analysis of nuclear facilities at the time the PSAR was written.

The hazards analysis provided in WHC-SD-W025-PSAR-001 provides a basis for determining the final hazard category as specified in DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*, the supporting guidance for DOE Order 5480.23, *Nuclear Safety Analysis Reports*. This standard indicates that hazard categories should be developed for appropriate segments of a facility. Since Trench 31 is located on a contiguous portion of land and it performs a unique function in the SWBG (i.e. it is the only radioactive mixed waste lined landfill), a hazard category can be determined specifically for the Trench 31 segment of the SWBG operations.

When the W-025 PSAR was written, a conservative estimate of the material which can physically be released from the facility was determined. The estimate of the radionuclide concentration limits was based on the NRC Class A limits (10 CFR 61.55). The waste acceptance criteria now in place for disposal of the waste (see WHC-EP-0063-4, *Hanford Site Solid Waste Acceptance Criteria*) has

generally more restrictive limits for the waste (referred to as Category 1 limits) than the NRC Class A limits.

The DOE-STD-1027-92 identifies Threshold Quantities (TQs) as the minimum value to result in the classification of a Hazard Category. Based on these TQs identified in DOE-STD-1027-92, it may be possible to exceed the TQ of Hazard Category 3, but it will not be possible to exceed the Hazard Category 2 threshold at the NRC Class A concentrations or at the waste acceptance Category 1 limits. Since it will be possible to enter the Hazard Category 3, but not the Hazard Category 2, Trench 31 is classified as a Hazard Category 3 facility. This hazard categorization has been documented in WHC-SD-WM-ISB-002, *Solid Waste Burial Grounds Interim Safety Basis*.

2.0 PURPOSE

The decision to request a Westinghouse-approved Readiness Assessment (RA) was made using a graded approach as recommended in DOE Order 5480.31, *Start-up and Restart of Nuclear Facilities*, and DOE-STD-3006-93, *Planning and Conducting Operational Readiness Reviews*. The type of assessment and approval authority are commensurate with the facility's potential impact on safety, environmental compliance, safeguards and security and its programmatic importance, including its present and future mission.

In addition to its Hazard Category 3 status, the facility is considered, from a permitting stand point, to be a lateral expansion of the existing SWBG located at the Hanford Site. The facility will be operated in a similar manner as existing SWBG operations, with the exception of the leachate collection system. The leachate collection system, although unique to the SWBG, is operated in a similar manner as the system for the Central Waste Complex (CWC) Mixed Waste Storage Pad, in that liquid waste is collected in a sump, sampled, and disposed of according to requirements.

To summarize the above, the facility is Hazard Category 3 and is a modification to the SWBG and the SWBG authorization basis. Table 1 of DOE-STD-3006-93 indicates a RA and DOE Field Office or designee as the appropriate review type and approval authority for startup. The WHC approval authority is the Director, Solid Waste Disposal Division (SWD). The RL approval authority for startup of the facility is the Director, Waste Programs Division (WPD).

3.0 SCOPE

The scope of the RA is to assure new areas of work being performed meet the safety, health, environmental compliance, and management readiness required. This RA will review facilities, activities, and operations associated with maintaining and operating the facility and its leachate collection system described in the Introduction. If Trench 34, the second Mixed Waste Landfill, is ready for operations prior to the commencement of this RA, it will be considered a part of the facility, and thus will be included in the RA. This

does not change the review type and approval authority requirements. This RA will be performed under the guidance of DOE Order 5480.31 and DOE-STD-3006-93.

The RA will be conducted within physical and administrative boundaries. Procedures and management systems associated with SWD operations at the facility will be included in the review scope. Also, only management and personnel associated with facility operations will be included in the review scope. All other interfacing operations will not be open for review if they are not encompassed under the above review scope.

The Boundary of the Scope for the RA is based on the fact that the Solid Waste Operations is a continuing operation and that Trench 31 is the object of this RA. The Boundary of the RA will be limited to new construction and new requirements placed upon the existing Solid Waste Operations by Trench 31. These include: all new construction and utility modifications associated with the facility, development of the waste acceptance criteria for the trench; development of safety documentation; development of required environmental documentation; procedures for maintenance and operations of special systems (leachate collection); development of methods and agreements to transport and dispose of the leachate waste; and operators and support personnel are trained to operate and maintain the equipment. The remainder of the Solid Waste Operations is beyond the Boundary of this RA.

The RA will include:

- Assessment of the adequacy and correctness of the Work Plan, Emergency Procedures, and Waste Acceptance Criteria.
- Assessment of the adequacy of the level of operator knowledge as evidenced by review of qualification documentation and observation or review of documentation by RA Team Members (Team Members) of actual performance during performance-based training.
- Examination of the SWBG authorization basis to assure that existing procedures and staffing meet the authorization basis, and that potential hazards for personnel protection and emergency planning purposes are being addressed.
- Assurance that programs are in place and are being effectively utilized for self-assessment, lessons learned, and operating experience of the facility.
- Assurance that the radiological protection organization and program are adequate to support safe Mixed Waste Burial operations.
- Assurance that procedures and agreements exist to sample, analyze, transport, and dispose of liquid waste.

- Assurance that the Mixed Waste Burial operations can be conducted in accordance with safety, health, and environmental requirements.
- Assurance that the facility meets the functional design criteria.

The breadth of the RA shall verify that the Core Requirements listed in Attachment 2 of DOE Order 5480.31, as well as WHC, Federal, or State of Washington Department of Ecology (Ecology) requirements, are met. The RA shall cover those Core Requirements which pertain to the facility and the leachate collection system. These Core Requirements are listed in the next section (Section 4.0) along with the prerequisites identified by facility management that must be met prior to the start of the RA.

4.0 READINESS ASSESSMENT PREREQUISITES

The following summarizes the documentation that must be completed by WHC SWD prior to the commencement of the WHC RA. It is discussed in further detail in the remainder of this section.

- Facility safety documentation, including definition of the safety envelope, required systems, procedures, and administrative controls are complete, approved, and auditable.
- A compliance assessment has been completed, non-compliances have been identified, and schedules for gaining compliance have been made.
- Formal programs exist for facility operations, i.e., training and qualification, procedure development, conduct of operations, radiological controls, issues management, configuration management, maintenance, and quality assurance.
- Waste Acceptance Criteria that includes all types of waste to be accepted by the facility.
- A written declaration of readiness from the facility.

The remainder of this section identifies each of the Core Requirements and details the prerequisites for demonstrating readiness to operate and commence the WHC RA. The facility will issue a Readiness to Proceed Memorandum, which will identify how each prerequisite is met. If a manageable number of items are still open, the Readiness to Proceed Memorandum may still be submitted. Each item must be identified in the Readiness to Proceed Memorandum. The items will be few in number, well defined with a well defined completion plan, able to be completed on a schedule which is consistent with the RA schedule, and not of such a nature individually or in aggregate to preclude an adequate review by the RA of any specific area.

4.1 Requirement:

There are adequate and correct procedures and safety limits for operating the process systems and utility systems.

Prerequisite:

- 4.1.1 Work Plans or procedures for the following operational conditions/activities have been reviewed and approved:
 - 4.1.1.1 Periodic surveillance of the facility (reference Washington Administrative Code (WAC) 173-303-640 (6) (b)).
 - 4.1.1.2 System configuration to allow pumping from bottom liner leachate collection system to the top liner leachate collection system.
 - 4.1.1.3 System configuration to allow pumping from the top liner leachate collection system to the leachate collection temporary storage tank.
 - 4.1.1.4 System configuration to allow pumping from the bottom liner leachate collection system to the leachate collection temporary storage tank.
 - 4.1.1.5 System configuration to allow recirculation of the leachate in the temporary leachate collection temporary storage tank.
 - 4.1.1.6 System configuration to allow transfer of the leachate in the leachate collection temporary storage tank to a transport tanker.
 - 4.1.1.7 Waste acceptance criteria and leachate sampling and characterization procedures and requirements.
 - 4.1.1.8 Leachate waste shipping preparations.
 - 4.1.1.9 Trench operations (includes receipt of containerized and bulk waste).
 - 4.1.1.10 Emergency procedures/plans are issued which include facility activities.
- 4.1.2 Safety Limits: Safety limits identified in the authorization basis have been incorporated in operating documents.

- 4.1.3 A complete set of approved as-built drawings are available for operator use.

4.2 Requirement:

Training and qualification programs for operations and operations support personnel have been established, documented, and implemented (the training and qualification program encompasses the range of duties and activities required to be performed).

Prerequisite:

- 4.2.1 Solid Waste Operations training is in accordance with WHC-CM-5-34, *Solid Waste Disposal Operations Administration*, Section 1.8, *Training Administration*.
- 4.2.2 Performance-based training to qualify the operators prior to the startup of the facility leachate collection operations is complete and effectiveness of the training is established by written test completions.
- 4.2.3 Training included review of provisions in Part A and draft Part B permits and the authorization basis for the facility. Review of the contingency plan is completed.

4.3 Requirement:

Level of knowledge of operations and operations support personnel is adequate based on reviews of examinations and examination results, and selected interviews of operating and operations support personnel.

Prerequisites:

- 4.3.1 A review has been conducted of the results of all required written and oral exams identified in the training plan. The results are adequate for the startup and use of the facility.

4.4 Requirement:

Facility safety documentation is in place that describes the "safety envelope" of the facility. The safety documentation should characterize the hazards/risks associated with the facility and should identify mitigating measures (systems, procedures, administrative controls, etc.)

that protect workers and public from those hazards/risks. Safety systems and systems essential to worker and public safety are defined and a system to maintain control over the design and modification of facilities and safety-related utility systems is established.

Prerequisites:

- 4.4.1 The contractor has approved the authorization basis for Trench 31.

4.5 Requirement:

A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety related process systems and safety related utility systems. This includes examinations of records of tests and calibration of safety system and other instruments which monitor limiting conditions of operation or that satisfy Technical Safety Requirements. All systems are currently operable and in a satisfactory condition.

Prerequisites:

- 4.5.1 All testing, calibrations, and verifications of the leachate collection and storage systems are complete.
- 4.5.2 Workplans/plant operating procedures are issued which cause the systems and structures important to safety to be periodically tested and/or reviewed to ensure satisfactory condition is maintained.
- 4.5.3 Acceptance and/or operability test procedures are complete, and deficiencies are corrected to ensure all systems operate per design and safety basis.
- 4.5.4 Testing data has been incorporated as necessary into training and procedures.
- 4.5.5 Assurance that the trench liner will not fail has been documented.

4.6 Requirement:

A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor.

Prerequisites:

4.6.1 A review of the WHC-CM-1-4, *Corrective Action Management Manual*, Quality, Environmental, Safety Tracking System (QUEST) database has been performed and no open deficiencies exist which affect the safe startup of the facility.

4.6.2 Facility management has identified and addressed all open deficiencies and recommendations, and has provided schedules of resolution and completion.

4.7 Requirement:

A systematic review of the facility's conformance to applicable DOE orders has been performed, and nonconformance have been identified, and schedules for compliance have been justified in writing and formally approved.

Prerequisites:

4.7.1 Solid Waste Management (SWM) has documented that the facility complies with applicable federal, state, regulatory agency, and DOE standards and requirements. The documentation shall include a list that identifies the standards and requirements that were considered, and those that were considered applicable. Nonconformances will be reviewed and documented as they occur in accordance with acceptable practices for SWM.

4.8 Requirement:

Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services (e.g., training, maintenance, waste management, environmental protection, industrial safety and hygiene, radiological protection and health physics, emergency preparedness, fire protection, and quality assurance are adequate for operations.

Prerequisites:

4.8.1 The maintenance manager has confirmed the programs, procedures, and personnel are adequate to maintain safe operations of the facility.

4.8.2 A tank trailer is available and ready for use in transporting liquid leachate waste to a treatment/storage/disposal (TSD) facility.

4.8.3 SWM has a memorandum of understanding with external support organizations to transport and dispose of its liquid leachate waste. The memorandum of understanding addresses waste acceptance criteria at the liquid waste disposal facility. The leachate collection system and SWBG are able to perform any necessary waste treatments to meet the liquid waste acceptance criteria of the liquid waste disposal facility.

4.8.4 Necessary inspections and reviews (e.g. fire inspection, industrial safety walkthrough, etc.) have been identified and completed and the facility passed all inspections and reviews satisfactorily.

4.8.5 SWM has identified the operational and administrative process for leachate sampling and analysis.

4.9 Requirement:

A routine and emergency operations drill program, including program records, has been established and implemented.

Prerequisites:

4.9.1 A minimum of one drill related to facility operations has been performed.

4.10 Requirement:

An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.

Prerequisites:

None. This core requirement is not applicable. It applies only to test programs that are to be conducted after the startup of the facility (i.e. after the RA is complete). There is no such program planned or required for this facility. Core Requirement 5 will cover Acceptance Test Procedures and Operational Test Procedures, which will be conducted prior to the RA. Core Requirement 1 will cover procedure viability testing, which will be conducted prior to the commencement of the RA. Core Requirements 2, 3, and 19 will cover training, which will be completed prior to the commencement of the RA.

4.11 Requirement:

Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety.

Prerequisites:

- 4.11.1 Line management has identified supervision and back up(s), and the responsible BED.

4.12 Requirement:

The implementation status of DOE 5480.19, CONDUCT OF OPERATIONS REQUIREMENTS FOR DOE FACILITIES, is adequate for operations.

Prerequisites:

None. This core requirement is not applicable. It applies to verifying that DOE Order 5480.19 is being complied with administratively (i.e. procedures reflect that it is being implemented). This has already been done for all of SWM, and thus, does not need to be done again for this facility, since it is part of SWM. The review of whether or not the facility operationally complies with the Conduct of Operations procedures is performed under the other Core Requirements. For example, "Equipment and Piping Labeling" and "Operations Procedures" is reviewed under Core Requirement 1, "Control of Equipment and System Status" is reviewed under Core Requirement 5, and "On-the-Job Training" is reviewed under Core Requirements 2, 3, and 19.

4.13 Requirement:

There are sufficient numbers of qualified personnel to support safe operations.

Prerequisites:

- 4.13.1 A minimum of one manager and two operators are qualified per sections 4.2.

4.14 Requirement:

A program is established to promote a sitewide culture in which personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and through their actions, demonstrate a high priority commitment to comply with these requirements.

Prerequisites:

- 4.14.1 Facility and support personnel concerns and issues have been dispositioned.

4.15 Requirement:

The facility systems and procedures, as affected by facility modification, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis.

Prerequisites:

- 4.15.1 Any safety reviews (i.e. Unreviewed Safety Question (USQ) process) associated with the facility have been completed, and there are no identified outstanding USQs.

4.16 Requirement:

The technical and managerial qualifications of those personnel at the field organization and at Headquarters who have been assigned responsibilities for providing direction and guidance to the contractor, including the Facility Representatives, are adequate (DOE Operational Readiness Review only).

Prerequisites:

None. This core requirement directs an action by the DOE and is outside the scope of this Plan of Action.

4.17 Requirement:

The results of the contractor Operational Readiness Review are adequate to verify the readiness of hardware, personnel, and management programs for operations (DOE Operational Readiness Review only).

Prerequisites:

None. This core requirement directs an action by the DOE and is outside the scope of this Plan of Action.

4.18 Requirement:

Modifications to the facility have been reviewed for potential impacts on procedures and training and qualification. Procedures have been revised to reflect these modifications and training has been performed to these revised procedures.

Prerequisites:

- 4.18.1 All Job Control System work packages associated with the facility have been completed.
- 4.18.2 All Engineering Change Notices associated with the facility have been implemented and completed.
- 4.18.3 All Document Acceptance Review Forms associated with the facility have been completed.

4.19 Requirement:

The technical and management qualifications of contractor personnel, responsible for facility operations, are adequate.

Prerequisites:

- 4.19.1 All exempt and non-bargaining unit personnel have completed any required special training for the facility.

4.20 Requirement:

Operations office oversight Programs such as Occurrence Reporting, Facility Representative, Corrective Action, and Quality Assurance Programs are adequate DOE Operational Readiness Review only.

Prerequisites:

None. This core requirement directs an action by the DOE and is outside the scope of this Plan of Action.

5.0 OVERALL APPROACH

This RA will be performed under the guidance of DOE Order 5480.31 and DOE-STD-3006-93. As discussed in the Scope, the RA Team will review all facilities, activities and processes associated with operating the facility to verify that the applicable Core Requirements from DOE Order 5480.31, as well as other WHC or Ecology requirements, are met. The applicable Core Requirements are discussed in the Scope and Appendix B.

One or more Team Members will be assigned a specific Core Requirement and will review the appropriate supporting documents. In addition, the Team Members will review documents such as Work Plans, Radiation Work Permits, Emergency Plans, and written plant operating procedures to ensure each is adequate, current, and consistent with the others. Interviews with cognizant personnel, procedure walk downs, drill observations, or other methods will be used by the RA Team to support conclusions.

The RA Team will identify and evaluate items requiring corrective action. The method by which these findings will be evaluated and classified as prestart and poststart is discussed in **Reporting and Resolutions**. Also, the methods of open item resolution and closure is discussed in that section.

Finally, the RA Team will submit a brief report and recommendation to the Director, Solid Waste Disposal, after verifying operational readiness and all pre-start conditions are satisfactorily addressed. Report preparation is discussed in **Reporting and Resolutions**. The Director, SWD, will inform RL, in writing, when satisfied that the facility has successfully completed the WHC RA, and will request approval to startup the facility. RL will then conduct a separate RA. Upon successful completion of the RL RA, RL will, in writing, approve the startup of the facility.

6.0 READINESS ASSESSMENT PREPARATIONS

To support this readiness effort, an RA Team will be convened to evaluate the actions taken and documentation assembled by the plant to demonstrate their up-to-date readiness. The following people make up the RA Team:

<u>Name</u>	<u>Organization</u>	<u>MSIN</u>	<u>Phone</u>
S. H. Norton (RA Team Leader)	SWD, Operational Readiness	T3-01	372-0449
R. L. Martin	SWD, Operational Readiness	T3-01	372-2702
J. E. Spets	SWD, Operational Readiness	T3-01	373-6659
L. G. Irons	SWD, Operational Readiness	T3-01	373-6658
C. H. Eccleston	WAE, NEPA Services	H6-26	376-9364
D. D. Carson	WAE, Quality Assurance	S1-52	373-3825

The RA Team Leader (Team Leader) is Mr. Steven H. Norton. The line management responsible for operations of the trench rests with Mr. Paul L. Hapke, Manager Solid Waste Management. Mr. Steven H. Norton is not in this management chain. Members of the RA Team shall be as selected by Mr. Norton, as recommended in DOE-STD-3006-93, Sec. 5.1. Mr. Norton and the RA Team are responsible for the development and performance of this Readiness Assessment Plan.

Mr. Norton meets the Team Leader qualifications recommended in DOE-STD-3006-93, Section 5.1.5.1. His resume is found in **Appendix A**. The Team Members will meet the qualifications recommended in DOE-STD-3006-93, Section 5.1.5.2.

Each Team Member must have assessment experience. No Team Member will have any connection with the facility operations that impact their independence to

review their assigned functional area. By their selection the Team Leader certifies that each Team Member is technically competent, has assessment experience, is independent, and through the familiarization process described above, is familiar with the site. These qualifications will be formally documented in the final report.

The RA Team will review the prerequisite documentation prepared for the activities for which readiness is based. This documentation is described in RA Prerequisites.

Prior to commencement of onsite RA activities, training of the RA Team will be conducted and will consist of site and facility familiarization, necessary radiological and safety training for unrestricted site and facility access, facility program status, and familiarization with the RA Implementation Plan and associated Criteria and Review Approaches (CRAs).

7.0 READINESS ASSESSMENT PROCESS

The RA Team will use the Criteria Review and Approaches (CRAs) provided in the Appendix B for its review. These CRAs provide refined bases for conducting the RA within the context of the scope set forth by the Core Requirements of DOE Order 5480.31. A graded approach was used, commensurate with the scope of this RA, to develop the CRAs. The Team Leader will manage the conduct of the RA to assure that all Core Requirements are thoroughly assessed.

The CRAs are based on Federal and State laws, RAs conducted at other DOE facilities, and the combined expertise of the RA Team. They consider the potential hazards of operations, the findings and advice of internal and external review groups, and the recognized needs of the facility. The Review Approaches include plans for reviewing procedures and programs, auditing records, interviewing personnel, inspecting equipment and facilities, and observing operations. Selected reviews will also require simulated operations by the facility to test the response of operational and support personnel to abnormal and accident events.

8.0 ADMINISTRATION

To facilitate RA Team coordination and the exchange of information, the RA Team will meet regularly. These meetings will permit the Team Members to discuss significant observations or problems identified during the day and will permit the Team Leader to identify any trends or areas where more detailed information may be required. It will also allow potential schedule difficulties or possible information gaps to be flagged in time to take corrective actions.

Responsibility for quality assurance of the review process rests with the Team Leader and includes Team Leader approval of all Team Members, daily onsite peer review of the findings of the Team Members, and specification of the form

of reports and retention of records on which the RA Team's conclusions are based. Additionally, any of the Team Members are free to issue a dissenting opinion, which will be carefully considered. Every attempt will be made to resolve the issue during the course of the review. However, should resolution not be achieved, provisions will be made to include the dissenting opinion in the final report. This independence, coupled with the professional experience of the participants, assures an objective and comprehensive review which will provide senior management with confidence that key findings are presented in an objective and responsible manner.

9.0 REPORTING AND RESOLUTIONS

9.1 Forms

During the conduct of the RA, documentation of review findings and the assembly of objective evidence of operational readiness will be the responsibility of the individual Team Members in accordance with specific directions given below. Two types of administrative forms will be used to accurately document onsite inspection activities and findings.

The Assessment Form in **Appendix C** is used to document the review logic of a Team Member used in their criteria evaluation process. Each Assessment Form covers a specific Core Requirement and lists the means the Team Member has used to measure the site's performance relative to the Core Requirement. The form should be complete enough to allow an outside agency reviewing the form to follow the review logic and means utilized to verify the site's performance with respect to the Core Requirement and to thereby validate the RA's completeness and adequacy. It is important that the assessment clearly describes the approach taken to review the Core Requirement and each of the associated criteria, ensuring that the approach used is what the criteria called for. If for some reason the intent of the criteria cannot be achieved, the reason should be documented. The Assessment Form is also used to document the findings uncovered during the criteria evaluation process.

9.2 Determination of Findings

During the conduct of the RA, documentation of review findings and the assembly of objective evidence of operational readiness will be the responsibility of the individual Team Members in accordance with specific directions given by the Team Leader. Team Member review findings will be documented on a standard Assessment Form (**Appendix C**). At the end of the on-site reviews the Team Members will complete their evaluations and provide their recommendations to the Team Leader. A brief discussion and recommendation period will then be conducted by the Team Leader. After all presentations have been made, the RA Team will combine their unresolved Findings listed on their Assessment Forms into a comprehensive set of Master Findings.

The RA Team will then use the Findings Classification Criteria (Appendix D) to classify each Master Finding as Prestart or Poststart. The final set of Prestart and Poststart Findings will be listed on the Master Findings List (Appendix E), which will be included in the RA Report.

Team Members will all be asked to concur in the RA Report in their areas of expertise. Dissenting opinions that have not been resolved will be appropriately addressed in the report. The RA Report will be transmitted by the Team Leader to the Director, SWD. Any items requiring closure after this transmittal will be reviewed for acceptance, at a minimum, by the Team Leader or the Team Member who identified the issue.

9.3 Lessons Learned

The Team Leader will report any problems or successes and document them as lessons learned to aid future readiness activities and will incorporate them into the final report. These will include lessons learned with respect to the RA process as well as any lessons learned regarding the design, construction, or operation of the facility.

9.4 Final Report

The Team Leader will develop a report to document the results of the RA and to provide justification for the RA Team's recommendations. The report will identify any deficiencies found in the review and will characterize the time-frame for their resolution.

Team Members will be asked to concur in the RA Report in the areas of their expertise. Dissenting opinions that have not been resolved will be appropriately addressed as an appendix to the report.

The final RA Report will adhere to the following format:

TITLE PAGE - The title page is the report cover and will state the subject and date(s) of the RA.

SIGNATURE PAGE - This page will be used by the Team Leader to promulgate the final version of the report.

TABLE OF CONTENTS - The table of contents should identify all sections and subsections of the report, illustrations, tables, charts, figures, and appendices.

INTRODUCTION - The introduction will provide information regarding the facility being reviewed, the purpose of the RA, and the scope of the RA. It will also contain a brief discussion of the overall objectives of the RA, the review process, and RA Team composition.

EXECUTIVE SUMMARY - This is a brief summary of the review process, the findings, and the readiness determination with appropriate recommendation.

RA TEAM EVALUATION - For each functional area, the report will discuss the objectives, the prestart and poststart findings of that area, and provide conclusions as to readiness to commence operations. Justifications for each finding are provided.

LESSONS LEARNED - Lessons learned that may apply to future RAs will be provided. Problems as well as successes will be documented. This may be issued at a later date as an addendum to the ORR report.

APPENDICES - Appropriate data will be provided as appendices to support the conclusions drawn in the report. These will include:

- a. Readiness Assessment Plan;
- b. RA Team List and Biographies;
- c. Assessment Forms; and
- d. Dissenting Opinions (if any).

9.5 Resolution of Findings

The RA Team will conduct a closeout meeting with facility management and present their report. During this meeting, Corrective Action Plans (CAPs) will be developed to address the RA Team's Findings. The Findings will be documented on the Master Findings List. Each CAP will contain the following elements:

- a. The Finding, as written in the report submitted by the RA Team, and whether the Finding is a Prestart or Poststart Finding.
- b. The actions that will address the deficiencies identified in that Finding. The actions shall provide evaluation of any overall programmatic deficiencies or root causes related to a specific Finding which may lead to further similar occurrences and include actions addressing such deficiencies or root causes.
- c. The proposed dates by which the actions will be completed. If the actions for a Finding are phased, then the dates for each phase shall be detailed.
- d. For Poststart Findings, a description of the risks and mitigating actions, if any, to be taken during the interim which will reduce the risks associated with the Finding to an acceptable level before final correction. A justification that the activity can proceed with acceptable risk will be included.

The Team Leader shall enter all CAPs associated with Prestart Findings into the QUEST database, or successive tracking system. The RA Team shall monitor and maintain approval authority over all Prestart CAPs. The Team Leader shall close each Finding in QUEST as its CAP is completed. SWD will inform RL, by memorandum, of their readiness to startup the facility. The memorandum should not be submitted until all Prestart CAPs identified by the RA and all other prestart items identified by the facility/activity have been completed. If a manageable number of items are still open, the memorandum may be submitted. Each item must be identified in the memorandum. The items will be few in number, well defined with a well defined CAP, able to be completed on a schedule which is consistent with the RL RA schedule, and not of such a nature individually or in aggregate to preclude an adequate review by the RL RA of any specific area.

10.0 SCHEDULE

Training for Team Members will occur prior to the RA and will last about 3 days. The RA will commence following notification from the facility to proceed. The RA is scheduled to occur in December, 1994. Approximately one week after the RA period, the RA final report will be completed. Team Members will be afforded the opportunity to review the final report prior to its issuance. Resolution of findings will occur after report issuance. WHC declaration of readiness should occur by December 30, 1994.

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APPENDIX A: TEAM LEADER QUALIFICATIONS**S. H. Norton**

BS Management and Organization

Work Experience:

Over sixteen years in nuclear operations and/or management of chemical processing facility operations, hot cell operations, Hanford Tank Farm operations, operational testing of Saltwell Receiver Vessel and systems, and of solid waste storage and disposal facilities for Rockwell and Westinghouse Hanford Companies.

Readiness Review Experience and Training:

Member of the start up team for Naval Reactor Compartment Disposal Operation, Radioactive Waste Compactor facility, Transuranic Storage and Assay Facility and Hanford's Non-Radioactive Dangerous Waste Storage Facility.

Readiness Review Board Member for portions of the CWC, Team Leader for TRU Retrieval activities, Readiness Review Board Chairman for CWC Permitted Mixed Waste Storage Facility and for 2706-T Low Level Decon Facility Restart.

Training includes accident investigation, Risk Evaluation, Root Cause Analysis, Conduct of Operations and DOE/EG&G Operational Readiness Review workshops.

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APPENDIX B: CRITERIA AND REVIEW APPROACHES

All Criteria and Review Approaches are to be conducted within the Boundary of the Scope. All references to "the facility" apply to Trench 31. All references to the "authorization basis" apply to the Trench 31 authorization basis.

Core Requirement 1

There are adequate and correct procedures and safety limits for operating the process systems and utility systems.

Interpretation

Procedures are defined to be program, operating, safety, and emergency permits, plans, and plant operating procedures.

This Core Requirement requires a review of the authorization basis documents only to ensure that any identified safety limits (Technical Safety Requirements (TSRs), Operational Safety Requirements (OSRs), and Limiting Conditions of Operations (LCOs)) have been implemented in the facility procedures.

The authorization basis documents are to be assessed under Core Requirement 4.

Acceptance Test Procedures (ATPs), Operational Test Procedures (OTPs), and Preventative Maintenance (PM) procedures are to be assessed under Core Requirement 5.

Criterion 1.1. There are adequate and up to date procedures in place which support the operating status of the facility.

Criterion 1.2. The procedures adequately and correctly incorporate the identified safety limits for operations of process and utility systems.

Criterion 1.3. The procedures adequately address all possible operating modes for the facility.

Criterion 1.4. The procedures provide operability and availability requirements for all systems and equipment operating modes. These requirements are consistent with facility safety documentation required by Core Requirement 4.

Criterion 1.5. Preexisting SWBG procedures have been modified as necessary to account for new procedures, systems, and equipment associated with the facility.

Approach

1. Walk down all work plans and plant operating procedures with the assistance of a cognizant person to assess their viability, completeness, and accuracy in addressing the operations to be performed.
2. Perform hand-over-hand walkthroughs of the system and compare with drawings and diagrams to ensure systems are documented as built and labeled.

3. Verify that all safety limits identified in the authorization basis have been properly incorporated into all procedures.
4. Review and assess procedures to determine if emergency conditions are defined.
5. Verify that the sum of all procedures address all possible operating modes for the facility. Verify that operability and availability requirements are provided in the procedures.
6. Verify that the final versions of all procedures have been evaluated for their impact on the authorization basis, and that all modifications to the authorization basis have been made as necessary.
7. Review and assess all procedures (as defined in the interpretation, above) for adequacy and consistency.
8. Observe operations to ensure that procedures are viable.
9. Review and assess the compatibility of facility procedures, systems, and equipment with preexisting SWBG procedures.

Basis

It is essential that procedures accurately reflect the actual equipment installed in the plant. If operation is based on an incorrect system configuration, safety cannot be ensured. Verification of the current status of procedures relative to plant modifications must be accomplished and must be supplemented by a strong program that continues to ensure compliance with requirements.

Any identified OSRs and LCOs are to be implemented in procedures prior to operations. To ensure that the safety envelope is maintained, the procedures must implement the correct OSRs during normal and off-normal events. DOE Order 5480.22, *Technical Safety Requirements*, requires the identification of OSRs. The above criteria and approaches are used to determine whether or not identified OSRs have been adequately incorporated into the procedures.

Plant operating procedures are used to ensure that OSR limits are not exceeded and that operations are conducted safely. An inaccurate or out-of-date procedure could compromise the safety envelope. It is imperative that procedures be approved and current, and that they are consistent with the effective OSRs. Experience in the nuclear industry is that procedures actually used by operators are sometimes updated very slowly or that changes may be incorrect, vaguely written, inconsistent, conflicting, inadequately reviewed, or incorporated incorrectly. This review applies to all procedures, but focuses primarily on those

affecting OSRs. Problems in this area would suggest similar problems in controlling changes in other operating and maintenance procedures.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD Standards/ Requirements Identification Document (S/RID), Chapters 1, 3, 4, 9

Core Requirement 2

Training and qualification programs for operations and operations support personnel have been established, documented, and implemented (the training and qualification program encompasses the range of duties and activities required to be performed).

Interpretation

The objective of this Core Requirement is to ensure:

- SWD and facility training requirements for initial and ongoing training programs are met,
- qualification records are accurate and complete,
- qualification requirements are adequate for all operations positions,
- training materials are technically accurate, incorporate the latest revisions to facility equipment and plant operating procedures, and sufficiently cover the knowledge requirements.

The Core Requirement applies to facility-specific qualification programs established for non-exempt, bargaining unit operations and support personnel. It does not apply to support service qualification programs (e.g. Health Physics Technician qualification program), except to ensure that support service personnel are fully qualified.

The adequacy of exams, exam results, and personnel level of knowledge are to be assessed under Core Requirement 3.

The determination of there being an adequate number of personnel available is to be assessed under Core Requirement 13.

The adequacy of the training of exempt and non-bargaining unit personnel is to be assessed Core Requirement 19.

Criterion 2.1. Performance-based training programs have been developed for personnel directly associated with the facility using a systematic approach.

Criterion 2.2. The scope and content of training programs are adequate to ensure that job assignments can be performed in a manner that supports facility and personal safety.

Criterion 2.3. As-built drawings and the latest revision of approved procedures are available to personnel and personnel directly associated with the facility have been trained and qualified in their use.

Criterion 2.4. Qualification programs are in place that provide qualification standards and procedures for training support personnel.

Criterion 2.5. Facility personnel are adequately trained to respond to emergency situations.

Criterion 2.6. Qualifications of personnel are documented.

Criterion 2.7. Preexisting SWBG training programs have been modified as necessary to account for new procedures, systems, and equipment associated with the facility.

Approach

1. Verify that training programs for initial and continuing training of personnel are established and implemented.
2. Review and assess the performance-based aspects of the training plan. Ensure that those operations (normal and emergency) required for each operator's qualification are included as part of the program.
3. Review the qualification records of each assigned operator to ensure that final completion approval is based upon satisfactory performance during the performance-based training.
4. Review and assess the adequacy of documentation of personnel qualification program records.
5. Review training materials to assess their technical accuracy and comprehensiveness, including the incorporation of all facility and procedural changes.
6. Review the training records of all operators to verify that all required training was satisfactorily completed.
7. Review training records of at least one operational support person in each of the support areas identified in the Criteria of Core Requirement 8 to verify that all required training was satisfactorily completed.
8. Review and assess the compatibility of facility procedures, systems, and equipment with preexisting SWBG training plans and exam question banks.

Basis

WAC 173-303 and 29 CFR 126 require training-specific programs to be developed and implemented. This review will ensure that Federal and State requirements, as well as best management practices, are implemented.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapter 4

Core Requirement 3

Level of knowledge of operations and operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operating and operations support personnel.

Interpretation

The objective of this Core Requirement is to:

- review and assess exam keys, both questions and answers, for technical accuracy and comprehensiveness,
- assess the level of knowledge of personnel using exam results,
- assess level of knowledge of personnel by conducting interviews.

This Core Requirement objective is to ensure that non-exempt, bargaining unit operations and support personnel are technically competent in all aspects of their assigned duties. The objective does not apply to a review of support service examination programs (e.g. Health Physics Technician examination program), but does allow interviews to assess the level of knowledge of support personnel in their areas of expertise (e.g. radiological fundamentals).

The adequacy of training of exempt and non-bargaining unit personnel is to be assessed under Core Requirement 19.

Criterion 3.1. The level of operations and operations support personnel skill is adequate to operate safely, as evidenced by review of examination results and by selective oral exams of personnel by Team Members.

Criterion 3.2. Examinations given to operations and operations support personnel are adequate in their depth and breadth of subject matter as it pertains to the operation under review and the assigned duties of personnel.

Criterion 3.3. Interviews with and/or on the job observations of selected operations and operations support personnel convey the impression that personnel are competent in their job.

Approach

1. Review and assess test material to verify that they adequately reflect training content and test for an understanding of technical fundamentals.
2. Conduct interviews with operations personnel to determine the extent of their understanding of procedure, any OSR and LCO compliance policies and the consequences of noncompliance.
3. Conduct interviews with operations personnel to verify that they have an adequate understanding of technical fundamentals.

4. Observe operations to evaluate the effectiveness of training.
5. Review and assess written and oral exam results.

Basis

The Defense Nuclear Facilities Safety Board (DNFSB) Recommendations 90-4, 91-3, 91-4, 92-3, and 92-6 delineated the important facets of a readiness review. These included assessment of the level of knowledge achieved during operator qualification programs as evidenced by review of exam questions and results and by selective oral exams of operators by the readiness review group.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 1, 4, 9

Core Requirement 4

Facility safety documentation is in place that describes the "safety envelope" of the facility. The safety documentation should characterize the hazards/risks associated with the facility and should identify mitigating measures (systems, procedures, administrative controls, etc.) that protect workers and the public from those hazards/risks. Safety systems and systems essential to worker and public safety are defined and a system to maintain control over the design and modification of facilities and safety-related utility systems is established.

Interpretation

This Core Requirement requires a review of all safety documentation in the authorization basis.

Procedures that were reviewed under Core Requirements 1 and 5 are not to be reviewed under this Core Requirement.

Criterion 4.1. The hazards and risks associated with the facility are characterized and safety limits are quantified.

Criterion 4.2. OSRs, LCOs, and TSRs are appropriate for the status of the facility.

Criterion 4.3. Safety systems are defined (including safety related process and safety related utility systems) and essential support systems are defined (systems essential in support of safety systems and essential to worker and public safety).

Criterion 4.4. Safety documentation identifies mitigating measures (systems, procedures, administrative controls, etc.) that protect workers and the public from the characterized hazards and risks.

Criterion 4.5. Safety documentation is in accordance with the applicable administrative and regulatory requirements for the type of facility.

Criterion 4.6. The design control program was properly implemented in the design of the facility.

Approach

1. Review the authorization basis for safety equipment to assure they are adequately defined, identified, and described per WHC-CM-1-3, *Management Requirements and Procedures*, MRP 5.46, *Safety Classification Systems, Components, and Structures*.
2. Review the safety equipment lists to ensure they are accurate and complete.

3. Review and assess the authorization basis.
4. Review and assess the accuracy and completeness of the authorization basis as pertains to the waste streams and inventories that are to be processed by the facility.
5. Review and assess the Safety Analysis Report for Packaging (SARP) of the tank trailer(s) that will be used to transport leachate waste from the facility to ensure it has incorporated modifications to the tank trailer and the waste stream that it will transport.

Basis

Expert judgment is the primary basis for the above criteria and approach. Guided by applicable DOE orders and industry standards, experienced Team Members will evaluate the authorization basis to verify that the criteria and objective are achieved.

Experience in the DOE and commercial nuclear industry is that quality assurance program elements are sometimes not fully addressed to implement effective QA Programs. Documentation is generally weak, as well as, controls for design changes. The Code of Federal Regulations 10 CFR 830.120, QA Requirements, and 10 CFR 835, Occupational Radiation Protection, require formal application of quality assurance requirements, including assessment against recognized standards.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 3, 5, 6, 7, 8, 11, 12, 18

SWBG authorization basis

Core Requirement 5

A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety related process systems and safety related utility systems. This includes examinations of records of tests and calibration of safety system and other instruments which monitor limiting conditions of operation or that satisfy technical safety requirements. All systems are currently operable and in a satisfactory condition.

Interpretation

This Core Requirement applies to prestartup test and calibration programs and poststartup periodic tests, calibrations, and maintenance. It applies to those systems defined in Core Requirement 4. As a best practice to ensure that all systems are ready for operations, this core requirement will also be applied to non-safety systems.

Criterion 5.1. All safety systems and safety related utilities are operable and available, as defined by operability and availability requirement procedures identified in Core Requirement 1.

Criterion 5.2. The maintenance support organization is ready to maintain all systems.

Criterion 5.3 All equipment and systems meet the Functional Design Criteria and are ready for use.

Approach

1. Review and assess the adequacy of and completion of all Acceptance Test Procedures (ATPs) and Operational Test Procedures (OTPs) by reviewing test procedures and test records. Verify that all tests were reviewed and approved.
2. Review and assess completion of all required calibrations.
3. Review and assess preventative maintenance and recalibration schedules and procedures.
4. Ensure spare parts have been identified and are available.
5. Review and assess method used to track the status of the operability and availability of all safety systems and safety related utilities.
6. Verify that Certified Vendor Information files are in place and are correctly referenced with the H-2 drawings.
7. Review and assess the as-built facility to the Functional Design Criteria.

8. Review and assess liner testing documentation.

Basis

Appropriate procedural controls and clear definitions of responsibility are necessary to ensure that instrumentation equipment important to safe waste handling are performing the functions for which they were intended. Industry experience has shown that particular attention is warranted to clarity of procedures and controls for post-maintenance testing to ensure effective configuration control and system operability.

Prior to commencing operation, the Solid Waste organization must ensure that their work control system is operating effectively and that they can justify operations if any equipment important to Mixed Waste Burial is inoperable. Backlog trends and aging analysis can provide valuable insights to the organization's availability and utilization of resources.

In all stages of Mixed Waste Burial operations, the management and work force habits and culture will institutionalize practices of housekeeping and material controls. There is a direct correlation between good housekeeping practices, pride of ownership, and the level of industrial and radiological safety at industrial facilities.

Industrial safety and Mixed Waste Burial mission-related equipment reliability requires the availability of properly specified maintenance support equipment. Maintenance equipment provided must be maintained and calibrated to ensure that maintenance activities are safe, effective, and maintain configuration management controls.

Industry experience has shown that good maintenance practices enhance the safety of facility operations and the reliability of equipment and systems. An effective program of predictive, preventive, and corrective maintenance activities enhances availability and operability of equipment and provides data which can be used for continued improvements.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 3, 5, 6, 7, 8, 11, 12, 18

SWBG authorization basis

Core Requirement 6

A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor.

Interpretation

This Core Requirement applies only to the facility specific tracking procedures and the facility's implementation of procedures established and required by WHC and SWD. The review does not apply to a determination of the adequacy of WHC or SWD tracking procedures.

Criterion 6.1 An adequate system is used to track deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and WHC.

Approach

1. Review and assess the completion of items that were entered into QUEST.
2. Review and assess the completion of items that were entered into the Waste Remediation Tracking System (WRTS) (see WHC-CM-5-34, Section 1.20, *Waste Remediation Tracking System*).
3. Review and assess items still open in QUEST and WRTS.
4. Review and assess facility documentation for the implementation of WHC-CM-3-5, *Document Control and Records Management Manual*, Section 12.7, *Approval of Environmental, Safety, and Quality Affecting Documents*.

Basis

Review of this objective is based upon best management practice and guidance provided in DOE Order 5480.31. The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 1, 2, 9, 10

Core Requirement 7

A systematic review of the facility's conformance to applicable DOE orders has been performed, any nonconformances have been identified, and schedules for gaining compliance have been justified in writing and formally approved.

Interpretation

This Core Requirement is to review and assess the facility performance of initial and periodic compliance reviews.

Actual verification of compliance is performed under the other Core Requirements.

Criterion 7.1. A compliance assessment has been completed, non-compliances have been identified, and schedules for gaining compliance have been made.

Approach

1. Review and assess documentation of the facility's compliance assessment.
2. Review and assess the compliance schedule.
3. Review and assess efforts to meet the compliance schedule.
4. Review and assess National Environmental Policy Act (NEPA) documentation.
5. Review and assess the Waste Acceptance Criteria for the facility.

Basis

The DNFSB performed a review and evaluation of the content and implementation of standards relating to the design, construction, operation, and decommissioning of DOE defense nuclear facilities. The results indicated a large degree of variability in the level of detail specified by DOE orders and, in general, a level of specificity much less than is found in Nuclear Regulatory Commission requirements applied to commercial nuclear facilities. There was a lack of uniformity among such orders as to whether they are mandatory, non-mandatory, or referenced for information. Many DOE orders embodying safety requirements were in draft form, with substantial uncertainty as to when or in what form they will be issued. The DNFSB recommended and the DOE accepted responsibility to identify the specific standards considered applicable to the design, construction, operation, and decommissioning at all DOE defense nuclear facilities.

References

SWD S/RID, All Chapters

Core Requirement 8

Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services (e.g., training, maintenance, waste management, environmental protection, industrial safety and hygiene, radiological protection and health physics, emergency preparedness, fire protection, quality assurance, criticality safety, and engineering) are adequate for operations.

Interpretation

This Core Requirement requires review of support service management programs, personnel, facilities, and equipment, all of which was established and procured specifically for the facility being reviewed. As an example, a training office and managing staff setup within the facility to be reviewed is within the scope of the review, but the rest of SWD and WHC training department is not within the scope of the review.

The adequacy of support service personnel facility specific training is to be assessed under Core Requirements 2 and 3.

Criterion 8.1. All support organizations have been informed of the facility and have confirmed that they are ready for it to be used.

Approach

1. Conduct interviews with the managers of all of the support organizations identified in the core requirement statement to verify that they know of the facility and are ready to support operations as required.
2. Verify that a liquid TSD facility is ready to receive liquid leachate waste from the facility.
3. Verify that a tank trailer is ready and available for use in transporting the liquid leachate waste to the liquid TSD facility.
4. Verify that SWM has identified the operational and administrative process for leachate sampling and analysis.

Basis

An effective emergency planning preparedness, and response program and organization are necessary to help ensure the safety and health of workers, the public and property and the environment in the event of an emergency involving DOE operations. Emergency management programs should be in place to enable organizations to respond to an emergency in a timely, efficient, and effective manner, resulting in improved mitigation of consequences and recovery. The basis for these programs

should be hazard assessments specific to the DOE operations and assessment of potential consequences of accidents or events.

It is industry practice to establish an engineering support organization which clearly defines its management's authority, responsibility, and accountability and which serves to provide the technical expertise necessary to support the needs of operations, maintenance, and Solid Waste management personnel.

Various sections of 40 CFR, WAC 173, WAC 197, and WAC 246 require the preparation of an environmental management program which should include all procedures necessary to establish and implement an effective environmental program.

Regulations promulgated under the Resource Conservation and Recovery Act require solid, hazardous, and mixed waste be characterized and managed in a manner to ensure the safe accumulation, storage, treatment, and/or disposal of such wastes.

DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*, requires immediate notification to DOE Headquarters Emergency Operations Center and the National Response Center as soon as possible (always within 24 hours) after discovery of a hazardous material spill or release to the environment (in excess of reportable quantities) as a result of DOE operations.

The fire protection program must be initiated by management to function effectively across all lines of facility operations. The fire protection program must address the specific hazards of the Solid Waste facility and incorporate the concept of "defense in depth." Fire protection systems must be designed to accomplish defined objectives. Fire emergencies are infrequent occurrences which require immediate action to protect personnel, the public, operations, and property.

An effective maintenance organization is necessary to retain design basis requirements for fulfilling the Solid Waste mission. Specific controls are unique to maintenance activities which significantly impact safety and equipment reliability. Management's general approach to maintenance sets the organization's cultural bias toward safety, configuration management, and equipment availability.

Experience in the DOE and Commercial nuclear industry is that quality assurance program elements are sometimes not fully addressed to implement effective QA Programs. Documentation is generally weak, as well as, controls for design changes, procurement control, corrective action, reporting, training, and close out of open corrective actions. 10 CFR 830.120 requires formal application of quality assurance requirements, including assessment against recognized standards.

Various sections of the Code of Federal Regulations (CFR) and the WAC require that training and qualification programs be established for facility personnel based on job requirements and that records for those programs be maintained in an auditable manner.

Industry practice, the Occupational Safety and Health Administration (OSHA), and DOE orders require that occupational safety and health programs ensure that employees are informed of potential hazards that may be encountered in the work place and that the associated controls are in place to maintain risks at an acceptable level. Effective procedures must be established and enforced to protect the employees' safety and health.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 2, 4, 5, 6, 10, 11, 12, 16, 18, 19, 20

Core Requirement 9

A routine and emergency operations drill program, including program records, has been established and implemented.

Interpretation

This Core Requirement does not require a review of the Emergency Plan except to ensure that an adequate cross section of emergency situations are addressed by the drill program.

The Emergency Plan is to be assessed under Core Requirement 1.

Criterion 9.1. Emergency drills adequately simulate a range of accidents that could occur at the facility from minor impact to personnel and property to a major impact on personnel (on and off site), property and the environment. Records of routine and emergency drills are maintained.

Criterion 9.2. Results of emergency and routine drills are documented and reviewed by emergency and facility management. Corrective actions and improvements to the drill program and the facility emergency plan are made as necessary.

Approach

1. Compare the Emergency Plan to the drill program to assess the adequacy and applicability of drills to the facility.
2. Observe and assess one or more drills.
3. Review and assess the results of the drill(s) as recorded in reports and assess the resolution of deficiencies.

Basis

An effective emergency planning preparedness, and response program and organization are necessary to help ensure the safety and health of workers, the public and property and the environment in the event of an emergency involving DOE operations. Emergency management programs should be in place to enable organizations to respond to an emergency in a timely, efficient, and effective manner, resulting in improved mitigation of consequences and recovery. The basis for these programs should be hazard assessments specific to the DOE operations and assessment of potential consequences of accidents or events.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapter 5

Core Requirement 10

An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.

Not Applicable:

This Core Requirement applies only to test programs that are to be conducted after the startup of the facility (i.e. after the RA is complete). There is no such program planned or required for this facility. Core Requirement 5 will cover Acceptance Test Procedures and Operational Test Procedures, which will be conducted prior to the RA. Core Requirement 1 will cover procedure viability testing, which will be conducted prior to the commencement of the RA. Core Requirements 2, 3, and 19 will cover training, which will be completed prior to the commencement of the RA.

Core Requirement 11

Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety.

Interpretation

This applies to all facility personnel. The review is to ensure that line management has developed adequate position descriptions, job definitions, and reporting relationships and has adequately informed and trained all facility personnel on them.

Criterion 11.1. Facility personnel have a clear understanding of their function and responsibility at the facility.

Criterion 11.2. Position descriptions with a list of minimum qualifications are available.

Approach

1. Review Organization Policy and resulting Position Descriptions for Mixed Waste Burial selected management positions to determine clarity of responsibility, accountability, and authority.
2. Interview facility personnel to establish the extent of their direct knowledge, and involvement in the existing facility status, problems, and accomplishments.
3. Interview facility personnel to assess their understanding of their responsibility, accountability, and authority.

Basis

The DNFSB Recommendations 91-3, 91-4, 92-3, and 92-6 delineated the important facets of a readiness review. These included assessment of the interrelationships and the delineation of roles and responsibilities among the various contractor organizations involved.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 1, 3, 9, 19

Core Requirement 12

The implementation status of DOE 5480.19, CONDUCT OF OPERATIONS REQUIREMENTS FOR DOE FACILITIES, is adequate for operations.

Not Applicable:

This Core Requirement applies to verifying that DOE Order 5480.19 is being complied with administratively (i.e. procedures reflect that it is being implemented). This has already been done for all of SWM, and thus, does not need to be done again for this facility, since it is part of SWM. The review of whether or not the facility operationally complies with the Conduct of Operations procedures is performed under the other Core Requirements. For example, "Equipment and Piping Labeling" and "Operations Procedures" is reviewed under Core Requirement 1, "Control of Equipment and System Status" is reviewed under Core Requirement 5, and "On-the-Job Training" is reviewed under Core Requirements 2, 3, and 19.

Core Requirement 13

There are sufficient numbers of qualified personnel to support safe operations.

Interpretation

This Core Requirement is only to ensure adequate numbers of personnel.

The adequacy of personnel qualifications is to be assessed under Core Requirements 2, 3, and 19.

The adequacy of support service staffing is to be assessed under Core Requirement 8.

Criterion 13.1. There is an adequate number of qualified personnel for the mission of the facility.

Criterion 13.2. Line management is aware at all times of the qualifications and lack of qualifications of all personnel under their direction.

Criterion 13.3. The staffing requirements are adequate to ensure safe operations.

Approach

1. Review and assess the implementation of WHC-CM-5-34, Section 1.8, and Section 3.7, *Shift Routines and Operating Practices*, as applies to Criterion 13.2.
2. Using qualification records and job assignment records, compare the numbers of qualified personnel to the staffing levels identified by facility management to ensure Criterion 13.1 is met.
3. Verify the staffing levels are greater than or equal to any minimum staffing requirements identified in the authorization basis.
4. Review and assess staffing requirements identified by the authorization basis and line management by performing operating procedure/work plan walkthroughs or by observing operations to verify that minimum staffing provides enough personnel to perform the operations.

Basis

The review will ensure that the facility is in compliance with associated aspects of Conduct of Operations requirements.

References

SWD S/RID, Chapters 1, 4, 9

Core Requirement 14

A program is established to promote a site-wide culture in which personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high priority commitment to comply with these requirements.

Interpretation

This Core Requirement applies only to the facility specific programs and the facility's implementation of programs established and required by WHC and SWD. The review does not apply to a determination of the adequacy of WHC or SWD programs.

Criterion 14.1 Management has implemented any site-wide programs to promote a culture of awareness of public and worker safety and health, and environmental protection requirements.

Criterion 14.2 Personnel exhibit and demonstrate a high priority commitment to public and worker safety and health and environmental protection.

Approach

1. Review and assess the implementation of WHC-CM-5-34, section 1.14, *ALARA Program*.
2. Observe operations to ensure that procedure compliance is routine and accepted as the way of doing business.
3. Interview personnel to ensure that all employee concerns have been adequately addressed.

Basis

Review of this objective is based upon best management practice and guidance provided in DOE Order 5480.31. The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 1, 2, 6, 9, 10, 18, 19, 20

Core Requirement 15

The facility systems and procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis.

Interpretation

This is to ensure use of the Unreviewed Safety Question (USQ) process.

The use of the USQ process for procedure modifications is to be assessed under Core requirement 1.

Criterion 15.1. Safety reviews have been completed for all temporary and permanent physical modifications to the facility that meet the requirements for performance of an Unreviewed Safety Question (USQ) screening and/or evaluation, and the authorization basis has been changed as necessary.

Criterion 15.2. The facility systems are consistent with the description of the facility included in the authorization basis.

Approach

1. Review and assess USQ screenings and evaluations.
2. Review and assess all Engineering Change Notices and work packages performed for modifying the original design to determine if USQ screenings, evaluations, and safety assessments were conducted as required.
3. Review and assess the facility description and analysis in the authorization basis to the as-built facility.

Basis

The DNFSB Recommendations 90-4, 91-3, 91-4, 92-3, and 92-6 delineated the important facets of a readiness review, including reviewing each facility's authorization basis to ensure the facility description, the procedures, and the accident analysis are consistent with modifications.

DOE Order 5480.21, *Unreviewed Safety Questions*, requires the implementation of a USQ process to ensure that all modifications are checked against the authorization basis to evaluate potential impacts on the authorization basis of the facility.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 1, 3, 4, 9, 10

Core Requirement 16

The technical and managerial qualifications of those personnel at the field organization and at Headquarters who have been assigned responsibilities for providing direction and guidance to the contractor, including the Facility Representatives, are adequate (DOE Operational Readiness Review only).

Not Applicable:

This Core Requirement directs an action by the DOE and is outside the scope of this RA.

Core Requirement 17

The results of the contractor Operational Readiness Review are adequate to verify the readiness of hardware, personnel, and management programs for operations (DOE Operational Readiness Review only).

Not Applicable:

This Core Requirement directs an action by the DOE and is outside the scope of this RA.

Core Requirement 18

Modifications to the facility have been reviewed for potential impacts on procedures and training and qualification. Procedures have been revised to reflect these modifications and training has been performed to these revised procedures.

Interpretation

This Core Requirement applies to the impact of the facility as it affects preexisting SWBG work plans and plant operating procedures and related training and qualification. This Core Requirement is to ensure that all necessary review and approval cycles have been completed.

The adequacy of procedure revisions are to be assessed under Core Requirement 1.

The adequacy of training program revisions are to be assessed under Core Requirement 2.

Criterion 18.1. All review and approval cycles for Engineering Change Notices (ECNs), work packages, and procedures have been completed and submitted to the proper control organizations.

Approach

1. Verify that all ECNs associated with the facility have been properly reviewed, approved, completed, and closed per WHC-CM-5-34, Section 2.1, *Configuration Change Control*.
2. Verify that all work packages associated with the facility have been properly reviewed, approved, completed, and closed per WHC-CM-5-34, Section 2.11, *Job Control System*.
3. Verify that all Document Acceptance Review Forms associated with the facility have been properly completed and closed.

Basis

The DNFSB Recommendations 90-4, 91-3, 91-4, 92-3, and 92-6 delineated the important facets of a readiness review. These included verification that procedures, training, and qualification have incorporated all plant modifications, ensuring the use of revised procedures in training.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 4, 9, 10, 18

Core Requirement 19

The technical and management qualifications of contractor personnel, responsible for facility operations, are adequate.

Interpretation

This Core Requirement applies to all exempt and non-bargaining unit personnel associated with the facility.

Criterion 19.1. Technical and management personnel responsible for facility operations have adequate on-the-job experience and/or training/education that qualifies them for their positions.

Criterion 19.2. Adequate documentation of the qualifications of contractor personnel for technical and management positions in facility operations is available.

Criterion 19.3. Responsible managers have sufficient applicable on-the-job experience and/or training to adequately understand and manage the facility operations and safety systems for which they are responsible.

Approach

1. Review and assess completion of qualifications.
2. Review and assess qualification requirements for adequacy.
3. Conduct interviews with managers, supervisors, and cognizant engineers to determine the extent of their understanding of procedure, TSRs, OSRs, and LCOs.
4. Review and assess the examination program.

Basis

The DNFSB Recommendation 92-6 delineated some of the important facets of a readiness review. These included assessment of the technical and managerial qualifications of contractor personnel responsible for direction, guidance, and operation of the facility.

The review will ensure that the facility is in compliance with associated requirements.

References

SWD S/RID, Chapters 1, 2, 4, 9

Core Requirement 20

Operations office oversight Programs such as Occurrence Reporting, Facility Representative, Corrective Action, and Quality Assurance Programs are adequate (DOE Operational Readiness Review only).

Not Applicable:

This Core Requirement directs an action by the DOE and is outside the scope of this RA.

APPENDIX C: ASSESSMENT FORM

Core Requirement Number and Statement:

Documentation Reviewed:

WRITING INSTRUCTIONS

List all documentation that you used in your review process. List them under the following heading, using tabs for spacing.

Document NameDocument Number (if it has one)

Areas Visited:

WRITING INSTRUCTIONS

List all areas that you visited or toured during your review. List them under the following heading, using tabs for spacing.

Area

Personnel Contacted:

WRITING INSTRUCTIONS

List all people you had contact with (i.e. talked to, listened to, watched, etc.), not counting other board members. List them under the following heading, using tabs for spacing.

NameTitle/Job DescriptionDate Contacted

Summary of Review:

WRITING INSTRUCTIONS

In one page or less, explain the process you went through in your review and your findings. This section should be in paragraph format; it should not be in list format.

Findings:**WRITING INSTRUCTIONS**

This section is to list concise statements of the findings determined in the Summary of Review section, above. It is not to list items that must be done to correct findings. It is not to be a general statement of whether or not readiness has been achieved (this will be a general board statement in the report). List each finding after one of the following numbers. You can list as many findings as you have.

Acronyms Used:**WRITING INSTRUCTIONS**

List all acronyms used in this summary. List them under the following heading, using tabs for spacing.

AcronymDefinition**Signatures:**

Team Member:

Team Leader:

APPENDIX D: FINDING CLASSIFICATION CRITERIA

These criteria will be used by the RA Team to determine if a Finding must be resolved before startup.

A. Initial Screening

1. Does this Finding involve a safety system?
2. Does this Finding involve processes, functions or components identified in the technical safety requirements/operational safety requirements (TSR/OSR) or nuclear safety control procedures?
3. Does this Finding involve potential adverse environmental impact exceeding regulatory or site-specific release limits?
4. Does this Finding impact non-safety processes, functions or components which could adversely impact safety related processes, functions or components?
5. Is this Finding noncompliant with a WHC or DOE/RL approved startup document?
6. Does this Finding indicate a lack of adequate procedures or administrative systems?
7. Does this Finding indicate operational or administrative noncompliance with procedures or policy?
8. Has this Finding occurred with a frequency that indicates past corrective actions have been lacking or ineffective?
9. Does this Finding require operator training not specified in existing facility training requirements?
10. Does this Finding impact worker health and safety?
11. Does this Finding impact the performance of the facility mission?

If the response to any of the above is yes, further evaluation, in accordance with the Finding Impact Criteria below is required. If the response to all of the above is no, the Finding is considered to be Poststart.

B. Finding Impact Criteria

1. Does the loss of operability of the item prevent safe shutdown, or cause the loss of essential monitoring?

2. Does the loss of operability of the item require operator action in less than 10 minutes to prevent or mitigate the consequences of events described in the safety analysis?
3. Does the loss of operability of the item cause operation outside the TSR/OSRs or safety analysis?
4. Does the loss of operability of the item result in a reduction of the margin of safety as described in the safety analysis?
5. Does the Finding indicate a lack of control which can have a near-term impact on the operability or functionality of safety related systems?
6. Does the Finding result in an unacceptable impact on worker health or safety?
7. Does the Finding prevent the facility from performing its mission?

If the response to any of the above questions is yes, the Finding is considered to be Prestart. If the response to all of the above questions is no, the Finding is considered to be Poststart. However, some Poststart Findings may be changed to Prestart by the Team Leader due to potential health, safety, and/or environmental significance.

APPENDIX E: MASTER FINDINGS LIST**Prestart Findings:****WRITING INSTRUCTIONS**

Each action shall have the following information (example shown below):

1. Prestart Finding number and statement.
2. Since a Prestart Finding may be a compilation of a number of Findings identified on Assessment Forms, it is important to be able to track each Prestart Finding back to all of the Assessment Forms that contributed to it. Thus, provide a list of all Core Requirement Number/Finding Number combinations that were used to write the Prestart Finding.
3. Identify the Finding Classification Criteria numbers that apply.

1. (Prestart Finding statement)
(Core Requirement Number / Finding Number)
(Finding Classification Criteria Numbers)

Poststart Findings:**WRITING INSTRUCTIONS**

Same instructions as Prestart Findings, with the exception that there are no Finding Classification Criteria numbers.

Signatures:

Team Leader:

Team Members:

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