



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

98-EAP-353

JUL 09 1998

Ms. L. J. Cusack
Hanford Facility RCRA Permit Manager
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336-6018



Dear Ms. Cusack:

QUARTERLY NOTIFICATION OF CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PERMIT, DANGEROUS WASTE PORTION (DW PORTION) (QUARTER ENDING JUNE 30, 1998 - CONDITION I.C.3)

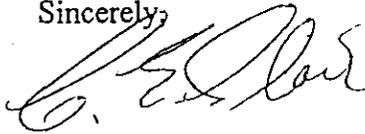
Condition I.C.3. of the Hanford Facility RCRA Permit DW Portion, addresses Class 1 modifications as defined in Washington Administrative Code (WAC) 173-303-830(4)(a)(i)(A). This condition allows for quarterly notification of Class 1 modifications to be made to the State of Washington Department of Ecology (Ecology). These modifications are under implementation. A listing of these modifications is maintained in the Hanford Facility Operating Record. The Class 1 modifications are discussed as follows.

Enclosed for your notification is the Class 1 modification to the Hanford Facility RCRA Permit, DW Portion. Modifications this quarter included updating information in Part III and Part VI (Enclosure). The Part III Class 1 modifications pertain to the 616 Nonradioactive Dangerous Waste Storage Facility, 242-A Evaporator, Liquid Effluent Treatment Facility and 200 Area Effluent Treatment Facility, 305-B Storage Facility, and 325 Hazardous Waste Treatment Units. The Part VI Class 1 modifications pertain to the 300 Area Process Trenches. The Class 1 modifications are being made to ensure that all activities conducted are in compliance with the RCRA Permit DW Portion.

Should you have any questions regarding this information, please contact Ellen M. Mattlin, U.S. Department of Energy, Richland Operations Office, on (509) 376-2385; Susan M. Price,

Fluor Daniel Hanford, Inc., on (509) 376-1653; Harold T. Tilden II, Pacific Northwest National Laboratory, on (509) 376-0499; or Roger J. Landon, Bechtel Hanford, Inc., on (509) 372-9209.

Sincerely,



for James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division
DOE Richland Operations Office

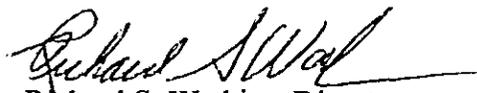
EAP:EMM



William D. Adair, Director
Environmental Protection
Responsible Party for
Fluor Daniel Hanford, Inc.



M. C. Hughes, Vice President
Operations
Bechtel Hanford, Inc.



Richard S. Watkins, Director
Environment, Safety, and Health
Pacific Northwest National Laboratory

Enclosure:

Quarterly Notification of Class 1
Modifications to the Hanford Facility
RCRA Permit, (DW Portion)
Quarter Ending June 30, 1998

cc w/encl:

Administrative Record H6-08
L. M. Johnson, BHI
R. J. Landon, BHI
J. R. Wilkinson, CTUIR
Donna L. Powaukee, NPT
S. M. Price, FDH
S. A. Thompson, FDH
H. T. Tilden, PNNL
Russell Jim, YIN

cc w/o encl:

W. D. Adair, FDH
M. C. Hughes, BHI
D. R. Sherwood, EPA
E. R. Skinnerland, Ecology
R. Watkins, PNNL

**Hanford Facility RCRA Permit Modification Notification Form
for
Part III, Chapter 1 and Attachment
616 Nonradioactive Dangerous Waste Storage Facility**

Page 1 of 2

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Page 2 of 2: Section 2.5.1, page 2-12, lines 13-30



Hanford Facility RCRA Permit Modification Notification Form

Unit: 616 Nonradioactive Dangerous Waste Storage Facility	Permit Part & Chapter: Part III, Chapter 1 and Attachment [Section 2.5.1]
---	---

Description of Modification:

Page 2-12, Section 2.5.1, lines 13-30:

2.5.1 Measures to Prevent Degradation of Groundwater Quality

Degradation of groundwater quality is prevented by storing waste containers inside an enclosed concrete building on self-contained, sealed concrete pads. In addition, the 616 NRDWSF accepts only those waste packages meeting appropriate U.S. Department of Transportation requirements. Containers are opened only in areas with spill containment. The 616 NRDWSF design and administrative controls significantly reduce the possibility of loss of waste to the ground and/or contamination of the groundwater. [In the vicinity of the 616 NRDWSF, the water table ranges from about 180 to 280 feet (54.9 to 85.3 meters) below the surface.]

Each loading pad trench drain plug is kept closed and secured when not in use. The 616 NRDWSF supervisor controls the trench key. When water (e.g., rainwater, snowmelt) from a known source has accumulated in either of the loading pad trenches, it is released to the ground via the french drain (Figure 2-6). While in the operational mode, before liquid is released, the following is performed.

Modification Class: ^{2,3} please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			

Relevant WAC 173-303-830, Appendix I Modification: **A.1.**

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions:
1. Administrative and information changes.

Submitted by Co-Operator: <i>Kenneth J. Sobole</i> for C. G. Mattsson	Reviewed by RL Program Office: <i>Helen E. Bilson</i> H. E. Bilson	Reviewed by Ecology: Laura J. Cusack
Date 6/16/98	Date 7/7/98	Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal dification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

**Part III, Chapter 1 and Attachment
616 Nonradioactive Dangerous Waste Storage Facility**

Page Changes

Chapter 2, Pages 2-11 and 2-12



1 loading represents a two-axle tractor [front axle loading of 8,000 pounds
2 (3,628.7 kilograms) and rear axle loading of 32,000 pounds (14,515 kilograms)]
3 plus a single-axle trailer with a 32,000-pound (14,515-kilograms) axle
4 loading.

5 6 7 **2.4.2 The 616 Nonradioactive Dangerous Waste Storage Facility Roadways**

8
9 The 616 NRDWSF is located approximately 200 feet (61 meters) north of
10 Route 3 (Figure 2-2). The access road from Route 3 to the 616 NRDWSF has a
11 graded gravel surface with an underlying aggregate base. This surface may be
12 paved to control dust. Drawing H-13-000014 in Appendix 2A shows the
13 616 NRDWSF access road configuration.

14 15 16 **2.4.3 Traffic Control Signs, Signals, and Procedures**

17
18 Standard traffic control signs are used throughout the Hanford Site
19 (e.g., hexagonal stop signs, triangular yield signs). The only traffic light
20 in the vicinity of the 616 NRDWSF is a flashing amber warning light in front
21 of the 609-A Fire Station on Route 3 (Figure 2-2). The light is switched to
22 red whenever an emergency requires a rapid response from the Hanford Fire
23 Department.

24
25 Speed limits are posted throughout the Hanford Site, and the maximum
26 posted speed is 55 miles (88.5 kilometers) per hour on major thoroughfares.
27 Inside the 200 East and 200 West Areas, posted speeds are reduced to a maximum
28 of 35 miles (56.3 kilometers) per hour, and held to speeds as low as 15 miles
29 (24.1 kilometers) per hour.

30 31 32 **2.5 PERFORMANCE STANDARDS [B-5]**

33
34 The 616 NRDWSF is designed to minimize the exposure of personnel to
35 dangerous waste and hazardous substances and to prevent dangerous waste and
36 hazardous substances from reaching the environment.

37
38 In addition, measures are taken to ensure that the 616 NRDWSF is
39 maintained and operated in a manner that prevents:

- 40
41 • Degradation of groundwater quality
- 42
43 • Degradation of air quality by open burning or other activities
- 44
45 • Degradation of surface water quality
- 46
47 • Destruction or impairment of flora or fauna outside of the 616 NRDWSF
- 48
49 • Excessive noise
- 50
51 • Negative aesthetic impacts
- 52

- 1 • Unstable hillsides or soils
- 2
- 3 • Use of processes that do not treat, detoxify, recycle, reclaim, and
- 4 recover waste material to the extent economically feasible
- 5
- 6 • Endangerment to the health of employees or the public near the
- 7 616 NRDWSF.
- 8

9 The measures taken to prevent each of the above negative effects from
10 occurring are described in the following sections.

11 2.5.1 Measures to Prevent Degradation of Groundwater Quality

12
13 Degradation of groundwater quality is prevented by storing waste
14 containers inside an enclosed concrete building on self-contained, sealed
15 concrete pads. In addition, the 616 NRDWSF accepts only those waste packages
16 meeting appropriate U.S. Department of Transportation requirements.
17 Containers are opened only in areas with spill containment. The 616 NRDWSF
18 design and administrative controls significantly reduce the possibility of
19 loss of waste to the ground and/or contamination of the groundwater. [In the
20 vicinity of the 616 NRDWSF, the water table ranges from about 180 to 280 feet
21 (54.9 to 85.3 meters) below the surface.]
22
23

24
25 Each loading pad trench drain plug is kept closed and secured when in
26 use. The 616 NRDWSF supervisor controls the trench key. When water (e.g.,
27 rainwater, snowmelt) from a known source has accumulated in either of the
28 loading pad trenches, it is released to the ground via the french drain
29 (Figure 2-6). While in the operational mode, before liquid is released, the
30 following is performed.

- 31 1. Liquid is visually inspected for signs of contamination and analyzed
32 to determine the presence of contaminants.
- 33
- 34 2. Daily inspection reports and the 616 NRDWSF logbook are reviewed to
35 identify any spills on the pad.
- 36
- 37 3. Cleanup reports are reviewed to verify that the pad is clean
38 (Section 2.7.2.1).
- 39
- 40 4. The 616 NRDWSF supervisor contacts solid waste management and reviews
41 steps 1 through 3 above. Solid waste management gives concurrence.
- 42
- 43 5. The 616 NRDWSF supervisor signs the logbook indicating that the above
44 steps have been completed and that the pad is clean
45 (Section 2.7.2.1). The solid waste management contact is noted in
46 the logbook.
- 47
- 48 6. The 616 NRDWSF supervisor or designee unlocks the drain plug.
- 49

**Hanford Facility RCRA Permit Modification Notification Forms
for
Part III, Chapter 4 and Attachment 34
Liquid Effluent Retention Facility and
200 Area Effluent Treatment Facility**

Page 1 of 5

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Page 3 of 5: Page T6-1.1, Table 6-1 (Sheet 1 of 2), line 12
Page 4 of 5: Page T6-1.1, Table 6-1 (Sheet 1 of 2), line 19
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Hanford Facility RCRA Permit Modification Notification Form

Unit: Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility	Permit Part & Chapter: Part III, Chapter 4 and Attachment 34 Section III.4.A, Appendix 8A
---	---

Description of Modification:

Appendix 8A: Remove and replace the Dangerous Waste Training Plan.

The Dangerous Waste Training Plan was reissued with a new internal number due to changes in the numbering of documents managed by Waste Management Federal Services of Hanford, Inc. The title was changed from "HNF-IP-0931, 200 Area Liquid Waste Processing Facilities Administrative Policies" to "WMH-331, 200 Area Liquid Waste Processing Facilities Administrative Procedures." The content of the new version is identical to the original Dangerous Waste Training Plan.

Modification Class: ²³ please check one of the Classes:	Class 1	Class ¹	Class 2	Class 3
	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
 1. Administrative and informational changes

Submitted by Co-Operator: <i>Kenneth J. Svoboda</i> 6/16/98 C.G. Mattsson Date	Reviewed by RL Program Office: <i>Helen A. Bilson</i> 7/7/98 H.E. Bilson Date	Reviewed by Ecology: _____ S. J. Skurla Date
--	---	--

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit: Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility	Permit Part & Chapter: Part III, Chapter 4 and Attachment 34 Section III.4.A, Chapter 6
---	---

Description of Modification: Page T6-1.1, Table 6-1 (Sheet 1 of 2), line 12:

12	Polishers	Inspect tanks and ancillary equipment for leaks. Inspect polishers for proper resin level and mixing.	Daily*	Process operator
----	-----------	---	--------	------------------

Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
- 1. Administrative and informational changes

Submitted by Co-Operator: <i>Kenneth G. Swoboda</i> for <u>C. G. Mattsson</u>	Reviewed by RL Program Office: <i>H. E. Bilson</i> <u>H. E. Bilson</u>	Reviewed by Ecology: <u>S. J. Skurla</u>
Date	Date	Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
Liquid Effluent Retention Facility and
200 Area Effluent Treatment Facility

Permit Part & Chapter:
Part III, Chapter 4 and Attachment 34
Section III.4.A, Chapter 6

Description of Modification:

Page T6-1.1, Table 6-1 (Sheet 1 of 2), line 19:

19 Thin film dryer	Inspect tanks and ancillary equipment for leaks (viewed through window camera). Note any unusual noises or vibration from the system pumps or blower.	Daily*	Process operator
--------------------	---	--------	------------------

Modification Class: ²³ please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
1. Administrative and informational changes

Submitted by Co-Operator: <i>Kenneth G. Stride</i> 6/16/98 for C. G. Mattsson	Reviewed by RL Program Office: <i>Helen E. Bilson</i> 7/7/98 H. E. Bilson	Reviewed by Ecology: S. J. Skurla
Date	Date	Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit: Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility		Permit Part & Chapter: Part III, Chapter 4 and Attachment 34 Section III.4.A, Appendix 8A			
<u>Description of Modification:</u>					
Page T6-1.2, Table 6-1 (Sheet 2 of 2), line 6:					
6	Sump tank system	Inspect sump trenches for unexpected liquids which indicate spills or leaks from process equipment leaks, spillage, and proper levels	Daily	Process operator	
Modification Class: ^{2 3}		Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:		X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.					
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u>					
B. General Permit Provisions					
I. Administrative and informational changes					
Submitted by Co-Operator:		Reviewed by RA Program Office:		Reviewed by Ecology:	
<i>C. G. Mattsson</i>		<i>H. E. Bilson</i>		<i>S. J. Skurla</i>	
Date		Date		Date	
9/30/98		7/7/98			

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Hanford Facility RCRA Permit

Part III, Chapter 4 and Attachment 34

**Liquid Effluent Retention Facility and
200 Area Effluent Treatment Facility**

Page Changes

Chapter 6

Appendix 8A (WMH-331, Dangerous Waste Training Plan)



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6.0 PROCEDURES TO PREVENT HAZARDS [F]

This chapter discusses security; inspection schedules; preparedness and prevention requirements; preventive procedures, structures, and equipment; and prevention of reaction of ignitable, reactive, and incompatible waste at LERF and ETF.

6.1 SECURITY [F-1]

The following sections describe the security measures, equipment, and warning signs used to control entry to LERF and ETF. Hanford Facility security measures are discussed in the General Information Portion (DOE/RL-91-28).

6.1.1 Security Procedures and Equipment [F-1a]

The following sections describe the 24-hour surveillance system, barriers, and warning signs used to provide security and to control access to LERF and ETF.

6.1.1.1 24-Hour Surveillance System

The entire Hanford Facility is a controlled-access area. For surveillance information, refer to General Information Portion (DOE/RL-91-28).

6.1.1.2 Barrier and Means to Control Entry

The LERF and ETF are protected by the 200 East Area fence. Visitors are required to be escorted. The LERF is surrounded in its entirety by a separate 2.1 meter chain link fence topped with 3 strands of barbed wire extended outward at a 45 degree angle (referred to as the operational security fence). Access to the LERF is gained through two locked vehicular gates off the perimeter road. Gate keys are retained at the 242-A Evaporator and ETF shift offices.

Persons desiring entry to ETF process area must notify the control room. These persons also must have the appropriate facility-specific training, as defined in the Dangerous Waste Training Plan (Appendix 8A). The ETF personnel monitor all persons entering ETF and notify the Hanford Patrol of any attempted unauthorized entry. Immediate response by protective force personnel maintains the necessary security at the LERF and ETF.

6.1.1.3 Warning Signs

Signs bearing the legend "DANGER--UNAUTHORIZED PERSONNEL KEEP OUT," or an equivalent legend, are posted around the perimeter of LERF and ETF. The signs are in English, legible from a distance of 7.6 meters, and are visible from all angles of approach. In addition to these signs, the fences around the 200 East Area are posted with signs, printed in English, warning against unauthorized entry. These signs also are visible from all angles of approach.

6.1.2 Waiver [F-1b]

Waiver of the security procedures and equipment requirements for LERF and ETF are not requested. Therefore, WAC 173-303-310(1)(a) and (b) are not applicable to LERF and ETF.

1 **6.2 INSPECTION PLAN [F-2]**
2

3 This section describes the method and schedule for inspections of LERF and ETF. The purpose of
4 inspections is to help ensure that situations do not exist that might cause or lead to the release of dangerous
5 and/or mixed waste that could pose a threat to human health and the environment. Abnormal conditions
6 identified by an inspection will be corrected on a schedule that prevents hazards to workers, the public, and
7 the environment.
8

9 **6.2.1 General Inspection Requirements [F-2a and F-2a(4)]**
10

11 The content and frequency of inspections are described in this section. Inspection records are retained at
12 the ETF, or other approved locations, for a minimum of 5 years.
13

14 In radioactive areas of the ETF, many inspections are performed remotely. Monitoring instruments are
15 connected to audible alarms and visual indicators track alarm status. The monitoring system provides
16 trending of selected monitoring data, graphics, and equipment summary displays.
17

18 A preventive maintenance recall system is employed to direct preventive maintenance activities at the
19 LERF and the ETF. Equipment requiring maintenance is checked as indicated by the maintenance history
20 and the manufacturer's recommendations. The preventive maintenance of certain equipment might not be
21 possible if the LERF or the ETF is in an operational mode. Thus, the preventive maintenance could be
22 performed slightly earlier or later than planned to minimize impact on operations.
23

24 Instrumentation at ETF is calibrated regularly to ensure accuracy and reliability. All process control
25 instrumentation is calibrated on a schedule depending on previous calibration experience. An instrument
26 calibration and recall system is employed to manage calibrations.
27

28 **6.2.1.1 Types of Problems**
29

30 Key components of the LERF inspection program include the following areas:
31

- 32 • Structural integrity of the basins
- 33 • Catch basin secondary containment system integrity
- 34 • Evidence of release from basins
- 35 • Safety, communications, and emergency equipment.
36

37 Key components of the ETF inspection program include the following areas:
38

- 39 • Condition of tanks and ancillary piping
- 40 • Condition of containers
- 41 • Condition of the process control equipment
- 42 • Condition of emergency equipment
- 43 • Condition of secondary containment.
44

45 Tables 6-1 and 6-2 provide a description of ETF items to be inspected.
46

47 **6.2.1.2 Frequency of Inspections [F-2a(3)]**
48

49 The frequency of inspections is based on the rate of possible deterioration of equipment and the probability of a
50 threat to human health or the environment.

1 While in operation, the LERF is inspected weekly. The LERF also is inspected for run-on, run-off, cover
2 integrity, and erosion problems after significant precipitation events. The ETF is inspected as indicated in
3 Tables 6-1 and 6-2.

4 5 **6.2.2 Specific Process Inspection Requirements [F-2d]**

6
7 The following sections describe the specific process inspections performed at LERF and ETF.

8 9 **6.2.2.1 Container Inspections [F-2d(1)]**

10
11 Containers are used at the ETF to store solidified secondary waste, such as the powder waste from the thin film
12 dryer and maintenance and operations waste. When containers are being held in the container storage area, the
13 following inspection schedule is maintained:

- 14
15 • Daily visual inspection of container storage area for leaks, spills, accumulated liquids, and open or
16 improperly sealed containers
- 17
18 • Weekly visual inspection of container labels to ensure labels are not obscured, removed, or otherwise
19 unreadable
- 20
21 • Weekly visual inspection for deterioration of containers, containment systems, or cracks in protective
22 coating or foundations caused by corrosion, mishandling, or other factors.

23
24 Following the inspections, an inspection datasheet is signed and dated by the inspector and supervisor.

25 26 **6.2.2.2 Tank Inspections [F-2d(2)]**

27
28 A description of the tank systems and ancillary equipment at the ETF is given in Chapter 4.0. Inspections and
29 frequencies are given in Tables 6-1 and 6-2. This section includes a brief discussion of the inspections.

30
31 **6.2.2.2.1 Overfill Protection.** Tanks that have the possibility of being overfilled have level
32 instrumentation that alarms before the tanks reach overflow. High tank level alarms annunciate in the
33 control room, allowing operating personnel to take immediate action to stop the vessels from overfilling.
34 These alarms are monitored continuously in the control room during solution transfers.

35
36 **6.2.2.2.2 Visual Inspections.** Visual inspections of tanks and secondary containments are performed to
37 check for leaks, signs of corrosion or damage, and malfunctioning equipment. Inspections are performed
38 on tanks and the secondary containment within the ETF and the surge tank and verification tank and
39 associated secondary containment.

40
41 **6.2.2.2.3 Secondary Containment Leak Detectors.** The surge tank and verification tank secondary
42 containment systems have sloped floors that drain solution to sumps equipped with leak detectors that
43 alarms in the control room. These alarms are monitored continuously in the control room. If an alarm is
44 activated, further investigation is performed to determine if the source is a tank leak or other solution (i.e.,
45 precipitation).

46
47 **6.2.2.2.4 Integrity Assessments.** The initial integrity assessment was issued in 1995 (Chapter 4.0).
48 Consistent with the recommendations of the integrity assessment, a periodic integrity assessment program
49 was developed for the ETF tanks and is discussed in detail in section 4.4.2 of Chapter 4.0.

50

1 **6.2.2.2.5 Effluent Treatment Facility Piping.** The ETF employs an extensive piping system. During
2 inspections at the ETF, any aboveground piping is inspected visually for signs of leakage and for general
3 structural integrity. During the visual inspection, particular attention is paid to valves and fittings for signs
4 of cracking, deformation, and leakage.

5
6 **6.2.2.3 Surface Impoundments [F-2d(6)] and Condition Assessment [F-2d(6)(a)]**

7
8 The following describes the surface impoundment inspections performed at LERF.

9
10 **6.2.2.3.1 Overtopping Control [F-2d(6)(a)(1)].** Under current operating conditions, 1.34 meters of
11 freeboard is maintained at each LERF basin, which corresponds to a normal operating level of 6.1 meters,
12 or 24.6 million liters. Level indicators at each basin are monitored to confirm that this level is not
13 exceeded.

14
15 Before an aqueous waste is transferred into a basin, administrative controls are implemented to ensure
16 overtopping will not occur during the transfer. The volume of feed to be transferred is compared to the
17 available volume in the receiving basin. The transfer is not initiated unless there is sufficient volume
18 available in the receiving basin or a cut-off level is established. The transfer into the basin would be
19 stopped when this cut-off level is reached.

20
21 The LERF basins also are provided with floating very low-density polyethylene covers that are designed
22 and constructed to prevent overtopping by the introduction of precipitation and dust into the basins.
23 Overtopping and flow control also are discussed in Chapter 4.0.

24
25 **6.2.2.3.2 Impoundment Contents [F-2d(6)(a)(2)].** The LERF basins are inspected weekly to assess
26 whether the contents are escaping from a basin. Level indicators are inspected weekly to check for
27 unaccountable change in the level of the basins.

28
29 **6.2.2.3.3 Leak Detection [F-2d(6)(a)(3)].** The leachate detection, collection and removal system is
30 described in Chapter 4.0. The leachate collection sump pump is activated automatically when the liquid
31 level in the leachate sump reaches a preset level. A flowmeter and totalizer measure the amount of leachate
32 removed. An inspection is performed weekly where the totalizer reading and basin level reading are used to
33 determine the leak rate per wetted surface area. The leak rate is compared to previous rates to see if
34 leakage has increased.

35
36 The LERF employs a double-walled transfer piping between 242-A Evaporator and LERF and between
37 LERF and ETF. The WAC 173-303-650 regulations do not require a discussion of piping for surface
38 impoundments. However, for the purposes of comprehensive coverage of the LERF, inspections and
39 integrity assessments are performed on the piping system. Aqueous waste (e.g., process condensate) is
40 transferred from the 242-A Evaporator to the LERF via a buried pipeline. Likewise, aqueous waste is
41 transferred to the ETF via buried pipelines. At the LERF dikes, aboveground piping serves to transfer
42 waste from one basin to another.

43
44 The buried pipelines are 'inspected' continuously during transfers by a leak detection system (Chapter 4.0).
45 The alarms on the leak detection system are monitored in the 242-A Evaporator and ETF control rooms.
46 The transfer lines from the LERF to the ETF also can be inspected during transfers by opening the
47 secondary containment drain lines at the surge tank to inspect for leakage. During the routine inspections
48 at LERF, the aboveground piping system is inspected for signs of leakage and for general structural
49 integrity. During the visual inspection, particular attention is paid to valves and fittings for signs of
50 cracking, deformation, and leakage.

1
2 **6.2.2.3.4 Dike Erosion [F-2d(6)(a)(4)].** The LERF basins and dikes are visually inspected weekly and
3 after storms for severe erosion or other signs of deterioration in the dikes from precipitation, wind,
4 burrowing mammals, or vegetation.

5
6 **6.2.2.3.5 Structural Integrity [F-2d(6)(b)].** A written certification attesting to the structural integrity of
7 the basin dikes, signed by a qualified, registered professional engineer, is provided in Chapter 4.0.

8
9 **6.2.2.3.6 Container Inspection [F-2b(1)].** Normal operation of the LERF does not involve the storage of
10 dangerous waste in containers. Therefore, the inspection requirements of this section normally are not
11 applicable to the LERF. Any containerized RCRA-regulated waste that might be generated at LERF will
12 be brought to the ETF and managed in accordance with WAC 173-303-200(1) and is discussed in Section
13 6.2.2.1.

14 15 **6.2.3 Inspection Log [F-2b and 2c]**

16
17 Observations made and deficiencies noted during an inspection are recorded on inspection log sheets (also
18 called turnover sheets). On completion, the log sheet includes the inspector's printed name, signature, date,
19 and time; the log sheet is submitted for review and approval by ETF/LERF management or their designee,
20 as required by operating procedures. Once approved, the log sheet is kept in LERF and ETF files.
21 Inspection records are retained at the ETF, or other approved locations, for a minimum of 5 years. The
22 inspection records are used to help determine any necessary corrective actions. Problems identified during
23 the inspections are prioritized and addressed in a timely fashion to mitigate health risks to workers,
24 maintain integrity of the TSD units, and prevent hazards to public health and the environment.

25
26 If while performing an inspection, a leak or spill is discovered, facility management responds per the
27 building emergency plan (Appendix 7A). Action is taken to stop the leak and determine the cause. The
28 waste is removed from the secondary containment in a timely manner that prevents harm to human health
29 and the environment.

30 31 **6.2.4 Storage of Ignitable or Reactive Wastes [F-2d(3)]**

32
33 The LERF could receive an aqueous waste that is designated reactive or ignitable. Any aqueous waste
34 exhibiting these characteristics is managed (e.g., through blending in LERF) such that the waste no longer
35 exhibits the reactive or ignitable characteristics.

36
37 Though unlikely, the ETF secondary waste might have the characteristics of being reactive or ignitable.
38 The Hanford Fire Department performs annual fire inspections of the ETF using a checklist developed
39 specifically for facilities that handle dangerous and/or mixed waste.

40 41 **6.3 PREPAREDNESS AND PREVENTION REQUIREMENTS [F-3]**

42
43 The following sections document the preparedness and prevention measures taken at LERF and ETF.

44 45 **6.3.1 Equipment Requirements [F-3a]**

46
47 The following sections describe the internal and external communications systems and the emergency
48 equipment required.

1 **6.3.1.1 Internal Communications**

2
3 When operators are present at the LERF, the operators carry mobile (hand-held) two-way radios to
4 maintain contact with 242-A Evaporator and ETF personnel. The operators at LERF are informed of
5 emergency situations (e.g., building and/or area evacuations, take-cover events, high airborne
6 contamination, fire, and/or explosion), and are provided with emergency instructions by several systems.
7 These systems include the mobile two-way radios, and the telephone in the LERF instrument building.

8
9 The ETF is equipped with an internal communication system to provide immediate emergency instruction
10 to personnel. The onsite communication system at the ETF includes telephones, mobile two-way radios, a
11 public address system, and alarm systems. The telephone and radio systems provide for intraplant
12 communication as well as external communication. Provisions are made to appropriately respond to
13 various emergencies, including the following alarm-activated emergency situations: building evacuations,
14 fire and/or explosion, loss of essential services, loss of ventilation, radioactive discharges, and high
15 airborne contamination. Chapter 7.0 provides additional information on the response activities.

16
17 Immediate emergency instruction to personnel is provided by a public address system via speaker horns and
18 ceiling-mounted speakers located throughout the building. The public address system is coupled to
19 building telephone systems to provide telephone accessed voice paging. The ETF alarms are annunciated
20 via elements of the public address system. The general telephone system, which carries various
21 communication signals (e.g., telephone, crash alarm), is linked to the Hanford Site integrated voice data
22 telecommunications system.

23
24 **6.3.1.2 External Communications [F-3a(2)]**

25
26 The LERF and its operators are equipped with devices for summoning emergency assistance from the
27 Hanford Fire Department, the Hazardous Materials Response Team, and/or local emergency response
28 teams, as necessary. External communication is made by either a telephone communication system or
29 mobile two-way radios. The LERF telephone is available in the instrumentation building. Personnel
30 assigned to emergency response organizations are reached in the following ways:

- 31
- 32 • Telephone number 911--is the contact point for the Hanford Site; on notification, the Hanford Patrol
33 Operations Center notifies and/or dispatches required emergency responders
 - 34
 - 35 • Telephone number 373-3800--single point of contact for the emergency duty officer; this number can
36 be dialed from any Hanford Site telephone
 - 37
 - 38 • Two-way radio system--consists of hand-held; the system accesses the Hanford Site emergency
39 network and can summon the Hanford Fire Department, Hanford Patrol, and/or any other assistance
40 needed to deal with emergencies.
 - 41
 - 42 • The ETF is equipped with devices for summoning emergency assistance from the Hanford Fire
43 Department and/or local emergency response teams as necessary. External communication is made via
44 a telephone communication system or two-way radios.
 - 45

46 Telephones are provided at numerous locations throughout the ETF. In addition, the following external
47 communication systems are available for notifying persons assigned to emergency response organizations:

- 48
- 49 • Fire alarm pull boxes and fire sprinkler flow monitoring devices-- connected to a system monitored
50 around the clock by the Hanford Fire Department

- 1
- 2 • Telephone number 911--contact point for the Hanford Site; on notification, the Hanford Patrol
- 3 Operations Center notifies and/or dispatches required emergency responders
- 4
- 5 • Telephone number 373-3800--single point of contact for the emergency duty officer; this number can
- 6 be dialed from any Hanford Facility telephone
- 7
- 8 • Crash alarm telephone system--consists of selected telephones that automatically are disassociated
- 9 from the regular system and connected to control stations
- 10
- 11 • Priority message system (Management Bulletin)--a network of telefax machines used to disseminate
- 12 information to personnel
- 13
- 14 • The DOE-RL radio system--radio systems and frequencies available for emergency communications.
- 15

16 6.3.1.3 Emergency Equipment [F-3a(3)]

17 The LERF and ETF rely primarily on the Hanford Fire Department to respond to fires and other
18 emergencies. The Hanford Fire Department is capable of providing rapid response to fires within the 200
19 East Area. All LERF and ETF operators are familiar with the LERF and ETF contingency plans
20 (Chapter 7.0) and are trained in the use of emergency pumping, fire, and communications equipment. The
21 Hanford Site maintains a sufficient inventory of heavy equipment (i.e., bulldozers, cranes, road graders) for
22 emergency response.

23
24
25 Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment
26 are available at various locations in the ETF.

27
28 Fire control equipment is available at the ETF and could include the following:

- 29
- 30 • Fire extinguishers (all-utility use, dry chemical), good for use on small fires
- 31 • Automatic fire suppression systems installed in the ETF control room and electrical room
- 32 • Fire alarm pull boxes
- 33 • A water spray system is installed in the operating and administrative portions of the ETF.
- 34

35 Respirators, hazardous material protective gear, and special work procedure clothing for ETF personnel
36 are kept in the change room at the ETF. Safety showers are located in convenient locations in the ETF.
37 Portable emergency eye washes are used at the ETF. Water for these devices is supplied from the ETF
38 sanitary water system.

39 40 6.3.1.4 Water for Fire Control [F-3a(4)]

41
42 A water main is not provided to the LERF. Water for fire control is supplied by the Hanford Fire
43 Department trucks for fires requiring high water volume and pressure. Each fire station normally has a
44 truck equipped with a hydraulically operated aerial ladder, and one pumper (backup fire engine, without a
45 boom, that is used if the aerial ladder is inoperable). Fire engines have a pumping capacity of at least
46 5,600 liters of water per minute. Other fire protection equipment uses chemicals rather than water as an
47 extinguishing media.

48
49 The ETF is serviced by two 12-inch raw water lines that are tied into the 200 East Area raw water
50 distribution grid. These lines provide a looped configuration that supplies two independent sources of raw

1 water for fire protection and raw water uses. Connections from the ETF raw water system supply fire
2 hydrants and the wet-pipe sprinkler system.

3
4 In the event that water pressure is lost, the Hanford Fire Department is equipped with fire engines to
5 provide needed water.

6 7 **6.3.2 Aisle Space Requirement [F-3b]**

8
9 The operation of the LERF does not involve aisle space. Nevertheless, the LERF and the individual basins
10 are easily accessible to emergency response personnel and vehicles. A 6.1-meter-wide service road runs
11 along the base of the basin area on the east, south, and west sides within the operational security fence.

12
13 Aisle spacing at ETF is sufficient to allow the movement of personnel and fire protection equipment in and
14 around the containers. This storage arrangement also meets the requirements of the National Fire
15 Protection Association and the Life Safety Code (NFPA 1996) for the protection of personnel and the
16 environment. A minimum 0.76-meter aisle space is maintained between rows of containers as required by
17 WAC 173-303-630(5)(c).

18 19 **6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [F-4]**

20
21 The following sections describe preventive procedures, structures, and equipment.

22 23 **6.4.1 Unloading Operations, Spill Prevention, and Control [F-4a]**

24
25 Underground pipelines that transfer aqueous waste to and from the LERF are encased in a secondary pipe.
26 If a leak is detected in a pipeline, flow in the pipeline will be stopped and the cause of the leak investigated
27 and remediated.

28
29 If it is required to transfer aqueous waste from one LERF basin to another, submersible pumps are located
30 in risers at the northwest corner of a basin. Valves are closed or opened depending on the direction of the
31 fluid transfer. Pumps are started, providing a cumulative flow of between 2,000 and 3,000 liters per
32 minute into another basin.

33
34 The ETF Load-In Station is monitored continuously during tank-filling operations and filling is stopped
35 immediately if leaks occur. Care is taken to ensure that even minor leaks are cleaned up immediately and
36 disposed of in accordance with approved management procedures. Any spill that is determined to be a
37 dangerous waste will be managed according to the requirements of WAC 173-303.

38 39 **6.4.2 Run-Off [F-4b]**

40
41 The LERF is constructed and operated to ensure that all aqueous waste is contained within the basins. The
42 basins are designed and operated to prevent overtopping (Section 6.2.2.3.1). Furthermore, the basins are
43 provided with very low-density polyethylene floating covers to prevent the introduction of precipitation into
44 the basins. The basins also are graded to ensure that all precipitation outside the basins is directed away
45 from the surface impoundments.

46
47 The basins are constructed so that the top of the basin dikes are approximately 3 meters abovegrade. The
48 exterior side slopes of the basins have a 2.25 (horizontal) to 1 (vertical) slope. Run-on of precipitation to
49 the basins from the surrounding area is not possible because the surrounding area slopes away from the
50 LERF.

1
2 Dangerous waste and hazardous chemical handling areas at the ETF are designed to contain spills, leaks,
3 and wash water, thereby preventing run-off and subsequent releases. All dangerous and/or mixed waste
4 loading and unloading areas are provided with secondary containment structures as described in
5 Chapter 4.0.

6 7 **6.4.3 Water Supplies [F-4c]**

8
9 The LERF uses operating practices, structures, and equipment to prevent the contamination of natural
10 water supplies (i.e., groundwater and surface water). The LERF is monitored closely during operation to
11 detect abnormal conditions (e.g., leaks), and regularly inspected to detect equipment and structural
12 deteriorations that could allow possible water supply contamination. The basins are provided with a
13 leachate collection system that is designed to contain any leachate generated. These systems, in conjunction
14 with the double-composite liner system and underlying low permeable clay liner, ensure that should a
15 release occur, the release will be fully contained within the basin configuration and, therefore, water
16 supplies will be protected. Appendix 7A provides information on procedures that are implemented if a
17 release is detected at the LERF.

18
19 There are no drinking water wells near the ETF. Therefore, a release would not immediately contaminate
20 drinking water supplies. The ETF uses operating practices, structures, and equipment to prevent the
21 contamination of natural water supplies (i.e., groundwater and surface water). The ETF is monitored
22 during operation to detect abnormal conditions, and is inspected regularly to detect equipment and
23 structural deteriorations that could allow spills to the environment. Areas in contact with dangerous
24 and/or mixed waste are monitored continuously during operation through a series of level and pressure
25 indicators, leak detection alarms, equipment failure alarms, and control panel readouts. In addition, the
26 ETF is inspected regularly for the presence of leaks or other offnormal conditions wherever possible (in all
27 areas that can be safely entered).

28
29 In addition to detailed operating practices, structures and equipment are used at the ETF to prevent
30 contamination of water supplies. The structures and equipment designed to prevent contamination of water
31 supplies are the same as the structures and equipment used to prevent run-off from dangerous and/or mixed
32 waste handling areas.

33 34 **6.4.4 Equipment and Power Failure [F-4d]**

35
36 The storage function of the LERF is not affected by loss of power and a temporary loss of power would not
37 pose a threat to the environment. Loss of electrical power would not cause the storage of the waste to be
38 jeopardized. For process condensate transferred from the 242-A Evaporator, appropriate valving
39 procedures are followed to ensure a smooth restart of the flow to the LERF in the event of a power failure
40 at the 242-A Evaporator. Pump equipment failure is addressed by operations personnel at the
41 242-A Evaporator.

42
43 The ETF does not have a standby power source. Power to selected lighting, computers, and process
44 controls is configured with an uninterruptible power supply. During partial loss of normal power, the
45 effected pumps and subsystems will be shut down. Complete loss of power to the ETF shuts down the
46 entire ETF except for the instruments in the control room connected to the uninterruptible power supply.
47 Redundant pumps allow the process to continue to operate when only one component is out of service.

48
49 When power at the ETF is lost, the valves assume a fail-safe position to allow the process to remain in a
50 safe shutdown mode until restoration of power. This action allows the operators to perform equipment

1 surveys during shutdown and to confirm that there are no safety issues because the ETF is shut down.
2 Because a power failure would also shutoff flow into the ETF, there will not be any increase in volume in
3 any of the holdup basins, tanks, or other systems.
4

5 A combination of reliability, redundancy, maintenance, and repair features are used in the ETF equipment
6 and systems to minimize random failure of equipment. For crucial systems such as ventilation filters,
7 redundant trains are provided to mitigate equipment and system failure. Spare parts are maintained for
8 essential production and safety equipment.
9

10 **6.4.5 Personnel Exposure [F-4e]**

11
12 At the LERF and ETF, operating practices, structures, and equipment are used to prevent undue exposure
13 of personnel to dangerous and/or mixed waste. Protective clothing and equipment are used by all personnel
14 handling waste. All operations are conducted so that exposure to dangerous and/or mixed waste, and
15 hazardous and radioactive materials are maintained ALARA.
16

17 Protective clothing and equipment are prescribed for personnel handling chemicals or dangerous waste.
18 Before the start of any operation that could expose personnel to the risk of injury or illness, a review of the
19 operation is performed to ensure that the nature of hazards that might be encountered is considered and
20 appropriate protective gear is selected. Personnel are instructed to wear personal protective equipment in
21 accordance with training, posting, and instructions.
22

23 A change trailer at LERF is located between basins 42 and 43. In addition, the change trailer has an
24 operations office for working with procedures. Exits within the change trailer are clearly marked. A
25 storage building is located within the perimeter fence, northwest of the basins. The LERF storage building
26 also is provided with separate storage areas for clean and contaminated equipment. A decontamination
27 shower and decontamination building is located at the 272-AW Building, approximately 1.6 kilometers
28 from the LERF or at the ETF.
29

30 The ETF has eyewash stations and safety showers in convenient locations for use by personnel. The
31 following structures and equipment were incorporated into the ETF design to minimize personnel exposure.
32

- 33 • Offices, control room, clean- and soiled-clothes storage areas, change rooms, and the lunchroom are
34 situated to minimize casual exposure of personnel.
35
- 36 • Building exit pathways are located to provide rapid egress in emergency evacuations.
37
- 38 • Emergency lighting devices are located strategically throughout the ETF.
39
- 40 • Audio and/or visual alarms are provided for all room air samplers, area alarms, and liquid monitors.
41 Visual readouts for these alarm systems are located in less contaminated areas to minimize exposure to
42 personnel.
43
- 44 • Areas for decontaminating and maintaining equipment are provided in contaminated areas to limit the
45 spread of contamination to uncontaminated areas such as the control room.
46
- 47 • Instrument interlock systems are provided that automatically return process operations to a safe
48 condition if an unsafe condition should occur.
49

- 1 • The ETF ventilation systems are designed to provide air flow from uncontaminated zones to
2 progressively more contaminated zones.
3

4 Whenever possible, exposures to hazards are controlled by accepted engineering and/or administrative
5 controls. Protective gear is used where effective engineering or administrative controls are not feasible.
6

7 **6.5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND**
8 **INCOMPATIBLE WASTE [F-5 through F-5b]**
9

10 Typically aqueous waste managed at the LERF or ETF does not display the characteristics of reactivity or
11 ignitability. Any aqueous waste streams exhibiting these characteristics are blended or mixed at LERF to a
12 concentration where the waste no longer exhibits reactive or ignitable characteristics.
13

14 No incompatible aqueous waste is expected to be stored or treated at the LERF or ETF (Chapter 3.0).
15 Therefore, the requirements of WAC 173-303-806(4)(a) are not applicable.



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Table 6-1. Visual Inspection Schedule for the ETF.
(sheet 1 of 2)

Item	Inspection	Frequency	Inspected by
Main Treatment Train			
Surge tank system	Inspect area for leaks. Note any unusual noises or vibration from the system pumps. Inspect secondary containment system for signs of deterioration.	Daily	Process operator
Rough filter	Inspect for leaks.	Daily*	Process operator
Ultraviolet oxidation system	Inspect module for leaks. Inspect peroxide storage tank, ancillary equipment for leaks.	Daily*	Process operator
pH adjustment tank	Inspect tank and ancillary equipment for leaks.	Daily*	Process operator
H ₂ O ₂ decomposer	Inspect tank and ancillary equipment for leaks.	Daily*	Process operator
Fine filter	Inspect module for leaks.	Daily*	Process operator
Degasification system	Inspect module for leaks. Note any unusual noises or vibration from the degasification blower.	Daily*	Process operator
Reverse osmosis system	Inspect tanks and ancillary equipment for leaks. Note any unusual noises or vibration from the system pumps.	Daily*	Process operator
Polishers	Inspect tanks and ancillary equipment for leaks.	Daily*	Process operator
Effluent pH adjustment tank	Inspect tank and ancillary equipment for leaks.	Daily*	Process operator
Verification tanks	Inspect tanks and ancillary equipment for leaks. Note any unusual noises or vibration from the system pumps. Inspect secondary containment system for signs of deterioration.	Daily	Process operator
Secondary Treatment Train			
Secondary waste receiving tank	Inspect tank and ancillary equipment for leaks.	Daily	Process operator
ETF evaporator	Inspect tank and equipment for leaks. Note any unusual noises or vibration from the system pumps or compressor.	Daily*	Process operator
Concentrate tank	Inspect tank and ancillary equipment for leaks.	Daily*	Process operator
Thin film dryer	Inspect tanks and ancillary equipment for leaks (viewed through camera). Note any unusual noises or vibration from the system pumps or blower.	Daily*	Process operator
Container handling	Inspect area for spills, leaks, accumulated liquids.	Daily	Process operator
Container handling	Inspect for deterioration of containers and secondary containment, including corrosion and cracks in secondary containment foundation and coating. Inspect container labels to ensure that they are readable.	Weekly	Process operator

Table 6-1. Visual Inspection Schedule for the ETF.
(sheet 1 of 2)

Item	Inspection	Frequency	Inspected by
Resin dewatering	Inspect module for leaks. Note any unusual noises or vibration from the system pumps or blower.	Daily*	Process operator
Support Systems			
Vessel ventilation system	Inspect filters (HEPA and pre-filters), check vessel off-gas pressures, system flow, and discharge temperatures.	Daily	Process operator
Sump tank system	Inspect sump trenches for unexpected liquids which indicate spills or leaks from process equipment.	Daily	Process operator
Safety Systems			
Eye wash stations	Check status; check for adequate pressure.	Monthly	Process operator
Safety showers	Check status; check for adequate pressure.	Monthly	Process operator
Emergency Systems			
Fire extinguishers	Check for adequate charge.	Monthly	Process operator
Emergency lighting	Test operability.	Monthly	Process operator
Processing Area			
Uninterruptible power supply	Check output voltage and visually inspect battery pack for corrosion and leakage. Check indicator lights for fault conditions.	Annually	Electrician/ process operator

* Stated inspection frequency to be performed only during ETF operations.

HEPA – High efficiency particulate air

Table 6-2. Inspection Plan for Instrumentation Monitoring. (sheet 1 of 2)

Item	Inspection	Frequency	Inspected by
Main Treatment Train			
Leak detector LAH-20B009	Monitor for leakage in the surge tank drainage sump.	Continuously	Computer Process Operator
Level alarm LAH-60A013	Monitor surge tank level to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60C-111	Monitor liquid levels in the pH adjustment tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60F-101	Monitor liquid levels in the first RO feed tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60F-201	Monitor liquid levels in the second RO feed tank to prevent overflow.	Continuously	Computer Process Operator
Level alarms LAHL-60F-211	Monitor liquid levels in the effluent pH adjustment tank to prevent overflow.	Continuously	Computer Process Operator
Level transmitter LAHX-60H001A/B/C	Monitor liquid level in verification tanks to prevent overflow.	Continuously	Computer Process Operator
Leak detector LAH-20B010	Monitor for leakage in the verification tank drainage sump.	Continuously	Computer Process Operator
Secondary Treatment Train			
Level alarm LAHL-60I-001A/B	Monitor liquid levels in secondary waste receiver tanks A and B to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60J-001A/B	Monitor liquid levels in concentrate tanks A and B to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60I-107	Monitor liquid levels in the evaporator tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60J-036	Monitor liquid levels in the spray condenser tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAHL-60I-108	Monitor liquid levels in the distillate flash tank to prevent overflow.	Continuously	Computer Process Operator
Level alarm LAH-60I-119	Monitor liquid levels in the entrainment separator tank to prevent overflow.	Continuously	Computer Process Operator
Level transmitter LAH-20B001	Monitor liquid level in sump tank No. 1 to prevent overflow.	Continuously	Computer Process Operator
Level transmitter LAH-20B002	Monitor liquid level in sump tank No. 2 to prevent overflow.	Continuously	Computer Process Operator

1

Table 6-2. Inspection Plan for Instrumentation Monitoring. (sheet 1 of 2)

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8

Item	Inspection	Frequency	Inspected by
Leak detector LAH-20B003	Monitor for leakage to sump No. 1.	Continuously*	Computer Process Operator
Leak detector LAH-20B005	Monitor for leakage to sump No. 2.	Continuously*	Computer Process Operator
Leak detector	Monitor for leakage from pipeline between ETF and load-in station.	Continuously*	Computer Process Operator
Leak detector	Monitor for leakage from pipeline between ETF and LERF.	Continuously*	Computer Process Operator
Leak detector	Monitor for leakage from pipeline between LERF and the 242-A Evaporator.	Continuously*	Computer Process Operator

* In the event of a malfunction of one of the electronic leak detectors, daily visual inspections will be performed while the facilities are in operation.

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APPENDIX 8A

TRAINING PLAN

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Dangerous Waste Training Plan

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Dangerous Waste Training Plan

1.0 PURPOSE

This document outlines the Dangerous Waste Training Program (DWTP) for the 200 Area Liquid Waste Processing Facilities (LWPF) organization. The 200 Area Effluent Treatment Facility (ETF), Liquid Effluent Retention Facility (LERF), and 242-A Evaporator are under the control of LWPF and each is permitted as a Treatment, Storage, or Disposal (TSD) unit on the Hanford Facility.

The program is designed for compliance with the requirements of Washington Administrative Code (WAC) 173-303-330 and Title 40 Code of Federal Regulations (CFR) 264.16 for the development of a written dangerous waste training program. These training requirements were determined after assessment of employee duties and responsibilities.

2.0 SCOPE

This Dangerous Waste Training Plan applies to personnel who perform work at, or in support of, the 200 Area Effluent Treatment Facility (ETF), Liquid Effluent Retention Facility (LERF) and the 242-A Evaporator. This Dangerous Waste Training Plan defines the minimum required training for employees to perform tasks associated with dangerous waste(s).

The LWPF training program is designed to ensure that employees who operate and maintain LWPF systems/equipment receive the training they require to safely operate and maintain LWPF systems/equipment in a effective and environmentally sound manner. In addition to preparing employees to operate and maintain LWPF equipment/systems under normal conditions, this training program ensures that employees are prepared to respond in a prompt and effective manner should off-normal or emergency conditions occur.

3.0 DEFINITION

NONE

4.0 RESPONSIBILITIES

4.1 Training Manager

The LWPF Facility Manager has overall responsibility for all training required by Washington Administrative Code (WAC) 173-303-330 and Condition II.C of the Hanford RCRA Permit (DW portion) at LWPF. To meet the training requirements in WAC 173-303-330(1)(a), the training director position is described in Chapter 8.0 of DOE/RL-91-28, *Hanford Facility Dangerous Waste Permit Application, General Information Portion*.

4.2 Facility Management (including Team Leaders)

Develop and administer a comprehensive training program for employees.

Ensure annual training on dangerous waste(s) is provided to affected employees.

Ensure all applicable training requirements are met.

4.3 Operations Management

Ensure Operations personnel are trained.

Ensure required certifications are maintained.

4.4 Training Personnel

Maintain knowledge in the area of waste management, including updates.

Re-evaluate training courses at least every year to ensure waste training requirements continue to be met.

4.5 Employees

Handle dangerous waste(s) in accordance with applicable regulations.

Minimize personal exposure to all dangerous wastes.

Inform management of problems concerning dangerous waste handling / storage / disposal.

5.0 PROCEDURE

The LWPF Dangerous Waste Training Program is implemented based on training requirements related to job responsibilities. Personnel affected by the Dangerous Waste Training Program complete those portions of the training curriculum delineated in the company level environmental compliance manuals, and tracked by the (computerized) Training Matrix (TMX), prior to performing unsupervised work in a facility.

Personnel new to LWPF, or changing positions within LWPF, complete the required dangerous waste training within six months of the assignment. Personnel who have not completed required training are permitted to perform work requiring handling dangerous wastes at LWPF only under the supervision of a trained employee. LWPF operations management is responsible for ensuring that all operations personnel are trained and required certifications are maintained.

5.1 Identification of Training

The required training is specified by the employee's specific job duties as determined by a job analysis or management assessment. Training requirements for individual operations personnel can be found in TMX. Required training is based on worker positions/job titles described in this plan and listed on Attachment 3, Required LWPF Training.

5.2 Dangerous Waste Worker Positions

Employee duties have been categorized within six worker positions. In the event personnel duties and responsibilities overlap and fall into more than one position, the employee will complete the training requirements for each position. The six worker positions are: 1) All Employee, 2) General Worker, 3) Advanced General Worker, 4) General Manager, 5) General Shipper, and 6) Waste Designator.

The level of training is determined by the duties associated with each worker position. The description of job duties for each position can be matched to individual job titles held by employees at the Hanford Site. The determining factor for placing a specific worker within any of the worker positions are the duties of the worker's job.

5.3 Job Title and Descriptions

Each employee is assigned a job title and job description. The job descriptions include requisite skills, work experience, education, and other qualifications, and a brief list of duties and/or responsibilities for each position. Work experience, education, and other qualifications required for each position are maintained by the company's human resources department.

In the following sections, brief job titles and job descriptions of employees associated with dangerous waste management at LWPF are listed within the appropriate position.

1) **All Employees**

Employees included in this position are those personnel who do not fall into one of the other five positions and have no duties or responsibilities directly associated with dangerous waste. The types of personnel in this position typically include Secretaries, Clerks, and Oversight (example: Quality Assurance) Personnel.

Most non-Hanford Facility Personnel will be categorized as All Employees since they generally tour, provide oversight, or are brought on site for interviews. Other non-Hanford Facility Personnel who gain access to the LWPF facilities to complete work in controlled areas but do not become involved in the management of dangerous or mixed waste will be categorized as All Employees.

2) **General Worker**

Facility or support personnel with limited dangerous waste management duties, which include general activities associated with the generation of waste, facility maintenance or modification, are categorized as General Workers. Job duties and responsibilities for general workers are not unit specific.

Hanford Facility personnel categorized as General Workers may be assigned duties and responsibilities for:

Placing waste generated into pre-approved containers and filling out log sheets where applicable.

Completing radiological surveys of dangerous or mixed wastes.

The loading of packaged containers onto trucks or movement of containers.

Responding to a spill or release of known contents where the duties and responsibilities are limited to containing the spill/release, returning the drum to an upright position, and placing the known spilled material or waste into a pre-approved container.

Applying advanced container markings or labels based on direction from an Advanced General Worker, General Manager, or General Shipper.

Support organizations management and technical support personnel assist management in the safe, effective, efficient, and environmentally acceptable operation and maintenance of the facilities. Personnel who function as general workers may include, but are not limited to: maintenance personnel, radiological control technicians (RCTs), craftspeople, supervisors of general workers, truck drivers, and laboratory personnel.

3) Advanced General Worker

Nuclear Process Operators (NPOs) and designated environmental engineering personnel are categorized as advanced general workers, based on job duties. Their activities either generate and manage dangerous waste or they operate the facility systems and processes.

Examples of the duties and responsibilities of an Advanced General Worker for management of dangerous waste in containers include: container inspection, determining advanced container markings and preparing container log sheets, completing waste inventories, sampling of waste, responding to spills and releases of waste in accordance with approved procedures, etc.

LWPF NPOs responsibilities and duties include:

- Operate the ETF, LERF and 242-A Evaporator facilities.
- Package and transport waste samples.
- Perform sampling.
- Conduct routine inspections.
- Provide surveillance.
- Respond to facility alarms.
- Respond to abnormal and/or emergency conditions.

4) General Manager

Personnel identified as General Managers coordinate, direct and oversee the work of general or advanced general workers in the management of dangerous waste or in the operation and control of the facility. Other duties may include command responsibilities during emergency events requiring implementation of the contingency plan. The personnel at LWPF who may be categorized as General Managers include: the Operations Manager (OM), Shift Operations Managers (SOMs), Environmental Compliance Officer (ECO), Cognizant Engineers (Cogs), Persons In Charge (PICs), and Hazardous Material Coordinator (HMC). The TMX identifies employees currently filling these positions.

a) **Operations Manager (OM) responsibilities include:**

- Supervise, coordinate, and direct the activities of the SOMs.
- Maintain control over the LWPF unit operations in accordance with established operating procedures and policies, DOE Orders, and Federal and State regulations.
- Direct, control, and coordinate the storage and transfer of dangerous waste.
- Comply with LWPF discharge permits, delisting, and operating limits.
- Provide guidance to SOMs during abnormal or emergency conditions.

b) **Shift Operations Managers (SOMs) responsibilities include:**

- Supervise and coordinate LWPF operation and maintenance activities.
- Maintain control of LWPF unit operations in accordance with established policies and operating procedures, DOE Orders, and Federal and State regulations.
- Conduct pre-job safety meetings with personnel.
- Maintain operational records.
- Review and revise LWPF operations procedures.
- Recognize and respond to abnormal and/or emergency conditions.
- Supervise the storage, handling, and transfer of dangerous waste.
- Comply with LWPF discharge permit/Delisting requirements and operating limits.

c) **Environmental Compliance Officer (ECO) responsibilities include:**

- Maintain Operations Management awareness of environmental compliance requirements and issues.
- Provide support to ensure compliance with applicable environmental rules and regulations.
- Serve as LWPF's liaison on environmental issues and permits.
- Advise LWPF management of emerging environmental requirements and policies, and recommend implementation strategies to ensure compliance.
- Ensure compliance with LWPF discharge permit/Delisting requirements.

d) **Cognizant Engineers (Cog Eng) responsibilities include:**

- Ensure emergency and monitoring equipment, process equipment, procedures, designs, etc., comply with DOE Orders, Federal and State regulations, national standards, and applicable engineering procedures and management standards.
- Issue and maintain operating documentation, operating procedures, flowsheets, sample schedules, specifications, process test plans and procedures, operational safety requirements, etc.
- Perform evaluations of LWPF unit process to ensure compliance with process control requirements and discharge permits/Delisting.
- Prepare and approve engineering design documents and drawings in compliance with applicable policies, procedures, and instructions per national standards and codes.
- Provide technical assistance for hazardous material and dangerous waste spill response.

e) **Person In Charge (PIC) responsibilities include:**

- Provide in-field direction of tasks in progress.

- f) **Hazardous Material Coordinator (HMC) responsibilities include:**
- Create and maintain Satellite Accumulation Areas (SAAs), as needed, for maintenance of waste generated at LWPF in accordance with applicable requirements.
 - Supervise and coordinate dangerous waste storage and transfer.
 - Provide approved storage containers and applicable markings.
 - Interface with other organizations to ensure proper and timely disposal of waste.
 - Prepare and maintain applicable waste handling documentation in accordance with DOE Orders and Federal and State regulations.
 - Ensure non-regulated alternatives are used whenever possible.
 - Provide review and waste disposition instructions as required.

5) **General Shipper**

General Shippers prepare and sign waste movement documentation for on-site and off-site shipments of dangerous waste. Additionally, at LWPF they are involved in the development and approval of hazardous waste procedures. Designated environmental engineering personnel are categorized as General Shippers as noted on the TMX. The Environmental Compliance Officer should also meet all training requirements for a General Shipper.

6) **Waste Designator**

Personnel who perform and/or complete waste designations at unit/buildings are categorized as waste designators under the RCRA training program.

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5.4 Type and Amount of Training

This section provides an overview of dangerous waste management and job-specific training provided to employees in job titles and positions discussed in the previous sections. In addition to normal operating conditions, all employees are trained on emergency equipment, systems, and procedures to include the following, as applicable to meet the requirements in WAC 173-303-330(1)(d):

- Procedures for using, inspecting, and maintaining emergency response equipment.
- Automatic and manual waste feed cut-off systems.
- Communication and alarm systems.
- Response to fires and explosions.
- Response to dangerous waste contamination incidents and spills.
- Shutdown of operation.

LWPF uses existing courses to the maximum extent practical, ranging from introductory to task specific waste training. Attachment 1 gives listing of the classes, with brief descriptions, required for the stated job classifications and Attachment 2 provides a matrix of job positions and required training.

Support organization employees are also required to complete identified facility specific training applicable to their involvement with dangerous waste management. LWPF Managers and Team Leaders are responsible for identifying individual employee training requirements, in accordance with this plan, and for ensuring training requirements are met.

1) Training for Emergency Response

Federal and state regulations require all employees be able to respond effectively to emergencies and employees be familiar with emergency procedures, emergency equipment, and emergency systems. Specific topics required by federal and state dangerous waste regulations are addressed throughout the Dangerous Waste Training Program and are included in the following training, as applicable:

- Waste Management Awareness.
- Facility Specific Orientation, including Building Emergency Plan.
- Facility Emergency and Hazard Information Checklist.
- Nuclear Process Operator certification.
- Building Emergency Director training.

2) Non-Hanford Facility Personnel Training

Non-Hanford Facility personnel who will be performing unsupervised work at LWPF must complete training required by WAC 173-303 and 40 CFR 264.16.

Non-Hanford Facility personnel who not will be performing un-supervised work in a facility, such as touring a facility, must be escorted by facility personnel with the training required for the tasks.

The TSD Unit Manager is responsible for ensuring non-Hanford Facility personnel meet applicable access requirements before granting access to the facilities.

.5.5 Relevance of Training to Positions

The dangerous waste training program for LWPF employees was developed after reviewing state and federal regulations and the completion of a job analysis for selected positions. Tasks performed by employees were identified and evaluated to determine training requirements. In addition, training needs are evaluated continually in relation to current state and federal regulations.

The LWPF Dangerous Waste Training Program ensures personnel responsible for waste handling are trained properly to perform the job duties pertinent to the handling, storage, treatment, and/or disposal of dangerous wastes.

5.6 Conduct of Training

Training is provided using classroom instruction, On-the-Job Training, and/or computer based training methods. Training is developed and provided by personnel knowledgeable in dangerous waste management policies/procedures.

Hanford Facility personnel shall maintain appropriate knowledge and skills by reviewing training material, required reading, self-paced instruction manuals, lessons learned, group discussions, continued training, etc.. Employees requiring certification are required to recertify annually or biennially, as applicable.

5.7 Documentation of Training

Classroom training is documented on course completion rosters, which are signed by students attending the course. Written examinations are signed by the student at the time of taking the exam and when reviewed with the instructor who grades the examination.

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Training record files for LWPF employees are stored in the TMX computer database, which is accessed by the Facility Records Specialist. A report is generated from the database to inform facility management when an employee's training is within 90 days of expiration. An example of a TMX report is included in Attachment 3. Copies of completed TSD unit-specific training certifications/qualifications are available from the LWPF Training Department. Additional information regarding training records can be accessed through the Human Resources Information System (HRIS). The HRIS system is managed by the Hanford Training Records organization.

Training record summaries for support organization employees are also stored in the HRIS system. Training records for former employees are kept on the HRIS system for three years from the date the employee last worked at LWPF. Original signed and dated training records are maintained by the Hanford Training Records organization. These records are transferred quarterly to the Records Holding Facility in Richland, Washington. After approximately one year at the Records Holding Center, the original training records are archived.

1) Access of Training Records

When a training record is requested during an inspection, an electronic data storage record will be provided. If an electronic data storage record does not satisfy the inspection concern, a hard copy training record will be provided. Training records of former employees may not be readily available to facility personnel and may require a representative from the Training Records organization to access this information.

2) Determining Current Training Status

The electronic data storage training record, coupled with this training plan, will give the ability to quickly determine the training status of personnel in the field.

3) Personnel List

A list of personnel for Advanced General Workers, General Managers, General Shippers and Waste Designators is maintained on TMX, including the direct link between these positions and the individuals filling the positions. The TMX is updated quarterly.

6.0 ATTACHMENTS

- ATTACHMENT 1. RCRA TRAINING PROGRAM COURSE DESCRIPTIONS
- ATTACHMENT 2. REQUIRED LWPF TRAINING
- ATTACHMENT 3. EXAMPLE OF TMX DATABASE REPORT

ATTACHMENT 1. RCRA TRAINING PROGRAM COURSE DESCRIPTIONS

The following list of courses constitutes the RCRA training program courses as determined by
(1) the Dangerous Waste Regulations WAC 173-303,
(2) the Hanford Facility RCRA Permit, and
(3) correspondence between RL and Ecology on dangerous waste training.

HANFORD TRAINING COURSES

Title / course number	000001 Hanford General Employee Training
Description	Course covers DOE orders and applicable policies pertaining to employer and employee rights and responsibilities, general radiation training, hazard communications, dangerous waste, fire prevention, personal protective equipment, safety requirements, certain unit/building orientation refresher training, emergency preparedness, accident reporting, and avenues for addressing safety concerns. The RCRA training program identifies this course as a program element as an annual refresher to the Hanford Facility RCRA permit condition concerning training.
Mandating Document(s)	Hanford Facility RCRA Permit, General Condition II.C.2 and 4
Target Audience	All Hanford Facility personnel working on the Hanford Site.
Frequency	Initially and annually thereafter

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Title	02006G Waste Management Awareness
Description	<p>Course introduces workers to federal laws governing chemical safety in the work place. The course provides the hazardous material/waste worker with the basic fundamentals for safe use of hazardous materials and initial accumulation or storage of dangerous or mixed waste in containers. The concepts covered in this course instruct personnel on specific waste generation procedures and requirements which includes: (1) Applicable waste management practices (i.e., waste stream identification, waste segregation practices, completing container logsheets, and housekeeping requirements), (2) proper responses to incidents pertaining to the waste in the initial accumulation containers, (3) proper responses to dealing with waste of unknown origins, and (4) proper responses to questions posed in the field concerning the above elements.</p>
Mandating Document(s)	<p>Satellite accumulation areas: Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14, 1994, items 3 and 4. Hanford Facility RCRA Permit, General Condition II.C.4</p> <p>90-day accumulation areas: WAC 173-303-330(1) Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14,, 1994, items 3 and 4. Hanford Facility RCRA Permit, General Condition II.C.4</p> <p>TSD unit storage containers: WAC 173-303-330(1) Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14,, 1994, items 3 and 4. Hanford Facility RCRA Permit, General Conditions II.C.1 and II.C.4</p>
Target Audience	<p>Hanford Facility personnel categorized as a General Worker, Advanced General Worker, and General Manager. Subcontractors categorized as General Workers. Other courses may provide equivalent training so that credit for this course is provided when the electronic data storage training record is generated.</p>
Frequency	<p>One-time-only</p> <p>Justification: The initial accumulation of waste can be conducted under satellite accumulation area provisions in WAC 173-303-200(2), during a project where the 90-day accumulation period starts when the waste is first placed into a container, inside an Area of Contamination during CERCLA or RCRA past practice activities, or in a TSD unit storage container. Annual refresher training is not required because unit/building specifics are adequately covered through the annual BEP and container waste management courses.</p>

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Title	020159 Advanced Course 2 - Hazardous Waste Shipper Certification
Description	Course introduces General Shippers to identify shippers' responsibilities and liabilities with regard to compliance to manifesting requirements and DOT regulations, including placarding, identifying proper shipping names, and loading requirements.
Mandating Document(s)	WAC 173-303-330(1), -180, -190, and -370. Hanford Facility RCRA Permit, General Condition II.Q as applicable.
Target Audience	General Shippers of dangerous or mixed waste on roadways anywhere on the Hanford Facility.
Frequency	Every three years.

Title	02028B Building Emergency Director Training
Description	Course provides an overview of the responsibilities of the Building Emergency Director, identifies the building emergency organizations, actions required during an event, implementing the contingency plan, and discusses drill and exercise requirements.
Mandating Document(s)	WAC 173-303-330(1), -340, -350, and -360
Target Audience	Hanford Facility personnel categorized as a General Managers because they perform the responsibilities of a RCRA Emergency Coordinator through the title of Building Emergency Director or alternate. The BED can function over TSD units or generator activities.
Frequency	Initial (Retrained annually by Building Emergency Director Requalification)

Title	035010 Waste Designation
Description	Course teaches dangerous waste designation according to WAC 173-303. Class content includes section-by-section lecture on the regulations, with examples following each section. Students complete examples using a waste designation flow chart. Examples addressed include: listed waste, characteristic waste, and Washington State criteria: toxicity and persistence.
Mandating Document(s)	WAC 173-303-330(1), -070, and -080 through -100
Target Audience	General Shippers and Waste Designators
Frequency	One-time only Justification: Another course, the Waste Designation Qualification course, annually qualifies those personnel who designate waste. General Shippers do not need to be annually retrained in this course because they

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Title	035012 Waste Designation Qualification
Description	Course provides qualification to become a qualified waste designator.
Mandating Document(s)	WAC 173-303-330(1), -070, and -080 through -100
Target Audience	Waste Designators
Frequency	Annual

Title	035020 Facility Waste Sampling and Analysis
Description	Course presents waste sampling methodologies according to EPA Protocols SW-846, "Test Methods for Evaluating Solid Waste Physical/Chemical Methods." This course also covers documentation requirements in a sampling plan, waste analysis plan, field and laboratory quality control/assurance, data quality objectives process, and use of actual sampling equipment as specified by WAC 173-303-110. Finally topics on listed waste management pertaining to sample management and available on-site sampling services are covered.
Mandating Document(s)	WAC 173-303-330(1), -070, -110, and -300
Target Audience	General Shippers
Frequency	One time only Justification: In most cases on the Hanford Facility, the General Shipper will utilize resources from outside organizations to physically acquire samples. In addition, the General Shipper will also rely on the review and approval process for the development and issuance of Sampling and Analysis Plans regarding a sampling effort. This training provides an overview of information to ensure that sampling efforts are properly arranged for and planned.

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Title	035100 Container Waste Management - Initial
Description	<p>Course covers general training requirements pertaining to waste management in container at 90-day accumulation areas and TSD units. The course incorporates WAC 173-303-200(1), -630, DOE orders, and FDH policy for container management. Includes practical exercises for hands-on experience with the packaging of dangerous or mixed waste, and preparation of packages for final destination.</p> <p>This course does not cover waste management aspects pertaining to other RCRA waste management units such as tank systems, surface impoundments, containment buildings, landfills, etc.</p>
Mandating Document(s)	WAC 173-303-330(1), -630, -200(1) and Waste Minimization
Target Audience	Advanced General Workers and General Managers categorized because they are immediate managers of Advanced General Workers who manage containers of dangerous or mixed waste.
Frequency	Initial only (refresher - Container Waste Management Training)

Title	035110 Container Waste Management - Refresher
Description	Refresher Course - Container Waste Management - Initial
Mandating Document	WAC 173-303-330(1), -630, -200(1), and waste minimization
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage dangerous or mixed waste in containers.
Frequency	Annual

Title	035120 Waste Management Administration - Initial
Description	Course is designed for personnel preparing to become shippers of dangerous and/or mixed waste. This course covers regulatory and company policies, forms, reports, forecasts, and plans. Topics also covered include: waste characterization, waste storage disposal request, low level waste storage/disposal record, transuranic waste storage/disposal record, and radioactive mixed waste attachment sheet. In addition, students will learn how these forms are used to complete shipping papers.
Mandating Document(s)	WAC 173-303-330(1), -630, -200, -210, -220, -380, and -390.
Target Audience	General Shippers
Frequency	Initial only (Refresher - Waste Management Administration)

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Title	035130 Waste Management Administration - Refresher
Description	Refreshes course - Waste Management Administration - Initial
Mandating Document(s)	WAC 173-303-330(1), -630, -200, -210, -220, -380, and -390.
Target Audience	General Shippers
Frequency	Annual

Title	037510 Building Emergency Director Requalification
Description	Refresher for Building Emergency Director Training
Mandating Document(s)	WAC 173-303-330, -340, -350, and -360
Target Audience	General Manager categorized because they can act as RCRA Emergency Coordinator in WAC 173-303-360.
Frequency	Annual

Title	03E096 Unit/building-Specific Contingency Plan/Hazard Communication/Emergency Preparedness Training for 242-A Evaporator/LERF (Uses "Facility Emergency and Hazard Information Checklist", A-6000-784R)
Description	Course consists of a review of specific chemical hazards associated with each RCRA waste management unit and job assignment, as covered by a RCRA contingency plan. The training is completed by the supervisor, manager, or a designated individual using a checklist available on the Hanford Local Area Network under Jet Forms. The unit/building-specific information is reviewed concerning hazards in the work area and emergency response requirements, including where applicable, waste feed cut-off, communication and alarm systems, and response to fires. The training is completed by the immediate manager, or a designated individual using a checklist. The checklist acts as a guide to ensure consistent coverage of necessary topics.
Mandating Document(s)	WAC-173-303-330, -340, and -350 Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14., 1994, items 3 and 4. Hanford Facility RCRA Permit, General Condition II.C.4
Target Audience	All Hanford Facility personnel assigned to, or performing work at 242-A Evaporator/LERF. Non-Hanford personnel who will perform work unsupervised.
Frequency	Annual

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Title	03E074 Unit/Building-Specific Contingency Plan/Hazard Communication/Emergency Preparedness Training for ETF/LERF (Uses "Facility Emergency and Hazard Information Checklist", A-6000-784R)
Description	Course consists of a review of specific chemical hazards associated with each RCRA waste management unit and job assignment, as covered by a RCRA contingency plan. The training is completed by the supervisor, manager, or a designated individual using a checklist available on the Hanford Local Area Network under Jet Forms. The unit/building-specific information is reviewed concerning hazards in the work area and emergency response requirements, including where applicable, waste feed cut-off, communication and alarm systems, and response to fires. The training is completed by the immediate manager, or a designated individual using a checklist. The checklist acts as a guide to ensure consistent coverage of necessary topics.
Mandating Document(s)	WAC-173-303-330, -340, and -350 Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14,, 1994, items 3 and 4. Hanford Facility RCRA Permit, General Condition II.C.4
Target Audience	All Hanford Facility personnel assigned to, or performing work at ETF/LERF. Non-Hanford Facility personnel who will perform work unsupervised.
Frequency	Annual

Title	350400 242-A Evaporator Operator Certification
Description	Qualifies NPOs to control 242-A Evaporator systems.
Mandating Document(s)	WAC-173-303-330, -640
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage mixed waste in tank systems.
Frequency	Biennial

Title	350540 242-A Evaporator Orientation
Description	Introduction to the 242-A Evaporator, including facility mission, hazards and emergency response procedures. (Includes BEP)
Mandating Document(s)	WAC-173-303-330 Hanford Facility RCRA Permit, General Condition II.C.2
Target Audience	All Hanford Facility personnel assigned to, or doing work at, the 242-A Evaporator. Non-Hanford Facility Personnel who will perform work

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Frequency	Annual
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Title	705020 LWPF Hazardous Material/Waste Handling
Description	Presents Waste Handlers with state, federal and Hanford specific regulations on waste handling, including: segregation, packaging, and disposal.
Mandating Document(s)	WAC-173-303-330, -630
Target Audience	All General Workers, and Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage dangerous or mixed waste in containers.
Frequency	Annual

Title	705120 LWPF Outside Operator Certification
Description	Qualifies NPOs to operate those systems under the control of the LWPF Outside Operator, including: TEDF, Load-In Station, and LERF.
Mandating Document(s)	WAC-173-303-330, -640, -650
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage dangerous or mixed waste in tank systems and/or surface impoundments.
Frequency	Biennial

Title	705125 LWPF Primary Systems Operator Certification
Description	Qualifies NPOs to operate the ETF's Primary Treatment Train systems, including the UV/OX and the RO systems.
Mandating Document(s)	WAC-173-303-330, -640
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage mixed waste in tank systems.
Frequency	Biennial

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Title	705130 LWPF Secondary Systems Operator Certification
Description	Qualifies NPOs to operate the ETF's Secondary Treatment Train systems, including the Secondary Waste Receiving Tanks and the ETF Evaporator and Thin Film Dryer.
Mandating Document(s)	WAC-173-303-330, -640
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage mixed waste in tank systems.
Frequency	Biennial

Title	705135 ETF Control Room Operator Certification
Description	Qualifies NPOs to control ETF and TEDF systems from a centralized computer system, including emergency response procedures.
Mandating Document(s)	WAC-173-303-330, -340, -350, 360, -630, and -640.
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage dangerous or mixed waste in containers and/or tank systems. General Managers who are Building Emergency Directors.
Frequency	Biennial

Title	705700 200 Area LEF Facility Orientation
Description	Introduction to the ETF, LERF and TEDF facilities including: facility missions, hazards, and emergency response procedures.
Mandating Document(s)	WAC-173-303-330 Hanford Facility RCRA Permit, General Condition II.C.2
Target Audience	All Hanford Facility personnel assigned to, or doing work at ETF, LERF, or TEDF. Non-Hanford Facility Personnel who will perform work unsupervised.
Frequency	Annual

ATTACHMENT 2. REQUIRED LWPF TRAINING

Position	Job Title	Required Training
All Employee	All other Job Titles not specifically listed below.	000001, 350540 ¹ , 705700 ² , 03E096 ¹ , 03E074 ²
General Worker	Radiological Control Technician, Maintenance Personnel, including: Electrician, Instrument Technician, Insulator, Millwright, Painter, Pipefitter, Power Operator, Process Crane Operator, Rigger, Sign Painter, Truck Driver, Welder Maintenance Manager, Radiological Control Manager	000001 02006G 350540 ¹ 705700 ² 03E096 ¹ 03E074 ²
Advanced General Worker	Nuclear Process Operator	000001, 02006G, 035100, 035110, 705120 ² , 705125 ² , 705130 ² , 705135 ² , 350400 ¹ , 03E096 ¹ , 03E074 ²
General Manager	Operations Manager, Shift Operations Managers, Environmental Compliance Officer, Person-in-Charge, Hazardous Material Coordinator	000001, 02006G, 02028B, 037510, 035100, 035110, 350540 ¹ , 705700 ² , 03E096 ¹ , 03E074 ²
General Shipper	Shipper	000001, 02006G, 020159, 035010, 035020, 035100, 035110, 035120, 035130, 350540 ¹ , 705700 ² , 03E096 ¹ , 03E074 ²
Waste Designator	Waste Designator	000001, 035010, 035012, 350540 ¹ , 705700 ² , 03E096 ¹ , 03E074 ²

Notes:

1. These classes are specific to the 242-A Evaporator and are not required for personnel who work exclusively at LERF/ETF. TMX provides information on personnel who work exclusively at 242-A Evaporator or LERF/ETF.
2. These classes are specific to the LERF/ETF and are not required for personnel who work exclusively at the 242-A Evaporator. TMX provides information on personnel who work exclusively at 242-A Evaporator or LERF/ETF.

Dangerous Waste Training Plan

ATTACHMENT 3. EXAMPLE OF TMX DATABASE REPORT

***** BUSINESS SENSITIVE *****

POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code:
 Manager:
 Organization : 200A EFFLUENT TREATMENT FAC OPS
 Position: Shift Ops Mgr - ETF (GM)

Matrix Last Modified on 07/19/97
 30 Days Delinquent Forecast

07/21/97 Position 1
 16:16:46 Sheet 1 of 2

	Course No.	Title	Retrain Course	Individual #1	Individual #2	Individual #3	Individual #4
M	000001	HGET	000001	09/30/97	10/10/97	01/10/98	08/26/97
M	003034	LOCK & TAG - AUTH WRKR INITIAL	003037	11/15/97	10/29/97	11/18/97	03/10/98
M	020001	RAD WORKER TRNG II - INIT	020003	08/06/98	11/09/97	07/11/98	09/24/98
M	020030	SCBA ANNUAL	020030	05/09/98	10/04/97	05/22/98	06/04/98
M	020032	SCOTT SKA-PAK AIRLINE SYSTEM	020032	05/09/98	10/04/97	05/22/98	06/04/98
M	020041	BASIC RESP PROTECT TRNG	020041	01/10/98	10/30/97	09/05/97	11/19/97
M	020044	QUANTITATIVE MASK FIT	020044	01/10/98	10/30/97	09/05/97	11/19/97
M	02006G	WASTE MANAGEMENT AWARENESS	-----	OK OK		OK	OK
M	020130	CONFND SPC ENTRY (CSE)	-----	OK OK		OK	OK
M	02028B	BLDG EMER DIR TRNG	037510	02/18/98	02/04/98	01/28/98	01/11/98
M	020702	RAD WORKER I/II REFRESH	020702	09/30/98	10/10/98	01/09/99	08/26/98
M	031110	24 HR RCRA TSD HAZ WASTE	032020	05/09/98	10/09/97	05/22/98	06/04/98
M	350540	242-A EVAPORATOR ORIENT	-----	OK	OK	OK	OK
M	703036	LWPF LOCK & TAG	703036	12/31/98	12/31/98	01/09/99	12/31/98
M	705020	200 AREA WSTE HNDLING OPS	-----	OK	OK	OK	OK
M	705700	200A LEF FAC ORIENT	705700	09/30/97	10/10/97	01/10/98	08/26/97
D	000390	OJT TRAINING WORKSHOP	-----	OK	OK	OK	OK
D	020107	BHVR BASED SAFETY TRNG	-----	OK	OK	OK	OK
D	020704	RAD CON MANUAL TRNG - MGRS -----	OK	OK		OK	OK
D	03E074	BLDG EMERG PLAN - 0263 - ETF	03E074	09/30/97	10/10/97	01/09/98	08/26/97
D	03E096	242A EVAP/LERF FAC EMERG ID CH	03E096	03/19/98	12/19/97	03/12/98	03/12/98
D	042720	AERIAL LIFT OPER TRNG	043920	05/17/98	/ /	06/15/98	04/07/00
D	044470	FORKLIFT OPERATNL SAFETY	041890	03/18/00	/ /	11/29/98	11/22/99
D	044480	MEDIUM RISK ELECT SAFETY	044480	12/12/97	04/30/00	<<08/16/97>>	09/13/97

LEGEND

- Upper case (M/D/C/P) = Course needed by all
- Lower case (m/d/c/p) = Course needed by some
- * = Retrain not to be maintained
- << >> = Course delinquent
- / / = Course needed (upper case) but not taken
- Date = Course retrain date
- OK = Course taken; no retrain required
- **** = Course taken; retrain requirement not maintained
- Blank = Course not needed (lower case) and not taken

To delete specific employee retrain dates for lower case (m, d, c, p): See TMX Main Menu 5., TMX Course Alternates.

Dangerous Waste Training Plan

***** BUSINESS SENSITIVE *****

POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code:
 Manager:
 Organization : 200A EFFLUENT TREATMENT FAC OPS
 Position: Shift Ops Mgr - ETF (GM)

Matrix Last Modified on 07/19/97
 30 Days Delinquent Forecast

07/21/97 Position 1
 16:16:46 Sheet 2 of 2

	Course No.	Title	Retrain Course	Individual #1	Individual #2	Individual #3	Individual #4
D	170500	BASIC MEDIC FIRST AID	170535 01/23/98	03/05/99		08/05/98	09/13/97
D	170640	QTRC - INTRO TO OCC RPTG	-----	OK	OK	OK	OK
D	170642	OCCURRENCE REPORT WRITING	-----	OK	OK	OK	OK
D	170656	HANDS-ON FIRE EXTINGSHR	170656	05/14/98	03/06/98	<<06/12/97>>	08/28/97
D	705035	200 AREA LEF EP/APC	705035	09/30/97	09/30/97	10/28/97	10/21/97
D	705120	200 LEF OUTSIDE OPER CERT	705120	03/07/99	12/26/98	03/10/99	03/13/99
D	705125	200 AR PRMRY SYS OPR CER	705125	09/20/97	03/24/99	09/20/97	10/04/97
D	705130	200 LEF SCNDRY WSTE OPER	705130	09/20/97	03/24/99	09/20/97	10/04/97
D	705135	200 LEF CNTRL RM OP CERT	705135	09/20/97	03/24/99	09/20/97	10/04/97
m	020140	FALL PROTECTION TRAINING	-----				
d	001000	CONDUCT OF OPS - INTRO	-----	OK	OK	OK	OK
d	001005	OVERVIEW CONDUCT OPERTNS	-----	OK	OK	OK	OK
d	010108	WORK MGT & JCS OVERVIEW	010108	****		****	****
d	02006L	ASBESTOS CONTROL	02006L		05/27/98		
d	040784	BASIC CRANE & RIGGING SAFETY	040788		****		
d	060760	COND IND WTR HAMMER SFTY	060765		****	****	05/06/98
d	080969	NEW MANAGER ORIENTATION	-----			OK	
d	705115	200A LEF PIC TRAINING	-----	OK	OK	OK	OK
d	705140	200 ETF SHTDN SHFT OPS MGR QUL	705140		01/06/99		
p	080553	SELF ASSES FOR MGT SKLS	-----				
p	080810	COM SKILLS WORKSHOP	-----		OK		OK
p	080925	SEXUAL HARASSMENT WRKPL	-----			OK	
p	170002	RISK EVALUATION	-----	OK		OK	
p	170654	SELF ASSES 1ST LIN SPVSR	-----				
p	170780	INTRO TO OSHA STDS	-----			OK	

**Hanford Facility RCRA Permit Modification Notification Forms
for
Part III, Chapter 5 and Attachment 35**

242-A Evaporator

Page 1 of 4

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Page 2 of 4: Appendix 8A

Page 3 of 4: Section 11.3.4.3, Page 11-5, line 39

Page 4 of 4: Section 11.3.4.3, Page 11-5, line 41

Hanford Facility RCRA Permit Modification Notification Form				
Unit: 242-A Evaporator	Permit Part & Chapter: Part III, Chapter 5 and Attachment 35 Section III.5.A, Appendix 8A			
<u>Description of Modification:</u>				
Appendix 8A: Remove and replace the Dangerous Waste Training Plan.				
The Dangerous Waste Training Plan was reissued with a new internal number due to changes in the numbering of documents managed by Waste Management Federal Services of Hanford, Inc. The title was changed from "HNF-IP-0931, 200 Area Liquid Waste Processing Facilities Administrative Policies" to "WMH-331, 200 Area Liquid Waste Processing Facilities Administrative Procedures." The content of the new version is identical to the original Dangerous Waste Training Plan.				
Modification Class: ²³	Class 1	Class ¹ I	Class 2	Class 3
Please check one of the Classes:	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u>				
A. General Permit Provisions				
1. Administrative and informational changes				
Submitted by Co-Operator: <i>Kenneth J. Skurla</i> for C. G. Mattsson	Date 6/16/98	Reviewed by RL Program Office: <i>Julie G. Bilson</i> H. E. Bilson	Date 7/7/98	Reviewed by Ecology: S. J. Skurla
	Date		Date	Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
242-A Evaporator

Permit Part & Chapter:
Part III, Chapter 5 and Attachment 35
Section III.5.A, Chapter 11.0

Description of Modification:

Section 11.3.4.3, Page 11-5, line 39: Delete reference to Section 11.1.2.3, it does not exist.

11.3.4.3 Concrete/Liner . The coated concrete floor and the pump room sump liner provide secondary containment for all the tanks, process piping, and ancillary equipment. All concrete and liners will be inspected visually and surveyed radiologically before any decontamination. The purpose of the inspection will be twofold: to identify and map any cracks in the concrete that might have allowed contaminants a pathway to the soil below (~~Section 11.1.2.3~~) and to identify areas that potentially are contaminated with dangerous waste or dangerous waste residues. The inspection standard will be a clean debris surface as defined in Section 11.1.1. The inspection of the concrete for a clean debris surface will be documented on an inspection record. Those areas already meeting the standard will be clean closed as is.

Those potentially contaminated areas will undergo decontamination to meet the clean closure standard of a clean debris surface. The concrete will be washed down, the rinsate collected, designated, and disposed of accordingly. The concrete will be re-inspected for a clean debris surface. Concrete surfaces indicated by visual examination as potentially still being contaminated will have the surface layer removed to a depth of 0.6 centimeter by scabbling or other approved methods. This will not threaten the environment, even if potential through-thickness cracks had been found during the inspection, because concrete decontamination (scabbling) will not employ liquid solutions that could enter cracks and because scabbling residues will be vacuumed away from cracks as any residue is generated.

Achievement of a clean debris surface will be documented on an inspection record. Decontamination residues will be collected, designated, and managed as appropriate.

Modification Class: ^{2 3}	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.2.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
2. Correction of typographical errors

Submitted by Co-Operator: <i>Kenneth G. McBride</i> 6/16/98 for C. G. Mattsson	Date	Reviewed by RL Program Office: <i>H. E. Bilson</i> 7/7/98 H. E. Bilson	Date	Reviewed by Ecology: S. J. Skurla	Date
---	------	--	------	--------------------------------------	------

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
242-A Evaporator

Permit Part & Chapter:
Part III, Chapter 5 and Attachment 35
Section III.5.A, Chapter 11.0

Description of Modification:

Section 11.3.4.3, Page 11-5, line 41: Change reference "Section 11.1.1" to "Section 11.2.1".

11.3.4.3 Concrete/Liner . The coated concrete floor and the pump room sump liner provide secondary containment for all the tanks, process piping, and ancillary equipment. All concrete and liners will be inspected visually and surveyed radiologically before any decontamination. The purpose of the inspection will be twofold: to identify and map any cracks in the concrete that might have allowed contaminants a pathway to the soil below (Section 11.1.2.3.) and to identify areas that potentially are contaminated with dangerous waste or dangerous waste residues. The inspection standard will be a clean debris surface as defined in Section 11.2.1.1. The inspection of the concrete for a clean debris surface will be documented on an inspection record. Those areas already meeting the standard will be clean closed as is.

Those potentially contaminated areas will undergo decontamination to meet the clean closure standard of a clean debris surface. The concrete will be washed down, the rinsate collected, designated, and disposed of accordingly. The concrete will be re-inspected for a clean debris surface. Concrete surfaces indicated by visual examination as potentially still being contaminated will have the surface layer removed to a depth of 0.6 centimeter by scabbling or other approved methods. This will not threaten the environment, even if potential through-thickness cracks had been found during the inspection, because concrete decontamination (scabbling) will not employ liquid solutions that could enter cracks and because scabbling residues will be vacuumed away from cracks as any residue is generated.

Achievement of a clean debris surface will be documented on an inspection record. Decontamination residues will be collected, designated, and managed as appropriate.

Modification Class: ^{2,3}

please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.2.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

2. Correction of typographical errors

Submitted by Co-Operator: <i>Kenneth G. Svoboda</i> for C. G. Mattsson	Reviewed by RL Program Office: <i>[Signature]</i> H. E. Bilson	Reviewed by Ecology: S. J. Skurla
Date 6/16/98	Date 7/7/98	Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit
Part III, Chapter 5 and Attachment 35

242-A Evaporator

Page Changes

Appendix 8A (WMH-331, Dangerous Waste Training Plan)

Chapter 11



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APPENDIX 8A

TRAINING PLAN

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Dangerous Waste Training Plan

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Dangerous Waste Training Plan

1.0 PURPOSE

This document outlines the Dangerous Waste Training Program (DWTP) for the 200 Area Liquid Waste Processing Facilities (LWPF) organization. The 200 Area Effluent Treatment Facility (ETF), Liquid Effluent Retention Facility (LERF), and 242-A Evaporator are under the control of LWPF and each is permitted as a Treatment, Storage, or Disposal (TSD) unit on the Hanford Facility.

The program is designed for compliance with the requirements of Washington Administrative Code (WAC) 173-303-330 and Title 40 Code of Federal Regulations (CFR) 264.16 for the development of a written dangerous waste training program. These training requirements were determined after assessment of employee duties and responsibilities.

2.0 SCOPE

This Dangerous Waste Training Plan applies to personnel who perform work at, or in support of, the 200 Area Effluent Treatment Facility (ETF), Liquid Effluent Retention Facility (LERF) and the 242-A Evaporator. This Dangerous Waste Training Plan defines the minimum required training for employees to perform tasks associated with dangerous waste(s).

The LWPF training program is designed to ensure that employees who operate and maintain LWPF systems/equipment receive the training they require to safely operate and maintain LWPF systems/equipment in a effective and environmentally sound manner. In addition to preparing employees to operate and maintain LWPF equipment/systems under normal conditions, this training program ensures that employees are prepared to respond in a prompt and effective manner should off-normal or emergency conditions occur.

3.0 DEFINITION

NONE

Dangerous Waste Training Plan

4.0 RESPONSIBILITIES

4.1 Training Manager

The LWPF Facility Manager has overall responsibility for all training required by Washington Administrative Code (WAC) 173-303-330 and Condition II.C of the Hanford RCRA Permit (DW portion) at LWPF. To meet the training requirements in WAC 173-303-330(1)(a), the training director position is described in Chapter 8.0 of DOE/RL-91-28, *Hanford Facility Dangerous Waste Permit Application, General Information Portion*.

4.2 Facility Management (including Team Leaders)

Develop and administer a comprehensive training program for employees.

Ensure annual training on dangerous waste(s) is provided to affected employees.

Ensure all applicable training requirements are met.

4.3 Operations Management

Ensure Operations personnel are trained.

Ensure required certifications are maintained.

4.4 Training Personnel

Maintain knowledge in the area of waste management, including updates.

Re-evaluate training courses at least every year to ensure waste training requirements continue to be met.

4.5 Employees

Handle dangerous waste(s) in accordance with applicable regulations.

Minimize personal exposure to all dangerous wastes.

Inform management of problems concerning dangerous waste handling / storage / disposal.

Dangerous Waste Training Plan

5.0 PROCEDURE

The LWPF Dangerous Waste Training Program is implemented based on training requirements related to job responsibilities. Personnel affected by the Dangerous Waste Training Program complete those portions of the training curriculum delineated in the company level environmental compliance manuals, and tracked by the (computerized) Training Matrix (TMX), prior to performing unsupervised work in a facility.

Personnel new to LWPF, or changing positions within LWPF, complete the required dangerous waste training within six months of the assignment. Personnel who have not completed required training are permitted to perform work requiring handling dangerous wastes at LWPF only under the supervision of a trained employee. LWPF operations management is responsible for ensuring that all operations personnel are trained and required certifications are maintained.

5.1 Identification of Training

The required training is specified by the employee's specific job duties as determined by a job analysis or management assessment. Training requirements for individual operations personnel can be found in TMX. Required training is based on worker positions/job titles described in this plan and listed on Attachment 3, Required LWPF Training.

5.2 Dangerous Waste Worker Positions

Employee duties have been categorized within six worker positions. In the event personnel duties and responsibilities overlap and fall into more than one position, the employee will complete the training requirements for each position. The six worker positions are: 1) All Employee, 2) General Worker, 3) Advanced General Worker, 4) General Manager, 5) General Shipper, and 6) Waste Designator.

The level of training is determined by the duties associated with each worker position. The description of job duties for each position can be matched to individual job titles held by employees at the Hanford Site. The determining factor for placing a specific worker within any of the worker positions are the duties of the worker's job.

5.3 Job Title and Descriptions

Each employee is assigned a job title and job description. The job descriptions include requisite skills, work experience, education, and other qualifications, and a brief list of duties and/or responsibilities for each position. Work experience, education, and other qualifications required for each position are maintained by the company's human resources department.

In the following sections, brief job titles and job descriptions of employees associated with dangerous waste management at LWPF are listed within the appropriate position.

Dangerous Waste Training Plan

1) **All Employees**

Employees included in this position are those personnel who do not fall into one of the other five positions and have no duties or responsibilities directly associated with dangerous waste. The types of personnel in this position typically include Secretaries, Clerks, and Oversight (example: Quality Assurance) Personnel.

Most non-Hanford Facility Personnel will be categorized as All Employees since they generally tour, provide oversight, or are brought on site for interviews. Other non-Hanford Facility Personnel who gain access to the LWPF facilities to complete work in controlled areas but do not become involved in the management of dangerous or mixed waste will be categorized as All Employees.

2) **General Worker**

Facility or support personnel with limited dangerous waste management duties, which include general activities associated with the generation of waste, facility maintenance or modification, are categorized as General Workers. Job duties and responsibilities for general workers are not unit specific.

Hanford Facility personnel categorized as General Workers may be assigned duties and responsibilities for:

Placing waste generated into pre-approved containers and filling out log sheets where applicable.

Completing radiological surveys of dangerous or mixed wastes.

The loading of packaged containers onto trucks or movement of containers.

Responding to a spill or release of known contents where the duties and responsibilities are limited to containing the spill/release, returning the drum to an upright position, and placing the known spilled material or waste into a pre-approved container.

Applying advanced container markings or labels based on direction from an Advanced General Worker, General Manager, or General Shipper.

Support organizations management and technical support personnel assist management in the safe, effective, efficient, and environmentally acceptable operation and maintenance of the facilities. Personnel who function as general workers may include, but are not limited to: maintenance personnel, radiological control technicians (RCTs), craftspeople, supervisors of general workers, truck drivers, and laboratory personnel.

3) Advanced General Worker

Nuclear Process Operators (NPOs) and designated environmental engineering personnel are categorized as advanced general workers, based on job duties. Their activities either generate and manage dangerous waste or they operate the facility systems and processes.

Examples of the duties and responsibilities of an Advanced General Worker for management of dangerous waste in containers include: container inspection, determining advanced container markings and preparing container log sheets, completing waste inventories, sampling of waste, responding to spills and releases of waste in accordance with approved procedures, etc.

LWPF NPOs responsibilities and duties include:

- Operate the ETF, LERF and 242-A Evaporator facilities.
- Package and transport waste samples.
- Perform sampling.
- Conduct routine inspections.
- Provide surveillance.
- Respond to facility alarms.
- Respond to abnormal and/or emergency conditions.

4) General Manager

Personnel identified as General Managers coordinate, direct and oversee the work of general or advanced general workers in the management of dangerous waste or in the operation and control of the facility. Other duties may include command responsibilities during emergency events requiring implementation of the contingency plan. The personnel at LWPF who may be categorized as General Managers include: the Operations Manager (OM), Shift Operations Managers (SOMs), Environmental Compliance Officer (ECO), Cognizant Engineers (Cogs), Persons In Charge (PICs), and Hazardous Material Coordinator (HMC). The TMX identifies employees currently filling these positions.

Dangerous Waste Training Plan

a) **Operations Manager (OM) responsibilities include:**

- Supervise, coordinate, and direct the activities of the SOMs.
- Maintain control over the LWPF unit operations in accordance with established operating procedures and policies, DOE Orders, and Federal and State regulations.
- Direct, control, and coordinate the storage and transfer of dangerous waste.
- Comply with LWPF discharge permits, delisting, and operating limits.
- Provide guidance to SOMs during abnormal or emergency conditions.

b) **Shift Operations Managers (SOMs) responsibilities include:**

- Supervise and coordinate LWPF operation and maintenance activities.
- Maintain control of LWPF unit operations in accordance with established policies and operating procedures, DOE Orders, and Federal and State regulations.
- Conduct pre-job safety meetings with personnel.
- Maintain operational records.
- Review and revise LWPF operations procedures.
- Recognize and respond to abnormal and/or emergency conditions.
- Supervise the storage, handling, and transfer of dangerous waste.
- Comply with LWPF discharge permit/Delisting requirements and operating limits.

Dangerous Waste Training Plan

- c) **Environmental Compliance Officer (ECO) responsibilities include:**
- Maintain Operations Management awareness of environmental compliance requirements and issues.
 - Provide support to ensure compliance with applicable environmental rules and regulations.
 - Serve as LWPF's liaison on environmental issues and permits.
 - Advise LWPF management of emerging environmental requirements and policies, and recommend implementation strategies to ensure compliance.
 - Ensure compliance with LWPF discharge permit/Delisting requirements.
- d) **Cognizant Engineers (Cog Eng) responsibilities include:**
- Ensure emergency and monitoring equipment, process equipment, procedures, designs, etc., comply with DOE Orders, Federal and State regulations, national standards, and applicable engineering procedures and management standards.
 - Issue and maintain operating documentation, operating procedures, flowsheets, sample schedules, specifications, process test plans and procedures, operational safety requirements, etc.
 - Perform evaluations of LWPF unit process to ensure compliance with process control requirements and discharge permits/Delisting.
 - Prepare and approve engineering design documents and drawings in compliance with applicable policies, procedures, and instructions per national standards and codes.
 - Provide technical assistance for hazardous material and dangerous waste spill response.
- e) **Person In Charge (PIC) responsibilities include:**
- Provide in-field direction of tasks in progress.

f) **Hazardous Material Coordinator (HMC) responsibilities include:**

- Create and maintain Satellite Accumulation Areas (SAAs), as needed, for maintenance of waste generated at LWPF in accordance with applicable requirements.
- Supervise and coordinate dangerous waste storage and transfer.
- Provide approved storage containers and applicable markings.
- Interface with other organizations to ensure proper and timely disposal of waste.
- Prepare and maintain applicable waste handling documentation in accordance with DOE Orders and Federal and State regulations.
- Ensure non-regulated alternatives are used whenever possible.
- Provide review and waste disposition instructions as required.

5) **General Shipper**

General Shippers prepare and sign waste movement documentation for on-site and off-site shipments of dangerous waste. Additionally, at LWPF they are involved in the development and approval of hazardous waste procedures. Designated environmental engineering personnel are categorized as General Shippers as noted on the TMX. The Environmental Compliance Officer should also meet all training requirements for a General Shipper.

6) **Waste Designator**

Personnel who perform and/or complete waste designations at unit/buildings are categorized as waste designators under the RCRA training program.

5.4 Type and Amount of Training

This section provides an overview of dangerous waste management and job-specific training provided to employees in job titles and positions discussed in the previous sections. In addition to normal operating conditions, all employees are trained on emergency equipment, systems, and procedures to include the following, as applicable to meet the requirements in WAC 173-303-330(1)(d):

- Procedures for using, inspecting, and maintaining emergency response equipment.
- Automatic and manual waste feed cut-off systems.
- Communication and alarm systems.
- Response to fires and explosions.
- Response to dangerous waste contamination incidents and spills.
- Shutdown of operation.

LWPF uses existing courses to the maximum extent practical, ranging from introductory to task specific waste training. Attachment 1 gives listing of the classes, with brief descriptions, required for the stated job classifications and Attachment 2 provides a matrix of job positions and required training.

Support organization employees are also required to complete identified facility specific training applicable to their involvement with dangerous waste management. LWPF Managers and Team Leaders are responsible for identifying individual employee training requirements, in accordance with this plan, and for ensuring training requirements are met.

1) Training for Emergency Response

Federal and state regulations require all employees be able to respond effectively to emergencies and employees be familiar with emergency procedures, emergency equipment, and emergency systems. Specific topics required by federal and state dangerous waste regulations are addressed throughout the Dangerous Waste Training Program and are included in the following training, as applicable:

- Waste Management Awareness.
- Facility Specific Orientation, including Building Emergency Plan.
- Facility Emergency and Hazard Information Checklist.
- Nuclear Process Operator certification.
- Building Emergency Director training.

2) Non-Hanford Facility Personnel Training

Non-Hanford Facility personnel who will be performing unsupervised work at LWPF must complete training required by WAC 173-303 and 40 CFR 264.16.

Non-Hanford Facility personnel who not will be performing un-supervised work in a facility, such as touring a facility, must be escorted by facility personnel with the training required for the tasks.

The TSD Unit Manager is responsible for ensuring non-Hanford Facility personnel meet applicable access requirements before granting access to the facilities.

5.5 Relevance of Training to Positions

The dangerous waste training program for LWPF employees was developed after reviewing state and federal regulations and the completion of a job analysis for selected positions. Tasks performed by employees were identified and evaluated to determine training requirements. In addition, training needs are evaluated continually in relation to current state and federal regulations.

The LWPF Dangerous Waste Training Program ensures personnel responsible for waste handling are trained properly to perform the job duties pertinent to the handling, storage, treatment, and/or disposal of dangerous wastes.

5.6 Conduct of Training

Training is provided using classroom instruction, On-the-Job Training, and/or computer based training methods. Training is developed and provided by personnel knowledgeable in dangerous waste management policies/procedures.

Hanford Facility personnel shall maintain appropriate knowledge and skills by reviewing training material, required reading, self-paced instruction manuals, lessons learned, group discussions, continued training, etc.. Employees requiring certification are required to recertify annually or biennially, as applicable.

5.7 Documentation of Training

Classroom training is documented on course completion rosters, which are signed by students attending the course. Written examinations are signed by the student at the time of taking the exam and when reviewed with the instructor who grades the examination.

Dangerous Waste Training Plan

Training record files for LWPF employees are stored in the TMX computer database, which is accessed by the Facility Records Specialist. A report is generated from the database to inform facility management when an employee's training is within 90 days of expiration. An example of a TMX report is included in Attachment 3. Copies of completed TSD unit-specific training certifications/qualifications are available from the LWPF Training Department. Additional information regarding training records can be accessed through the Human Resources Information System (HRIS). The HRIS system is managed by the Hanford Training Records organization.

Training record summaries for support organization employees are also stored in the HRIS system. Training records for former employees are kept on the HRIS system for three years from the date the employee last worked at LWPF. Original signed and dated training records are maintained by the Hanford Training Records organization. These records are transferred quarterly to the Records Holding Facility in Richland, Washington. After approximately one year at the Records Holding Center, the original training records are archived.

1) **Access of Training Records**

When a training record is requested during an inspection, an electronic data storage record will be provided. If an electronic data storage record does not satisfy the inspection concern, a hard copy training record will be provided. Training records of former employees may not be readily available to facility personnel and may require a representative from the Training Records organization to access this information.

2) **Determining Current Training Status**

The electronic data storage training record, coupled with this training plan, will give the ability to quickly determine the training status of personnel in the field.

3) **Personnel List**

A list of personnel for Advanced General Workers, General Managers, General Shippers and Waste Designators is maintained on TMX, including the direct link between these positions and the individuals filling the positions. The TMX is updated quarterly.

6.0 ATTACHMENTS

- ATTACHMENT 1. RCRA TRAINING PROGRAM COURSE DESCRIPTIONS
- ATTACHMENT 2. REQUIRED LWPF TRAINING
- ATTACHMENT 1. RCRA TRAINING PROGRAM COURSE DESCRIPTIONS
- ATTACHMENT 2. REQUIRED LWPF TRAINING
- ATTACHMENT 3. EXAMPLE OF TMX DATABASE REPORT

ATTACHMENT 1. RCRA TRAINING PROGRAM COURSE DESCRIPTIONS

The following list of courses constitutes the RCRA training program courses as determined by
(1) the Dangerous Waste Regulations WAC 173-303,
(2) the Hanford Facility RCRA Permit, and
(3) correspondence between RL and Ecology on dangerous waste training.

HANFORD TRAINING COURSES

Title / course number	000001 Hanford General Employee Training
Description	Course covers DOE orders and applicable policies pertaining to employer and employee rights and responsibilities, general radiation training, hazard communications, dangerous waste, fire prevention, personal protective equipment, safety requirements, certain unit/building orientation refresher training, emergency preparedness, accident reporting, and avenues for addressing safety concerns. The RCRA training program identifies this course as a program element as an annual refresher to the Hanford Facility RCRA permit condition concerning training.
Mandating Document(s)	Hanford Facility RCRA Permit, General Condition H.C.2 and 4
Target Audience	All Hanford Facility personnel working on the Hanford Site.
Frequency	Initially and annually thereafter

Dangerous Waste Training Plan

Title	02006G Waste Management Awareness
Description	<p>Course introduces workers to federal laws governing chemical safety in the work place. The course provides the hazardous material/waste worker with the basic fundamentals for safe use of hazardous materials and initial accumulation or storage of dangerous or mixed waste in containers. The concepts covered in this course instruct personnel on specific waste generation procedures and requirements which includes: (1) Applicable waste management practices (i.e., waste stream identification, waste segregation practices, completing container logsheets, and housekeeping requirements), (2) proper responses to incidents pertaining to the waste in the initial accumulation containers, (3) proper responses to dealing with waste of unknown origins, and (4) proper responses to questions posed in the field concerning the above elements.</p>
Mandating Document(s)	<p>Satellite accumulation areas: Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14, 1994, items 3 and 4. Hanford Facility RCRA Permit, General Condition II.C.4</p> <p>90-day accumulation areas: WAC 173-303-330(1) Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14., 1994, items 3 and 4. Hanford Facility RCRA Permit, General Condition II.C.4</p> <p>TSD unit storage containers: WAC 173-303-330(1) Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14., 1994, items 3 and 4. Hanford Facility RCRA Permit, General Conditions II.C.1 and II.C.4</p>
Target Audience	<p>Hanford Facility personnel categorized as a General Worker, Advanced General Worker, and General Manager. Subcontractors categorized as General Workers. Other courses may provide equivalent training so that credit for this course is provided when the electronic data storage training record is generated.</p>
Frequency	<p>One-time-only</p> <p>Justification: The initial accumulation of waste can be conducted under satellite accumulation area provisions in WAC 173-303-200(2), during a project where the 90-day accumulation period starts when the waste is first placed into a container, inside an Area of Contamination during CERCLA or RCRA past practice activities, or in a TSD unit storage container. Annual refresher training is not required because unit/building specifics are adequately covered through the annual BEP and container waste management courses.</p>

Title	020159 Advanced Course 2 - Hazardous Waste Shipper Certification
Description	Course introduces General Shippers to identify shippers' responsibilities and liabilities with regard to compliance to manifesting requirements and DOT regulations, including placarding, identifying proper shipping names, and loading requirements.
Mandating Document(s)	WAC 173-303-330(1), -180, -190, and -370. Hanford Facility RCRA Permit, General Condition II.Q as applicable.
Target Audience	General Shippers of dangerous or mixed waste on roadways anywhere on the Hanford Facility.
Frequency	Every three years.

Title	02028B Building Emergency Director Training
Description	Course provides an overview of the responsibilities of the Building Emergency Director, identifies the building emergency organizations, actions required during an event, implementing the contingency plan, and discusses drill and exercise requirements.
Mandating Document(s)	WAC 173-303-330(1), -340, -350, and -360
Target Audience	Hanford Facility personnel categorized as a General Managers because they perform the responsibilities of a RCRA Emergency Coordinator through the title of Building Emergency Director or alternate. The BED can function over TSD units or generator activities.
Frequency	Initial (Retrained annually by Building Emergency Director Requalification)

Title	035010 Waste Designation
Description	Course teaches dangerous waste designation according to WAC 173-303. Class content includes section-by-section lecture on the regulations, with examples following each section. Students complete examples using a waste designation flow chart. Examples addressed include: listed waste, characteristic waste, and Washington State criteria: toxicity and persistence.
Mandating Document(s)	WAC 173-303-330(1), -070, and -080 through -100
Target Audience	General Shippers and Waste Designators
Frequency	One-time only Justification: Another course, the Waste Designation Qualification course, annually qualifies those personnel who designate waste. General Shippers do not need to be annually retrained in this course because they can rely upon other resources within the company to help them ensure wastes are properly designated.

Dangerous Waste Training Plan

Title	035012 Waste Designation Qualification
Description	Course provides qualification to become a qualified waste designator.
Mandating Document(s)	WAC 173-303-330(1), -070, and -080 through -100
Target Audience	Waste Designators
Frequency	Annual

Title	035020 Facility Waste Sampling and Analysis
Description	Course presents waste sampling methodologies according to EPA Protocols SW-846, "Test Methods for Evaluating Solid Waste Physical/Chemical Methods." This course also covers documentation requirements in a sampling plan, waste analysis plan, field and laboratory quality control/assurance, data quality objectives process, and use of actual sampling equipment as specified by WAC 173-303-110. Finally topics on listed waste management pertaining to sample management and available on-site sampling services are covered.
Mandating Document(s)	WAC 173-303-330(1), -070, -110, and -300
Target Audience	General Shippers
Frequency	One time only Justification: In most cases on the Hanford Facility, the General Shipper will utilize resources from outside organizations to physically acquire samples. In addition, the General Shipper will also rely on the review and approval process for the development and issuance of Sampling and Analysis Plans regarding a sampling effort. This training provides an overview of information to ensure that sampling efforts are properly arranged for and planned.

Title	035100 Container Waste Management - Initial
Description	<p>Course covers general training requirements pertaining to waste management in container at 90-day accumulation areas and TSD units. The course incorporates WAC 173-303-200(1), -630, DOE orders, and FDH policy for container management. Includes practical exercises for hands-on experience with the packaging of dangerous or mixed waste, and preparation of packages for final destination.</p> <p>This course does not cover waste management aspects pertaining to other RCRA waste management units such as tank systems, surface impoundments, containment buildings, landfills, etc.</p>
Mandating Document(s)	WAC 173-303-330(1), -630, -200(1) and Waste Minimization
Target Audience	Advanced General Workers and General Managers categorized because they are immediate managers of Advanced General Workers who manage containers of dangerous or mixed waste.
Frequency	Initial only (refresher - Container Waste Management Training)

Title	035110 Container Waste Management - Refresher
Description	Refresher Course - Container Waste Management - Initial
Mandating Document	WAC 173-303-330(1), -630, -200(1), and waste minimization
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage dangerous or mixed waste in containers.
Frequency	Annual

Title	035120 Waste Management Administration - Initial
Description	<p>Course is designed for personnel preparing to become shippers of dangerous and/or mixed waste. This course covers regulatory and company policies, forms, reports, forecasts, and plans. Topics also covered include: waste characterization, waste storage disposal request, low level waste storage/disposal record, transuranic waste storage/disposal record, and radioactive mixed waste attachment sheet. In addition, students will learn how these forms are used to complete shipping papers.</p>
Mandating Document(s)	WAC 173-303-330(1), -630, -200, -210, -220, -380, and -390.
Target Audience	General Shippers
Frequency	Initial only (Refresher - Waste Management Administration)

Dangerous Waste Training Plan

Title	035130 Waste Management Administration - Refresher
Description	Refreshes course - Waste Management Administration - Initial
Mandating Document(s)	WAC 173-303-330(1), -630, -200, -210, -220, -380, and -390.
Target Audience	General Shippers
Frequency	Annual

Title	037510 Building Emergency Director Requalification
Description	Refresher for Building Emergency Director Training
Mandating Document(s)	WAC 173-303-330, -340, -350, and -360
Target Audience	General Manager categorized because they can act as RCRA Emergency Coordinator in WAC 173-303-360.
Frequency	Annual

Title	03E096 Unit/building-Specific Contingency Plan/Hazard Communication/Emergency Preparedness Training for 242-A Evaporator/LERF (Uses "Facility Emergency and Hazard Information Checklist", A-6000-784R)
Description	Course consists of a review of specific chemical hazards associated with each RCRA waste management unit and job assignment, as covered by a RCRA contingency plan. The training is completed by the supervisor, manager, or a designated individual using a checklist available on the Hanford Local Area Network under Jet Forms. The unit/building-specific information is reviewed concerning hazards in the work area and emergency response requirements, including where applicable, waste feed cut-off, communication and alarm systems, and response to fires. The training is completed by the immediate manager, or a designated individual using a checklist. The checklist acts as a guide to ensure consistent coverage of necessary topics.
Mandating Document(s)	WAC-173-303-330, -340, and -350 Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14,, 1994, items 3 and 4. Hanford Facility RCRA Permit, General Condition II.C.4
Target Audience	All Hanford Facility personnel assigned to, or performing work at 242-A Evaporator/LERF. Non-Hanford personnel who will perform work unsupervised.
Frequency	Annual

Dangerous Waste Training Plan

Title	03E074 Unit/Building-Specific Contingency Plan/Hazard Communication/Emergency Preparedness Training for ETF/LERF (Uses "Facility Emergency and Hazard Information Checklist", A-6000-784R)
Description	Course consists of a review of specific chemical hazards associated with each RCRA waste management unit and job assignment, as covered by a RCRA contingency plan. The training is completed by the supervisor, manager, or a designated individual using a checklist available on the Hanford Local Area Network under Jet Forms. The unit/building-specific information is reviewed concerning hazards in the work area and emergency response requirements, including where applicable, waste feed cut-off, communication and alarm systems, and response to fires. The training is completed by the immediate manager, or a designated individual using a checklist. The checklist acts as a guide to ensure consistent coverage of necessary topics.
Mandating Document(s)	WAC-173-303-330, -340, and -350 Letter: RL/US Army Corps of Engineers to Ecology "State of Washington Department of Ecology Administrative Order No. DE 94NM-063" dated April 14., 1994, items 3 and 4. Hanford Facility RCRA Permit, General Condition II.C.4
Target Audience	All Hanford Facility personnel assigned to, or performing work at ETF/LERF. Non-Hanford Facility personnel who will perform work unsupervised.
Frequency	Annual

Title	350400 242-A Evaporator Operator Certification
Description	Qualifies NPOs to control 242-A Evaporator systems.
Mandating Document(s)	WAC-173-303-330, -640
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage mixed waste in tank systems.
Frequency	Biennial

Title	350540 242-A Evaporator Orientation
Description	Introduction to the 242-A Evaporator, including facility mission, hazards and emergency response procedures. (Includes BEP)
Mandating Document(s)	WAC-173-303-330 Hanford Facility RCRA Permit, General Condition II.C.2
Target Audience	All Hanford Facility personnel assigned to, or doing work at, the 242-A Evaporator. Non-Hanford Facility Personnel who will perform work unsupervised.
Frequency	Annual

Dangerous Waste Training Plan

Title	705020 LWPF Hazardous Material/Waste Handling
Description	Presents Waste Handlers with state, federal and Hanford specific regulations on waste handling, including: segregation, packaging, and disposal.
Mandating Document(s)	WAC-173-303-330, -630
Target Audience	All General Workers, and Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage dangerous or mixed waste in containers.
Frequency	Annual

Title	705120 LWPF Outside Operator Certification
Description	Qualifies NPOs to operate those systems under the control of the LWPF Outside Operator, including: TEDF, Load-In Station, and LERF.
Mandating Document(s)	WAC-173-303-330, -640, -650
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage dangerous or mixed waste in tank systems and/or surface impoundments.
Frequency	Biennial

Title	705125 LWPF Primary Systems Operator Certification
Description	Qualifies NPOs to operate the ETF's Primary Treatment Train systems, including the UV/OX and the RO systems.
Mandating Document(s)	WAC-173-303-330, -640
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage mixed waste in tank systems.
Frequency	Biennial

Title	705130 LWPF Secondary Systems Operator Certification
Description	Qualifies NPOs to operate the ETF's Secondary Treatment Train systems, including the Secondary Waste Receiving Tanks and the ETF Evaporator and Thin Film Dryer.
Mandating Document(s)	WAC-173-303-330, -640
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage mixed waste in tank systems.
Frequency	Biennial

Title	705135 ETF Control Room Operator Certification
Description	Qualifies NPOs to control ETF and TEDF systems from a centralized computer system, including emergency response procedures.
Mandating Document(s)	WAC-173-303-330, -340, -350, 360, -630, and -640.
Target Audience	Advanced General Workers and General Managers who are categorized because they are immediate managers of Advanced General Workers who manage dangerous or mixed waste in containers and/or tank systems. General Managers who are Building Emergency Directors.
Frequency	Biennial

Title	705700 200 Area LEF Facility Orientation
Description	Introduction to the ETF, LERF and TEDF facilities including: facility missions, hazards, and emergency response procedures.
Mandating Document(s)	WAC-173-303-330 Hanford Facility RCRA Permit, General Condition II.C.2
Target Audience	All Hanford Facility personnel assigned to, or doing work at ETF, LERF, or TEDF. Non-Hanford Facility Personnel who will perform work unsupervised.
Frequency	Annual

ATTACHMENT 2. REQUIRED LWPF TRAINING

Position	Job Title	Required Training
All Employee	All other Job Titles not specifically listed below.	000001, 350540 ¹ , 705700 ² , 03E096 ¹ , 03E074 ²
General Worker	Radiological Control Technician, Maintenance Personnel, including: Electrician, Instrument Technician, Insulator, Millwright, Painter, Pipefitter, Power Operator, Process Crane Operator, Rigger, Sign Painter, Truck Driver, Welder Maintenance Manager, Radiological Control Manager	000001 02006G 350540 ¹ 705700 ² 03E096 ¹ 03E074 ²
Advanced General Worker	Nuclear Process Operator	000001, 02006G, 035100, 035110, 705120 ² , 705125 ² , 705130 ² , 705135 ² , 350400 ¹ , 03E096 ¹ , 03E074 ²
General Manager	Operations Manager, Shift Operations Managers, Environmental Compliance Officer, Person-in-Charge, Hazardous Material Coordinator	000001, 02006G, 02028B, 037510, 035100, 035110, 350540 ¹ , 705700 ² , 03E096 ¹ , 03E074 ²
General Shipper	Shipper	000001, 02006G, 020159, 035010, 035020, 035100, 035110, 035120, 035130, 350540 ¹ , 705700 ² , 03E096 ¹ , 03E074 ²
Waste Designator	Waste Designator	000001, 035010, 035012, 350540 ¹ , 705700 ² , 03E096 ¹ , 03E074 ²

Notes:

1. These classes are specific to the 242-A Evaporator and are not required for personnel who work exclusively at LERF/ETF. TMX provides information on personnel who work exclusively at 242-A Evaporator or LERF/ETF.
2. These classes are specific to the LERF/ETF and are not required for personnel who work exclusively at the 242-A Evaporator. TMX provides information on personnel who work exclusively at 242-A Evaporator or LERF/ETF.

Dangerous Waste Training Plan

ATTACHMENT 3. EXAMPLE OF TMX DATABASE REPORT

***** BUSINESS SENSITIVE *****

POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code:
 Manager:
 Organization : 200A EFFLUENT TREATMENT FAC OPS
 Position: Shift Ops Mgr - ETF (GM)

Matrix Last Modified on 07/19/97
 30 Days Delinquent Forecast

07/21/97 Position 1
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Course No.	Title	Retrain Course	Individual #1	Individual #2	Individual #3	Individual #4
M 000001	HGET	000001	09/30/97	10/10/97	01/10/98	08/26/97
M 003034	LOCK & TAG - AUTH WRKR INITIAL	003037	11/15/97	10/29/97	11/18/97	03/10/98
M 020001	RAD WORKER TRNG II - INIT	020003	08/06/98	11/09/97	07/11/98	09/24/98
M 020030	SCBA ANNUAL	020030	05/09/98	10/04/97	05/22/98	06/04/98
M 020032	SCOTT SKA-PAK AIRLINE SYSTEM	020032	05/09/98	10/04/97	05/22/98	06/04/98
M 020041	BASIC RESP PROTECT TRNG	020041	01/10/98	10/30/97	09/05/97	11/19/97
M 020044	QUANTITATIVE MASK FIT	020044	01/10/98	10/30/97	09/05/97	11/19/97
M 02006G	WASTE MANAGEMENT AWARENESS	-----	OK	OK	OK	OK
M 020130	CONFND SPC ENTRY (CSE)	-----	OK	OK	OK	OK
M 02028B	BLDG EMER DIR TRNG	037510	02/18/98	02/04/98	01/28/98	01/11/98
M 020702	RAD WORKER I/II REFRESH	020702	09/30/98	10/10/98	01/09/99	08/26/98
M 031110	24 HR RCRA TSD HAZ WASTE	032020	05/09/98	10/09/97	05/22/98	06/04/98
M 350540	242-A EVAPORATOR ORIENT	-----	OK	OK	OK	OK
M 703036	LWPF LOCK & TAG	703036	12/31/98	12/31/98	01/09/99	12/31/98
M 705020	200 AREA WSTE HNDLING OPS	-----	OK	OK	OK	OK
M 705700	200A LEF FAC ORIENT	705700	09/30/97	10/10/97	01/10/98	08/26/97
D 000390	OJT TRAINING WORKSHOP	-----	OK	OK	OK	OK
D 020107	BHVR BASED SAFETY TRNG	-----	OK	OK	OK	OK
D 020704	RAD CON MANUAL TRNG - MGRS	-----	OK	OK	OK	OK
D 03E074	BLDG EMERG PLAN - 0263 - ETF	03E074	09/30/97	10/10/97	01/09/98	08/26/97
D 03E096	242A EVAP/LERF FAC EMERG ID CH	03E096	03/19/98	12/19/97	03/12/98	03/12/98
D 042720	AERIAL LIFT OPER TRNG	043920	05/17/98	/ /	06/15/98	04/07/00
D 044470	FORKLIFT OPERATNL SAFETY	041890	03/18/00	/ /	11/29/98	11/22/99
D 044480	MEDIUM RISK ELECT SAFETY	044480	12/12/97	04/30/00	< <08/16/97 > >	09/13/97

LEGEND

Upper case (M/D/C/P) = Course needed by all
 Lower case (m/d/c/p) = Course needed by some
 * = Retrain not to be maintained
 << / / >> = Course delinquent
 / / = Course needed (upper case) but not taken
 Date = Course retrain date
 OK = Course taken; no retrain required
 **** = Course taken; retrain requirement not maintained
 Blank = Course not needed (lower case) and not taken

To delete specific employee retrain dates for lower case (m, d, c, p): See TMX Main Menu 5., TMX Course Alternates.

Dangerous Waste Training Plan

***** BUSINESS SENSITIVE *****

POSITION TRAINING REPORT

***** BUSINESS SENSITIVE *****

Tracking Code:
 Manager:
 Organization : 200A EFFLUENT TREATMENT FAC OPS
 Position: Shift Ops Mgr - ETF (GM)

Matrix Last Modified on 07/19/97
 30 Days Delinquent Forecast

07/21/97 Position 1
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	Course No.	Title	Retrain Course	Individual #1	Individual #2	Individual #3	Individual #4
D	170500	BASIC MEDIC FIRST AID	170535	01/23/98	03/05/99	08/05/98	09/13/97
D	170640	QTRC - INTRO TO OCC RPTG	-----	OK	OK	OK	OK
D	170642	OCCURRENCE REPORT WRITING	-----	OK	OK	OK	OK
D	170656	HANDS-ON FIRE EXTINGSHR	170656	05/14/98	03/06/98	< <06/12/97 >	08/28/97
D	705035	200 AREA LEF EP/APC	705035	09/30/97	09/30/97	10/28/97	10/21/97
D	705120	200 LEF OUTSIDE OPER CERT	705120	03/07/99	12/26/98	03/10/99	03/13/99
D	705125	200 AR PRMRY SYS OPR CER	705125	09/20/97	03/24/99	09/20/97	10/04/97
D	705130	200 LEF SCNDRY WSTE OPER	705130	09/20/97	03/24/99	09/20/97	10/04/97
D	705135	200 LEF CNTRL RM OP CERT	705135	09/20/97	03/24/99	09/20/97	10/04/97
m	020140	FALL PROTECTION TRAINING	-----				
d	001000	CONDUCT OF OPS - INTRO	-----	OK	OK	OK	OK
d	001005	OVERVIEW CONDUCT OPERTNS	-----	OK	OK	OK	OK
d	010108	WORK MGT & JCS OVERVIEW	010108	****		****	****
d	02006L	ASBESTOS CONTROL	02006L		05/27/98		
d	040784	BASIC CRANE & RIGGING SAFETY	040788		****		
d	060760	COND IND WTR HAMMER SFTY	060765		****	****	05/06/98
d	080969	NEW MANAGER ORIENTATION	-----			OK	
d	705115	200A LEF PIC TRAINING	-----	OK	OK	OK	OK
d	705140	200 ETF SHTDN SHFT OPS MGR QUL	705140		01/06/99		
p	080553	SELF ASSESS FOR MGT SKLS	-----				
p	080810	COM SKILLS WORKSHOP	-----		OK		OK
p	080925	SEXUAL HARASSMENT WRKPL	-----			OK	
p	170002	RISK EVALUATION	-----	OK		OK	
p	170654	SELF ASSES 1ST LIN SPVSR	-----				
p	170780	INTRO TO OSHA STDS	-----			OK	

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11.0 CLOSURE AND FINANCIAL ASSURANCE [I]

This chapter describes the planned activities and performance standards for closing the 242-A Evaporator. Final closure will begin when the 242-A Evaporator is no longer needed.

11.1 CLOSURE PLAN/FINANCIAL ASSURANCE FOR CLOSURE [I-1]

The 242-A Evaporator will be clean closed with respect to dangerous waste contamination that resulted from operation as a TSD unit. To facilitate closure, the 242-A Evaporator is being viewed as consisting of six components: tanks, ancillary equipment, piping, concrete floors/liners, structures, and underlying soil. Only areas that have treated, stored, or handled dangerous waste will undergo closure activities. Remedial actions with respect to contamination that was not a result of use of these areas for treatment, storage, or handling of dangerous waste are outside the scope of this closure plan.

Contaminated equipment, tanks, and piping removed from the 242-A Evaporator will be considered "debris" and transported to an appropriate permitted treatment, storage, or disposal unit for final disposition. Uncontaminated structures either will be left for future use or disassembled, dismantled, and removed for disposal. Uncontaminated equipment and structures could include aqueous makeup, HVAC and piping, steam condensate and cooling water piping, and the control room and office areas.

The pipes located west and north of the 242-A Evaporator, which connect to A Farm and AW Farm, are in the same bundles with pipes used for transfers between tanks in the DST System. To minimize radiation exposure during closure, these pipes will be closed at the same time the piping for the DST System is closed. Closure of these pipes will be performed per *Double-Shell Tank System Dangerous Waste Permit Application* (DOE/RL-90-39). The pipelines between the 242-A Evaporator and the 207-A pump pit, and in the 207-A pump pit, which were previously used for transfer of process condensate, will be closed per this closure plan.

Clean closure requires decontamination or removal and disposal of all dangerous waste, waste residues, contaminated equipment, soil, or other material established in accordance with the clean closure performance standards of WAC 173-303-610(2). This and future closure plan revisions will provide for compliance with these performance standards. All work will be performed as low as reasonably achievable (ALARA) with respect to worker exposure to dangerous and/or any other workplace hazards. Activities that are planned to achieve clean closure are presented in the following sections.

11.2 CLOSURE PERFORMANCE STANDARD [I-1a]

Clean closure, as provided for in this plan, and in accordance with WAC 173-303-610(2), will eliminate future maintenance and will be protective of human health and the environment.

After closure, the appearance of the land where the 242-A Evaporator is located will be consistent with the appearance and future use of the surrounding land areas. This closure plan proposes to leave clean structures and equipment in place after closure for potential future operations. This need will be evaluated at the time of closure.

11.2.1 Closure Standards for Metal Surfaces, and Concrete

This closure plan proposes use of a 'clean debris surface' (defined in the following paragraph) as the clean closure performance standard for the metal surfaces, and concrete that will remain after closure. This approach is consistent with Ecology guidance (Ecology 1994) for achievement of clean closure.

1
2 Attainment of a clean debris surface can be verified visually in accordance with the standard that states, "A
3 clean debris surface means the surface, when viewed without magnification, shall be free of all visible
4 contaminated soil and hazardous waste except residual staining from soil and waste consisting of light
5 shadows, slight streaks, or minor discolorations and soil and waste in cracks, crevices, and pits may be
6 present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no
7 more than 5% of each square inch of surface area" (40 CFR 268.45).

8
9 Decontamination of concrete, per the 'debris rule' is based on a physical extraction method (40 CFR
10 268.45, Table 1). The performance standard is based on removal of the contaminated layer of debris. The
11 physical extraction performance standard for concrete is removal of 0.6 centimeter of the surface layer and
12 treatment to a clean debris surface.

13 14 **11.2.2 Closure Standards for Tanks**

15
16 Using the 242-A Evaporator's decontamination system, the tank system could be flushed and
17 decontaminated. The rinsate will be sampled and analyzed. Results of the analysis with less than
18 designation limits for the constituents of concern will be accepted as indicating that the tanks are clean with
19 respects to dangerous waste residues. An alternative to decontaminating the tanks is to remove and dispose
20 of the tanks accordingly.

21 22 **11.2.3 Closure Standards for Internal and/or External Piping**

23
24 The internal and/or external piping of 242-A Evaporator will be flushed and drained as part of closure.
25 The rinsate will be sampled, and analyzed. Results less than designation limits for the constituents of
26 concern will be accepted as indicating that the piping is clean with respect to dangerous waste or dangerous
27 waste residues.

28 29 **11.2.4 Closure Standards for Ancillary Equipment**

30
31 Ancillary equipment is defined as pumps and other miscellaneous equipment not otherwise specified in this
32 closure plan. Ancillary equipment will be removed and disposed.

33 34 **11.2.5 Closure Standards for Underlying Soils**

35
36 Clean closure of soil under the 242-A Evaporator will be accomplished by determining that the coated
37 concrete floor and stainless steel liners, kept contaminants from reaching the soil. The coated concrete and
38 liners provided secondary containment for all the tanks, process piping, and ancillary equipment within the
39 building. Unless inspections identify potential through-thickness cracks indicating containment failure and
40 a subsequent potential for soil contamination from TSD unit operations, the soil will be considered clean
41 closed. However, if inspections identify such cracks, and there have been documented spills in the vicinity,
42 potential soil contamination will be investigated. Soils will be sampled and analyzed for constituents of
43 concerns. If the soil analytical results determine that the constituents of concern are at or below agreed to
44 regulatory cleanup levels, the soil will be considered clean closed. Regulatory cleanup levels are defined by
45 the Hanford Facility RCRA Permit (Condition II.K.). Sampling and disposal objectives will be determined
46 at the time of closure activities through the data quality objectives process. If verification sampling is
47 required, a sampling analysis plan will be prepared before closure in a manner consistent with Ecology
48 guidance (Ecology 1994) for achievement of clean closure.

1 **11.3 CLOSURE ACTIVITIES [I-1b]**

2
3 At the time of closure, the closure plan will be modified as necessary to reflect current regulations and
4 information. If it is determined that clean closure is not possible, the closure plan will be modified to
5 address required postclosure activities.

6
7 **11.3.1 General Closure Activities**

8
9 The approach to 242-A Evaporator closure is to dispose of accumulated liquid waste by transferring the
10 waste to the LERF. After the waste has been removed, clean closure of the tanks, process equipment, the
11 piping, concrete/liners, and the structures will be accomplished by decontaminating the components, as
12 necessary, and demonstrating that clean closure performance standards are met. Clean closure of the soil
13 will be accomplished by demonstrating that the concrete and liners kept the contaminants from reaching the
14 soil. If it is determined that soil contamination is possible, investigation and cleanup of the soils will be
15 managed appropriately. All work will be performed ALARA with respect to worker exposure to dangerous
16 and/or mixed waste, radioactivity, hazardous chemicals, or any other workplace hazards. Contamination,
17 if present, will be managed in compliance with regulatory requirements.

18
19 Equipment or materials used in performing closure activities will be decontaminated or disposed at a
20 permitted facility.

21
22 **11.3.2 Constituents of Concern for Closure for 242-A Evaporator**

23
24 Based on process knowledge and the risk to human health and the environment, the constituents of concern
25 for closure will be selected from the list of dangerous waste numbers in Chapter 1.0 through the data
26 quality objective process.

27
28 **11.3.3 Removing Dangerous Waste [I-1b(2)]**

29
30 All of the waste inventory at the 242-A Evaporator will be processed before closure. Any residue
31 remaining in piping and equipment will be removed to an appropriate TSD unit.

32
33 **11.3.4 Decontaminating Structures, Equipment, and Soils [I-1b(3)]**

34
35 Before closure activities begin, all waste inventory will be removed. To facilitate closure, tanks, internal
36 and/or external piping, ancillary equipment, concrete floors/liners, structures, and soil directly beneath the
37 structure will be decontaminated, as necessary, to demonstrate that the clean closure performance standards
38 are met.

39
40 Removal and disposal of most of the components will be determined at the time of closure. Clean closure
41 of the soil will be accomplished by demonstrating that the concrete/liners kept contaminants from reaching
42 the soil.

43
44 **11.3.4.1 Tanks**

45
46 After all pumpable waste has been removed from the tanks, the interior of the tanks, including the internal
47 components such as the agitator, either will be flushed and decontaminated by adding or spraying with
48 steam, a water-soluble cleaner, or other approved method, or removed as debris and disposed
49 appropriately.

1 If the tanks are decontaminated, the tanks will be inspected visually for compliance with the performance
2 standard. Because of possible radiation exposure, visual inspection of the vapor-liquid separator will be
3 made remotely using a camera or other device that allows verification of meeting the standard. If any areas
4 are found to not meet the clean debris surface performance standard, these areas will be decontaminated
5 in-place. Per the debris rule, only removal of contaminants from the surface layer is necessary for metal
6 surfaces. Contamination will be removed from the surface layer using either high-pressure water blasting
7 (a physical extraction method) or by hand or remote wiping, washing, brushing, or scrubbing using an
8 approved cleaner, and rinsing with water or by other appropriate methods.

9
10 If the decontamination option is used, the outside of the tanks also will be inspected for compliance to the
11 performance standard. Any areas found to not meet this performance standard will be decontaminated
12 in-place. Contamination will be removed from the surface layer using any of the methods described for
13 internal tank decontamination or another appropriate method. Before using decontamination solutions on
14 the outside of the tanks, the floor will be inspected for cracks or other openings that could provide a
15 pathway to soil. This inspection will be performed as described in Section 11.2.1 in conjunction with
16 mapping of potential through-thickness cracks. Any such cracks will be mapped. The cracks will be
17 sealed before beginning treatment or other engineered containment devices (e.g., collection basins) will be
18 used to collect and contain solutions.

19
20 Decontamination residues will be collected, designated, and managed. If it is not possible to meet the clean
21 closure performance standard, contaminated portions of the tanks could be removed, designated, and
22 disposed of accordingly. The inspections for a clean debris surface will be documented on an inspection
23 record.

24 25 **11.3.4.2 Internal and/or External Piping and Ancillary Equipment**

26
27 The initial closure activity for the piping that is associated with the areas undergoing closure will be to
28 identify the lines that might have carried dangerous waste. Only piping that might have carried dangerous
29 waste will undergo closure activities.

30
31 The piping that will undergo closure will be rinsed and the rinsate will be sampled and analyzed for the
32 constituents of concern. The constituents of concern will be based on knowledge of what constituents were
33 in the dangerous waste carried through the particular piping. The flushing, sampling, and analysis will be
34 repeated until the rinsate no longer designates as dangerous waste. If the rinsate does not designate based
35 on the concentrations of the constituents of concern, the piping will be considered clean with respect to this
36 closure. If necessary, the piping will be rinsed with a decontamination solution before sampling and
37 analyses. If it is not possible to meet the clean closure standard, portions of the piping will be removed,
38 designated, and disposed of accordingly. The ancillary equipment will be removed, designated, and
39 disposed of accordingly.

40
41 The 207-A pump pit, located east of the 242-A Evaporator, will be closed using the performance standards
42 for pipes and concrete. A visual inspection will be performed. If the interior surfaces meet the
43 performance standards, the 207-A pump pit will be considered clean closed. If the performance standards
44 are not met, the interior surfaces will be cleaned using an appropriate decontamination method and the
45 method repeated until the surfaces meet the clean closure performance standard.

46 47 **11.3.4.3 Concrete/Liner**

48
49 The coated concrete floor and the pump room sump liner provide secondary containment for all the tanks,
50 process piping, and ancillary equipment. All concrete and liners will be inspected visually and surveyed

1 radiologically before any decontamination. The purpose of the inspection will be twofold: to identify and
2 map any cracks in the concrete that might have allowed contaminants a pathway to the soil below
3 (Section 11.1.2.3) and to identify areas that potentially are contaminated with dangerous waste or
4 dangerous waste residues. The inspection standard will be a clean debris surface as defined in
5 Section 11.2.1.1. The inspection of the concrete for a clean debris surface will be documented on an
6 inspection record. Those areas already meeting the standard will be clean closed as is.

7
8 Those potentially contaminated areas will undergo decontamination to meet the clean closure standard of a
9 clean debris surface. The concrete will be washed down, the rinsate collected, designated, and disposed of
10 accordingly. The concrete will be re-inspected for a clean debris surface. Concrete surfaces indicated by
11 visual examination as potentially still being contaminated will have the surface layer removed to a depth
12 of 0.6 centimeter by scabbling or other approved methods. This will not threaten the environment, even if
13 potential through-thickness cracks had been found during the inspection, because concrete decontamination
14 (scabbling) will not employ liquid solutions that could enter cracks and because scabbling residues will be
15 vacuumed away from cracks as any residue is generated.

16
17 Achievement of a clean debris surface will be documented on an inspection record. Decontamination
18 residues will be collected, designated, and managed as appropriate.

19 20 11.3.4.4 Structures

21
22 If contaminated with either dangerous or mixed waste constituents, structures will be decontaminated
23 and/or disassembled, if necessary, packaged, and disposed in accordance with existing land disposal
24 restrictions (WAC 173-303-140).

25
26 Closure steps could include the following activities.

- 27
28 • Containerize (as necessary and practicable) and remove any remaining waste.
- 29
30 • Review operating records for spillage incidents and visually inspect area surfaces for evidence of
31 contamination or for cracks that could harbor contamination or allow the escape of decontamination
32 solutions. Inspect storage area surfaces for visible evidence of contamination (e.g., discoloration,
33 material degradation, wetness, odor). If contamination is evident, the affected area(s) will be
34 decontaminated.
- 35
36 • Decontaminate walls and floors to minimize the potential for loose contamination and to facilitate any
37 required radiation surveys and/or chemical field screening. Wash down could be by water rinse or
38 high-pressure, low-volume steam cleaning coupled with a detergent wash. After decontamination, the
39 building walls and floor will be compared to closure performance standards.
- 40
41 • Collect rinsate and manage as dangerous waste for appropriate disposal.
- 42
43 • Secure (lock) personnel entries into building and post doors with appropriate warning signs.

44
45 Clean closure of structures will occur in accordance with WAC 173-303-610. Remediation of soil
46 contamination beneath or around containment buildings will be performed in conjunction soil closure
47 requirements.

1 **11.3.4.5 Underlying Soils**

2
3 Clean closure of soil under the 242-A Evaporator will be accomplished by demonstrating that the coated
4 concrete floor and stainless steel liners kept contaminants from reaching the soil. The coated concrete floor
5 provided secondary containment for all the tanks, process piping, and ancillary equipment. Unless
6 inspections identify potential through-thickness cracks indicating containment failure and a subsequent
7 potential for soil contamination from TSD unit operations, the soil will be considered clean closed.
8 However, if inspections identify such cracks, and there have been documented spills in the vicinity,
9 potential soil contamination will be investigated.

10
11 Where it is possible to visually inspect directly beneath the tanks, a visual inspection will be performed.
12 Where it is not possible to visually inspect beneath the tanks, an evaluation of the tank integrity will be
13 made. The condition of the tank will be evaluated to determine if there was any potential for leakage. If no
14 cracks, severe corrosion, or evidence of leaks are observed, it will be reasoned that mixed or dangerous
15 waste solutions could not have penetrated to the soil directly below the tank.

16
17 External piping between the 242-A Evaporator and the 207-A pump pit is double-lined with a leak
18 detection system. If records indicate that no leaks from the primary piping occurred, the soil will be
19 considered clean with respect to RCRA closure.

20
21 **11.4 MAXIMUM WASTE INVENTORY [I-1c]**

22
23 The 242-A Evaporator is used to treat mixed waste from the DST System by removing water and most
24 volatile organics. Two waste streams leave the 242-A Evaporator following the treatment process. The
25 first waste stream, the concentrated slurry (in which approximately half the water content is removed and a
26 portion of the volatile organics), is pumped back into the DST System. The second waste stream, process
27 condensate (containing a portion of the volatile organics removed from the mixed waste during the
28 evaporation process), is routed through condensate filters before being transferred to LERF. The 242-A
29 Evaporator is used to treat up to 870,642 liters of mixed waste per day.

30
31 Tank C-100 receives process condensate and potentially contaminated drainage from the vessel vent
32 system. The maximum design capacity for the C-100 tank is 67,380 liters.

33
34 Vapor-liquid separator, C-A-1, is located in the evaporator room and is used to separate vapor from the
35 boiling slurry solution and deentrain liquid from the vapor before it enters the condensers in the condenser
36 room. The maximum design capacity of C-A-1 is 103,217 liters.

37
38 **11.5 CLOSURE OF TANKS**

39
40 Clean closure of 242-A Evaporator will consist of the removal and disposal of all dangerous waste and the
41 decontamination and/or removal and disposal of contaminated equipment, including tanks.

42
43 **11.6 SCHEDULE FOR CLOSURE [I-1f]**

44
45 Closure of 242-A Evaporator is not anticipated to occur within the next 15 to 20 years. The actual
46 year of closure will depend on the time required for current waste to be processed and what role the
47 242-A Evaporator will play in processing additional waste generated during future activities in the
48 200 Areas. Other factors affecting the year of closure include changes in operational requirements, lifetime
49 extension upgrades, and unforeseen factors. When a definite closure date is established, a revised closure
50 plan will be submitted to Ecology.

- 1 The activities required to complete closure are planned to be accomplished within 180 days. Should a
- 2 modified schedule be necessary, a revised schedule will be presented and agreed to before closure.
- 3

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2
3
4
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Hanford Facility RCRA Permit Modification Notification Forms
for
Part III, Chapter 2 and Attachment 18
305-B Storage Facility

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Part A , Form 3, Permit Application]

Description of Modification:

Page 19 of 25, lines 1-17:

1	U	2	4	5	200		K	S01			
2	U	2	4	6	200		K	S01			
3	U	2	4	7	200		K	S01			
4	U	2	4	8	200		K	S01			
5	U	2	4	9	200		K	S01			
6	U	3	2	8	200		K	S01			
7	U	3	5	3	200		K	S01			
8	U	3	5	9	200		K	S01			
9	W	0	0	1	5000		K	S01			
10	W	0	0	1	1000		K	S01			
11	W	0	0	2	1000		K	S01			
12	W	P	0	1	5000		K	S01			
13	W	P	0	2	1000		K	S01			
14	W	P	0	3	500		K	S01			
15	W	T	0	1	30000		K	S01			
16	W	T	0	2	20000		K	S01			
17	W	0	0	2	5000		K	S01			

Modification Class: ²³

please check one of the Classes:

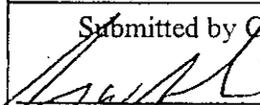
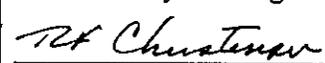
Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:  G.W. McNair	Reviewed by RL Program Office:  R.F. Christensen	Reviewed by Ecology: J. J. Wallace
6/16/98 Date	7/7/98 Date	Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4.0]
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Description of Modification:

Page 4-i, lines 1-28: Remove and replace Chapter 4, document was converted to Word 97 causing pages to shift.

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Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

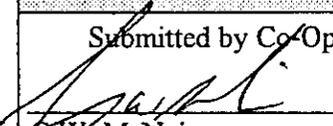
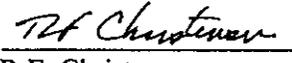
- A. General Permit Provisions:
 1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
 G.W. McNair	 R.F. Christensen	J. J. Wallace
6/17/98 Date	7/7/98 Date	Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form					
Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4, Figure 4-2]				
<u>Description of Modification:</u> Page 4-9, Figure 4-2. Poisons and Class 9 Cell: Remove and replace Figure 4-2.					
Modification Class: ²³ please check one of the Classes:	Class 1 X	Class ¹	Class 2	Class 3	
Relevant WAC 173-303-830, Appendix I Modification: A.1.					
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions 1. Administrative and informational changes					
Submitted by Co-Operator:  G.W. McNair	Date 6/16/98	Reviewed by RL Program Office:  R.F. Christensen	Date 7/7/98	Reviewed by Ecology: J. J. Wallace	Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.8]

Description of Modification:

Section 4.1.1.6.8, Page 4-11, lines 35-36:

4.1.1.6.8 Acid Waste Drum Storage Area. A third section of the high bay has been designated for storage of drum quantities of acid waste prior to offsite shipment. The area is ~~constructed similarly to the ignitable waste drum storage area (see above) and is~~ approximately 10'x10' in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident. Bulked drums containing acids, with oxidizers as a secondary hazard, will be placed in the cell I drum area, to prevent any possibility of a reaction with surrounding hazards in the high bay drum storage area.

Modification Class: ²³

please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

1. Administrative and informational changes

Submitted by Co-Operator

G.W. McNair

6/16/98

Date

Reviewed by RL Program Office:

R.F. Christensen

7/7/98

Date

Reviewed by Ecology:

J. J. Wallace

Date

¹Class 1 modifications requiring prior Agency approval.

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³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.9]

Description of Modification:

Section 4.1.1.6.9, Page 4-11, lines 29-34:

Insert new section 4.1.1.6.9 and renumber applicable sections that follow:

4.1.1.6.9. Caustic Waste Drum Storage Area. A fourth section of the high bay has been designated for storage of drum quantities of caustic waste prior to offsite shipment. The area is approximately 22'x15' in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident. Sump containment capacity in this area is approximately 110 gallons and total containment capacity is approximately 380 gallons. Maximum storage in this area is thirty-two 55-gallon drums. The location of the area is shown on the High Bay Storage Area diagram Figure 4-7.

Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
1. Administrative and informational changes

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
 G.W. McNair	 R.F. Christensen	J. J. Wallace
Date	Date	Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4, Figure 4-7]

Description of Modification:

Pages 4-15 and 4-16, Figure 4-7. High Bay Storage Area: Remove and replace Figure 4-7, updated to show location of explosives magazine.

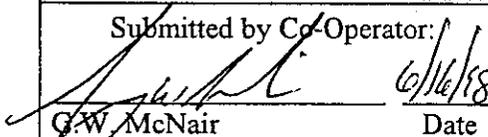
Modification Class: ²³ please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			

Relevant WAC 173-303-830, Appendix I Modification: A.3.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

3. Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps, conveyors, controls)

Submitted by Co-Operator:  G.W. McNair	Date 6/16/18	Reviewed by RL Program Office:  R.F. Christensen	Date 7/7/18	Reviewed by Ecology: J. J. Wallace	Date
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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4.1.1.6.10]
--	---

Description of Modification:

Section 4.1.1.6.10., Page 4-17, lines 19-29:

4.1.1.6.10 II Flammable RMW Storage Area. Due to UBC restrictions, flammable radioactive mixed waste cannot be stored in the basement of 305-B with the other radioactive mixed waste. The flammable RMW received by 305-B for storage prior to disposal is stored in a separate area above grade in the east portion of the building in a 7' x 7' x 7' flammable liquid storage module. The module is Factory Mutual approved and has four-hour fire rated walls and doors. The module has a self-contained internal dry chemical fire suppressant system. The module has a 90-gallon polyethylene coated sump. The module is lag bolted to the concrete floor in the flammable RMW storage area indicated in Figure 4-8. The module has a storage capacity of four 55-gallon drums, or up to 250 gallons of total capacity of all containers stored, whichever is less greater. This storage area meets the requirements of a one year PCB storage area as defined in 40 CFR 761.65, so flammable mixed waste, also regulated as PCB waste, may be stored in this location. A diagram of this cell is provided in Figure 4-8.

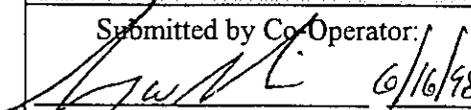
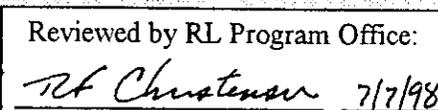
Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830. Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
 G.W. McNair	 R.F. Christensen	 J. J. Wallace
6/16/98 Date	7/7/98 Date	 Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 4.1.1.6.12]

Description of Modification:

Section 4.1.1.6.12, Page 4-17, lines 31-38:

4.1.1.6.12 ~~RMW Storage Area~~. Radioactive mixed waste that is not flammable per UFC (i.e., flash point above 100 F) is stored in a special area in the basement of 305-B. For additional segregation capability, there are ~~seven~~ **eight** small chemical storage cabinets and four 62" x 62" x 5.56" (157cm x 157cm x 15 cm stainless steel "container pans", with an approximate volume of 91 gallons (346 liters). The total area within the curbing is 1246 gallons (4716 liters). The containment pans are mounted to the floor or wall of the cell to provide segregated storage for potentially incompatible mixed waste streams. Drums stored in this area are stored on pallets to prevent potential contact with spilled waste in containment during an emergency. A diagram of this area is provided in Figure 4-9.

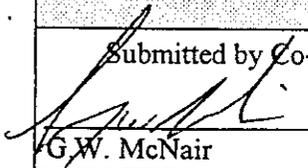
Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.3.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

3. Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps, conveyors, controls)

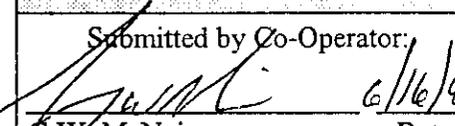
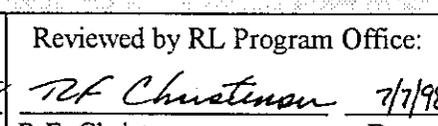
Submitted by Co-Operator:  G.W. McNair	Date 6/16/98	Reviewed by RL Program Office:  R.F. Christensen	Date 7/7/98	Reviewed by Ecology: J. J. Wallace	Date
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Hanford Facility RCRA Permit Modification Notification Form

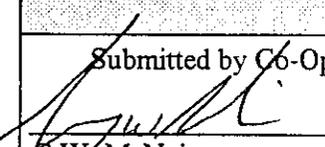
Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4.1.1.6.13]								
<u>Description of Modification:</u> Section 4.1.1.6.13, Page 4-22, lines 1-5: 4.1.1.6.13 Explosives Storage Area Due to UBC restrictions, wastes classified as explosive by DOT regulations are stored in a 3' x 3' x 3' explosives magazine, with a 8 cubic foot interior, outside cell 1. The magazine is constructed of steel and is certified to have been fabricated per Institute of Makers of Explosives (IME) SLP22, type 2 day box requirements. No more than 1 lb. of explosives is stored in the magazine at one time. The location of the magazine is indicated in Figure 4-7.									
Modification Class: ²³ please check one of the Classes:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Class 1</td> <td style="width: 25%;">Class¹</td> <td style="width: 25%;">Class 2</td> <td style="width: 25%;">Class 3</td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> </table>	Class 1	Class ¹	Class 2	Class 3	X			
Class 1	Class ¹	Class 2	Class 3						
X									
Relevant WAC 173-303-830, Appendix I Modification: A.3.									
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions 3. Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps conveyors, controls).									
Submitted by Co-Operator:  G.W. McNair	Reviewed by RL Program Office:  R.F. Christensen	Reviewed by Ecology: J. J. Wallace							
6/16/98 Date	7/7/98 Date	 Date							

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit: 305-B Storage Facility	Permit Part & Chapter: Part III, Chapter 2 and Attachment 18 [Section 4, Figure 4-9]			
<u>Description of Modification:</u> Page 4-19, Figure 4-9: Replacement of page with updated Figure 4-9 Radioactive Mixed Waste Storage Area. Updated figure indicates the addition of storage cabinet 7L and the location of Washington-only/Class9/Non-regulated Drum Storage Area.				
Modification Class: ²³ please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.3.				
<u>Enter wording of the modification from WAC 173-303-830. Appendix I citation:</u> A. General Permit Provisions 3. Equipment replacement or upgrading with functionally equivalent components (e.g. pipes, valves, pumps, conveyors, controls)				
Submitted by Co-Operator:  G.W. McNair	Reviewed by RL Program Office:  R.F. Christensen	Reviewed by Ecology: J. J. Wallace		
6/16/98 Date	7/7/98 Date			Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6, Figure 6-2]

Description of Modification:

Page 6-5, Figure 6-2. Weekly Inspection Checklist Form (1 of 2)

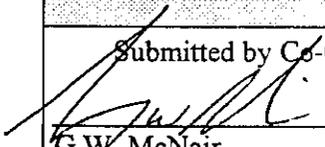
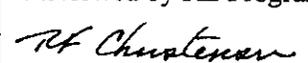
Cell:	1 Oxidizer Acids	2 Poison, PCB, Class 9	3 Caustic WSDWN-Non-Reg.	4 Flammable, Combustible, Aerosols	5 Flammable Bulking Cylinders			12 Oxidizer Drums	13 Acid Drums	14 Alkaline Drums	15 Explosives Magazine
Container integrity good?											
Containers properly sealed?											
Containers property labeled?											
Containers properly segregated?											
Floor free of major cracks/gaps?											
Sumps empty and dry?											

Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions:
1. Administrative and informational changes.

Submitted by Co-Operator:  G.W. McNair	Date 6/16/98	Reviewed by RL Program Office:  R.F. Christensen	Date 2/7/98	Reviewed by Ecology: J. J. Wallace	Date
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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6, Figure 6-2]

Description of Modification:

Page 6-6, Figure 6-2. Weekly Inspection Checklist Form (2 of 2) :

Weekly Inspection Form 305-B Chemical Waste Storage Unit (continued)

Emergency Equipment and Supplies (Y=Yes, N=No)

north eyewash safety shower: clear access? _____

south eyewash safety shower: clear access? _____

portable eyewash outside of east bay door pressurized? _____

spill control station stocked for acid, base, solvent and other spills? _____

fire extinguishers (8) inspected and have clear access? _____

facility phone (376-4293) operational? _____

facility public address system (376-1885) operational? _____

formaldehyde spill kit (Cell 42) fully stocked with 11 lbs neutralizer? _____

Personnel Protective Equipment (Y=Yes, N=No)

Corrective Action and/or Clean-up Performed

Modification Class: ^{2 3}

please check one of the Classes:

Class 1	Class ¹	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:

G.W. McNair

Date

Reviewed by RL Program Office:

R.F. Christensen

Date

Reviewed by Ecology:

J. J. Wallace

Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6.3.1.3]

Description of Modification:

Section 6.3.1.3, Page 6-10, lines 32-36 and Page 6-11, lines 1-6:

6.3.1.3 Emergency Equipment [F-3a(3)]

Emergency equipment available for trained 305-B personnel includes portable fire extinguishers, a fire suppression system, spill response equipment, and decontamination equipment. ~~Six~~ Seven portable 10-lb ABC fire extinguishers, one 15-lb (or larger) Class D fire extinguisher for combustible metals, and one portable 14-lb Halon fire extinguishers are available at various locations throughout 305-B, as shown in Figure 6-4. The 10-lb ABC extinguishers are located: (1) next to the east entrance; (2) northwest end of the basement; (3) southwest end of the high bay; (4) outside of the bulking module door; (5) north of Cell No. 4 entrance; and (6) north-west end of high bay. ~~A 15-lb ABC extinguisher is located outside cell 7.~~ The 15-lb (or larger) class D extinguisher is located on the exterior of the organics cell wall north of the entrance. The one Halon fire extinguisher is located in the office area.

Modification Class: ²³

please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

1. Administrative and informational changes

Submitted by Co-Operator:

G.W. McNair

Date

Reviewed by RL Program Office:

R.F. Christensen

Date

Reviewed by Ecology:

J. J. Wallace

Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 6, Figure 6-4]

Description of Modification:

Page 6-11, Figure 6-4. 305-B Storage Unit Building Plan and Locations of Emergency Equipment:

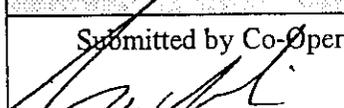
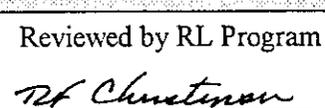
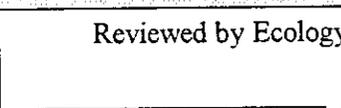
Page replacement of updated 305-B Building Plan and locations of Emergency Equipment, including recent equipment additions.

Modification Class: ^{2,3}	Class 1	Class ¹	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
 - 1. Administrative and informational changes

Submitted by Co-Operator:  G.W. McNair	Reviewed by RL Program Office:  R.F. Christensen	Reviewed by Ecology:  J. J. Wallace
6/16/98 Date	7/7/98 Date	_____ Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 8, Figure 8-1]

Description of Modification:

Page 8-2, Figure 8-1:

	OS	E	TS	C
Building Emergency/Contingency Plan	A ²	A	A	A
Radioactive Material Shipping Representative	B	B ⁴	B ²	N
305-B Safe Operating Procedures	A	A	A	A
Advanced Hazardous Waste Training	A	A	A	N
Hazardous Waste Operations Supervisor	I	N	N	N
Waste Designation Training	I	I	I ⁵	N

²Required for female staff only. This information is given in the various radiation safety classes and is not a separate stand alone class.

⁴Required for RMW Engineers and any TS that has the assigned duty of signing for onsite radioactive shipments.

⁵Required for any TS that has the assigned duty of making waste designations.

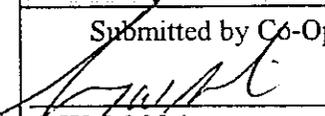
Modification Class: ^{2,3}	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes

Submitted by Co-Operator:  G.W. McNair	Reviewed by RL Program Office:  R.F. Christensen	Reviewed by Ecology: J. J. Wallace
6/16/98 Date	7/7/98 Date	Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 8.1.4]

Description of Modification:

Section 8.1.4, Page 8-4, lines 10-12:

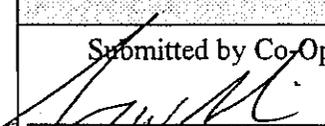
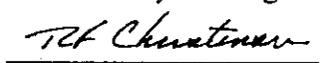
- ~~Hazardous and Mixed Waste Generator~~ **Advanced Hazardous Waste Management** -- Annual: This training covers internal PNNL hazardous and mixed waste procedures and issues, and regulatory requirements applicable to PNNL operations for 90 day areas and TSD operations.

Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.5.b.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
5. Changes in the training plan
 - b) Other changes

Submitted by Co-Operator:  G.W. McNair Date: 6/16/98	Reviewed by RL Program Office:  R.F. Christensen Date: 7/7/98	Reviewed by Ecology: J. J. Wallace Date:
--	---	--

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 8.1.4]

Description of Modification:

Section 8.1.4, Page 8-4, lines 22-26:

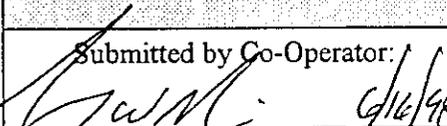
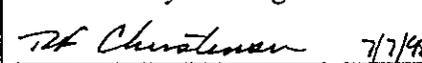
- General Radiation Safety – Biennial: This course gives staff members information on the basic characteristics of radiation, natural and manmade sources, biological effects and risks of radiation exposure, ALARA, contamination control, and warnings and alarms. This course requirement can be met by taking any of the radiation safety courses such as Radiation Worker II, Radiation Worker I or General Employee Radiation Training.

Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
1. Administrative and informational changes

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
 G.W. McNair	 R.F. Christensen	J. J. Wallace
Date	Date	Date

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 8.1.4]

Description of Modification:

Section 8.1.4, Page 8-4, lines 28-31:

- NCRP Report 39 -- Initial: For female radiation workers only. The briefing informs the female radiation worker of the potential hazards of radiation to women of reproductive age. This information is provided in the various radiation safety classes including Radiation Worker I/II and General Employee Radiation Training and is not a separate stand alone class.

Modification Class: ²³

please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions:

1. Administrative and informational changes.

Submitted by Co-Operator:

G.W. McNair

Date

Reviewed by RL Program Office:

R.F. Christensen

Date

Reviewed by Ecology:

J. J. Wallace

Date

¹ Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
305-B Storage Facility

Permit Part & Chapter:
Part III, Chapter 2 and Attachment 18
[Section 8.1.4]

Description of Modification:

Section 8.1.4, page 8-4 lines 43-48:

- Radioactive Material Shipping Representative --Biennial: This course provides training in the onsite radioactive material shipping procedures and requirements. Successful completion of this course is required to receive authorization to sign for onsite radioactive shipments (onsite RSRs). The course content of this training also provides the training information provided in the Hazardous Waste Shipment Certification course. Therefore, successful completion of this course meets the training requirements of the Hazardous Waste Shipment Course.

Modification Class: ²³

please check one of the Classes:

Class 1

Class¹

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.5.b.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

- A. General Permit Provisions
5. Changes in the training plan
 - b) Other changes

Submitted by Co-Operator:

G.W. McNair

Date

Reviewed by RL Program Office:

R.F. Christensen

Date

Reviewed by Ecology:

J. J. Wallace

Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit
Part III, Chapter 2
305-B Storage Facility

Page Changes

Part A, Form 3, Page 19 of 25

Chapter 4

Chapter 6

Chapter 8



Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I.D. NUMBER (entered from page 1)

A 7 8 9 0 0 0 8 9 6 7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES			
				1. PROCESS CODES (enter)			
1	U 2 4 5	200	K	S01			
2	U 2 4 6	200	K	S01			
3	U 2 4 7	200	K	S01			
4	U 2 4 8	200	K	S01			
5	U 2 4 9	200	K	S01			
6	U 3 2 8	200	K	S01			
7	U 3 5 3	200	K	S01			
8	U 3 5 9	200	K	S01			
9	W 0 0 1	5,000	K	S01			
10	W P 0 1	5,000	K	S01			
	W P 0 2	1,000	K	S01			
12	W P 0 3	500	K	S01			
13	W T 0 1	30,000	K	S01			
14	W T 0 2	20,000	K	S01			
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4.0 PROCESS INFORMATION [D]

4.1 CONTAINERS [D-1]

The following sections describe the types of containers stored at the 305-B Storage Unit.

4.1.1 Containers With Free Liquids [D-1a]

Containers with free liquids are discussed below.

4.1.1.1 Description of Containers [D-1a(1)]

Most wastes stored at the 305-B Storage Unit are received in their original, as-procured containers. Containers of hazardous materials entering 305-B are inspected before being accepted for storage. Generating units are responsible for placing the materials in adequate containers. Repackaged materials must be placed in containers that are new and compatible with the materials to be stored.

Containers in poor condition or inadequate for storage are not accepted at the unit. If transport is by unit personnel, such containers are not accepted for transport. See Section 6.4.1 for inspection prior to transport performed by unit personnel. "Container in poor condition or inadequate for storage" means a container which is not intact or undamaged and which is not securely sealed to prevent leakage during storage, transport and ultimate offsite disposal. Examples of acceptable packagings include laboratory reagent bottles, DOT containers, spray cans, sealed ampules, paint cans, leaking containers which have been overpacked, etc. Unit operations personnel have the authority to determine whether a container is in poor condition or inadequate for storage, using the criteria of WAC 173-303-190 and professional judgement whether the packaging may leak during handling, storage and/or disposal.

As with all wastes, repackaged containers of dangerous waste are marked and/or labeled to describe the contents of the container and the major hazards of the waste, as required under WAC 173-303. Containers are also marked with a unique identifying number assigned by the unit's computerized waste tracking system.

All flammable liquid wastes are stored in compatible DOT-specified shipping containers and/or in Underwriter's Laboratory (UL)-listed and Factory Mutual (FM)-approved flammable storage cabinets. Solid chemicals are stored on shelving in specifically designated areas based on the DOT hazard classification.

All containers utilized for offsite transport of dangerous wastes at the unit are selected according to the container selection criteria found in WAC 173-303-190(1). Containers utilized for off-site shipment shall also comply with WAC 173-303-190(2) and (3). 305-B personnel shall comply with WAC 173-303-190(4).

1 **4.1.1.2 Container Management Practices [D-1a(2)]**

2
3 Management practices and procedures for containers of dangerous waste are in place at the 305-B Storage
4 Unit to assure the safe receipt, handling, preparation for transport, and transportation of wastes. These
5 practices and procedures are summarized below.

6
7 Inspection of Containers. A system of daily, weekly, monthly, and yearly inspections is in place to ensure
8 container integrity, check for proper storage location, prevent capacity overrun, etc. These inspection
9 procedures are detailed in Section 6.2.

10
11 Container Handling. All unit staff are instructed in proper container handling safeguards as part of their
12 training (see Section 8.1.2 for further details). For example, employees are instructed to open all high-
13 vapor-pressure liquids in the flammable liquid bulking module to avoid buildup of vapors in the unit.
14 Containers are always kept closed except when adding or removing waste, in accordance with
15 WAC 173-303-630(5)(a).

16
17 Containers are not opened, handled or stored in a manner which would cause the container to leak or
18 rupture. Small containers (five gallons or less capacity) are stored on ventilated shelving or in approved
19 flammable liquid storage lockers (if appropriate). Containers over five gallons capacity are stored on the
20 floor of the appropriate storage cell, in cabinets, or stored in the appropriate containment area on the high
21 bay floor under Section 4.3.2. Unnecessary handling not required for redistribution or preparation for
22 transport and disposal by either labpacking or bulking (see below) is minimized. Drums are moved
23 manually, by crane or chain hoist, or with an electric forklift. For manual movement, hand trucks
24 specifically designed for drum handling are used. Crane and chain hoist operations are performed using a
25 choker chain or drum hoist. When using the forklift, a drum hoist is used or the drums are carried on
26 pallets. Drums are never carried on the forks or "speared" by slipping the forks under the chime. When
27 waste handling operations are conducted, a minimum of two persons are present in the unit.

28
29 Lab Packing. One of the major functions of the 305-B Storage Unit is the preparation of lab packs for
30 offsite recycling, treatment and/or disposal of small quantity lab wastes generated by DOE-RL/PNNL
31 activities.

32
33 Lab packs are prepared in compliance with WAC 173-303-161, 49 CFR 173.12, other applicable
34 regulations, and permit conditions of the planned receiving facility (recycler, treatment facility, or disposal
35 facility). Permit conditions affecting preparation of lab packs might include types of absorbent materials to
36 be used (e.g., no vermiculite).

37
38 Lab packs are prepared in the storage cell containing the hazard class(es) to be placed in the lab pack. The
39 elephant trunk ventilator system is used to minimize respirable dusts from the absorbent material being
40 used (usually vermiculite). Lab packs may also be prepared in the flammable liquid bulking module if
41 appropriate; for instance, if compatible materials from more than one storage cell are being combined in a
42 single lab pack drum. Lab packs may be prepared in the high bay storage area if storage of the completed
43 lab pack is permitted there per Section 4.3.2.

44
45 Partial and completed lab packs are closed, labeled, and the contents list documented. Labpacks are stored
46 in the cell from which the containers inside were drawn, or in the high bay if appropriate.

47
48 Unit personnel wear appropriate protective clothing while handling containers being placed in lab packs.
49 At a minimum this includes labcoats, safety glasses or other protective eyewear, and chemical resistant

1 gloves. More stringent requirements, including use of respiratory protection, may be imposed if
2 appropriate.

3
4 Bulking. In order to promote greater recycling or treatment of wastes and reduce land disposal, some liquid
5 wastes are "bulked" into larger containers, typically 30- or 55-gallon closed head drums. Bulking
6 operations for chemicals which are respiratory or flammability hazards are performed in the "flammable
7 liquid bulking module" (Also referred to as cell 5.) located in the southwest corner of the unit. Bulking of
8 nonvolatile, low hazard wastes such as saline solutions or ethylene glycol may be done within the
9 containment areas of the appropriate storage cell or high bay.

10
11 Wastes to be bulked are fully characterized under the 305-B unit waste analysis plan in Section 3.2.
12 Compatibility is determined using the information from generating unit designation information, process
13 knowledge, laboratory analyses, and/or the compatibility determinations described in Section 6.5.2.

14
15 Containers are transported by hand or forklift to the flammable liquid bulking module area. The receiving
16 drum (typically 30- or 55-gallon capacity) is placed in the module and the ventilation system is activated.
17 A large chemically- resistant funnel (either metal or plastic, depending on material to be introduced) is used
18 to pour the material into the drum. The contents of the smaller containers are then poured, one at a time,
19 into the larger drum. The receiving drum is monitored by unit personnel to make sure no incompatibility is
20 observed (e.g., fuming, bubbling, or heat generation). If such incompatibility is observed, no further
21 material is added and the worker leaves the area, closing the module and leaving the ventilation on. The
22 unit supervisor is notified to evaluate implementation of the contingency plan.

23
24 Glass containers which have been emptied (as defined by WAC 173-303-160(2)) as a result of bulking
25 activities are crushed onsite by an electric glass crusher which mounts on a 55-gallon drum. If an emptied
26 glass container held acutely hazardous waste, as defined by WAC 173-303-040(2), the container is rinsed
27 at least three times with an appropriate cleaner or solvent prior to being destroyed. The rinsates are
28 managed as dangerous waste. Crushed glass is managed as solid waste in accordance with WAC 173-303-
29 160(3).

30
31 Once bulking is complete, the bulk container is closed, labeled, and the contents list documented.
32 Containers of bulked waste are stored in the cell from which the containers inside were drawn, or in the
33 high bay if appropriate.

34
35 Unit personnel wear appropriate protective clothing while bulking containerized liquid wastes. At a
36 minimum this includes coveralls, disposable splash-resistant apron, eye protection, and chemical resistant
37 gloves. More stringent requirements, including use of respiratory protection, may be imposed if
38 appropriate.

1 **4.1.1.3 Secondary Containment System Design and Operation [D-1a(3)]**
2

3 Several design features have been engineered into the construction of the 305-B Storage Unit as added
4 safeguards for containment of dangerous waste spills or leaks. Design drawings for 305-B are included in
5 Appendix 4A. The following subsections comment briefly on each of the design features.
6

7 **4.1.1.4 Requirement for Base or Liner to Contain Liquids [D-1a(4)]**
8

9 The base of the facility consists of a 6-in. reinforced, poured concrete slab with no cracks or gaps. The
10 concrete was mixed in accordance with ASTM 094, Section 5.3, Alternate 2, and all exposed surfaces were
11 finished with a smooth troweled surface. Expansion joint material is Sonneborn "Sonoflex F™"
12 polyethylene filler. The bonding compound used at the expansion joints was Sonneborn "Sonobond™"
13 two-part epoxy. All edges and corners were sealed with a continuous bead of polysulfide sealant.
14

15 A chemically resistant sealant paint was applied in February 1989 to the storage cells and high bay floor,
16 and in October 1990 to drum storage areas noted in Sections 4.1.1.6.6, 4.1.1.6.7, and 4.1.1.6.8. Specific
17 areas of 1989 application are shown on Plate 4-1 and painting methods (surface preparation and
18 application of coatings) are described on Plate 4-2 of Appendix 4A of this permit application. The surface
19 coating is Coronado #101-1 (101 Series) Polyamide Epoxy Coating. Estimated service life of the coating
20 material is 14 years per manufacturer's literature. Performance specifications and a compatibility chart are
21 provided in Appendix 4B.
22

23 The condition of the floor coating is inspected weekly per Section 6.2.1.1, and repairs are made as needed.
24 Immediate repairs are indicated whenever the coating is observed to have been chipped, bubbled up,
25 scraped, or otherwise damaged in a manner which would significantly impact the ability of the coating to
26 contain spilled materials. Minor nicks and small chips resulting from normal operations will be repaired on
27 a periodic basis. Repairs are performed in accordance with procedures provided by the manufacturer in
28 Appendix 4B.
29

30 **4.1.1.5 Containment System Drainage [D-1a(5)]**
31

32 The concrete floors in each high bay storage cell are canted toward individual secondary containment
33 trenches within those cells. These trenches are isolated from each other in order to prevent interaction,
34 reactions, or offsite migration of spilled materials. This provides protection even during simultaneous
35 spills.
36

37 The floors in the high bay area are also canted toward a separate sump system which is sealed with epoxy
38 and blocked to prevent drainage. Drums stored in this area are also stored on pallets to prevent contact
39 with spilled material in the event of a release. Segregated storage areas for incompatible materials have
40 been set up in the high bay storage area to prevent commingling of spilled wastes during a catastrophic
41 (multi-drum) spill incident. Each area has its own containment trench separated from other trenches with
42 concrete and epoxy.

43 The flammable liquids bulking module, along with its purpose of providing a ventilated area for bulking of
44 compatible hydrocarbon wastes, is used as an independent storage cell. Secondary containment is provided
45 by the walls of the module, which have been sealed at the floor joint by use of grout coated with epoxy
46 paint.
47

48 For protection of the basement RMW storage area, curbing/diking is provided to prevent migration. Drums
49 are stored on pallets to prevent container contact with spilled materials and drip pans are provided to

1 segregate RMW by dangerous waste characteristic as described in Section 4.1.1.6.11. This area has no
2 drainage.

3
4 Flammable RMW is stored within its own secondary containment devices. Small containers of flammable
5 RMW are stored in a storage cabinet as noted in Section 4.3.1. Larger containers are stored in individual
6 secondary containment devices (i.e., drip pans) to prevent runoff or mingling of spilled contents as
7 described in Section 4.1.1.6.10.

8 9 4.1.1.6 Containment System Capacity [D-1a(6)]

10
11 Secondary containment is provided for all dangerous wastes stored at the 305-B unit. All floors in the high
12 bay area are sloped toward sumps which have no drains and are covered with grating to prevent safety
13 hazards. In addition, all floors in the high bay area are coated with an epoxy based coating as described in
14 Section 4.1.1.4. Inspection of the containment system to maintain integrity is described in Section 6.2.
15 Individual secondary containment systems are configured as follows:

16
17 **4.1.1.6.1 Acids and Oxidizers Cell.** The acids and oxidizers cell is located at the northwest corner of the
18 305-B unit high bay floor. The cell is constructed of epoxy-painted concrete block walls 4' high and
19 incorporates a 1' deep sump at the west end of the cell. Six cabinets, open shelving, and a large-container
20 storage area are provided within the cell to store containers of recyclable materials and dangerous wastes.
21 The secondary containment volume of the individual sump for this cell is 67 gallons, and the total
22 containment volume of the cell is 774 gallons. Storage capacity of the cell is limited by the UBC to not
23 more than, 6000 cubic feet of oxidizing gases, 1000 lbs of ammonium nitrate and ammonium nitrate
24 mixtures, and 500 lbs of solid oxidizers. A diagram of the cell is provided in Figure 4-1.

25
26 **4.1.1.6.2 Poisons and Class 9 Cell.** The poisons and Class 9 cell is located just south of the acids and
27 oxidizers cell along the west wall of the high bay. This cell is also constructed of epoxy-painted concrete
28 block walls 4' high and incorporates a 1' deep sump along its west end. Three storage cabinets and several
29 sets of open shelving are positioned in the cell to allow storage of various sizes of containers. The
30 northeast corner of the cell is sectioned off with a 6" spill retention berm to allow PCB storage for disposal
31 complying with 40 CFR 761.65(b). The secondary containment volume of the individual sump for this cell
32 is 117 gallons, and the total containment volume of the cell is 782 gallons. Due to space limitations, no
33 more than 800 gallons of liquid poisons and/or Class 9's will be stored at one time. There is no UBC
34 restriction on storage of poisons or Class 9's at the 305-B unit. A diagram of this cell is provided in
35 Figure 4-2.

36
37 **4.1.1.6.3 Caustics, Washington-Only Wastes, and Non-Regulated Waste Cell.** The caustics,
38 Washington-only waste, and non-regulated waste cell is located adjacent to the poisons and Class 9 cell on
39 the west wall of the high bay area. This cell is also constructed of epoxy-painted concrete block walls 4'
40 high and incorporates a 1' deep sump along its west end. Four storage cabinets, 3 sets of open shelving,
41 and 1 explosion proof refrigerator, are positioned in the cell to allow storage of various sizes of containers.
42 The secondary containment volume of the individual sump for this cell is 137 gallons, and total
43 containment volume of the cell is 764 gallons. Due to space limitations, no more than 800 gallons of
44 liquids will be stored at one time in this cell. A diagram of this cell is provided in Figure 4-3.

45
46 **4.1.1.6.4 Organics Cell.** This cell is located south of the caustics, Washington-only waste, and non-
47 regulated waste cell. As with the other three cells described above, this cell is constructed of epoxy-painted
48 concrete block walls 4' high and incorporates a 1' deep sump along its west end. The secondary
49 containment volume of the individual sump for this cell is 119 gallons, and total containment volume of the
50 cell is 687 gallons. A diagram of this cell is provided in Figure 4-4.

1
2 Organic waste materials are stored in this cell unless they are non-ignitable and exhibit the characteristics
3 of corrosivity or reactivity. Three Factory Mutual-approved flammable liquid storage cabinets are utilized
4 for storage of various classes of flammable liquids as defined by the UFC. The capacities of the various
5 cabinets are shown in Section 4.3.1. The following cabinets also are used for storage in this cell: one for
6 combustibles, one for aerosols, two for flammable solids, and one for overflow from one of the other
7 cabinets.

8
9 Total ignitable Waste Storage capacity of the 305-B highbay, including the organics cell, Cell 5, Ignitable
10 drum storage area, and highbay storage area is limited by the following UBC restrictions for Class B
11 occupancy:

- 12
- 13 • Class 1A flammable liquids: 120 gallons
 - 14 • Class 1B flammable liquids: 240 gallons
 - 15 • Class 1C flammable liquids: 360 gallons
 - 16 • Maximum Class 1A, 1B, and 1C at any one time: 480 gallons
 - 17 • Class 2 combustible liquids: 480 gallons
 - 18 • Class 3A combustible liquids: 1320 gallons
 - 19 • Combustible fibers, loose: 100 cubic feet
 - 20 • Combustible fibers, baled: 1000 cubic feet
 - 21 • Flammable gases in any one cylinder: 3000 cubic feet
 - 22 • Liquefied flammable gases: 60 gallons
- 23

24 To maintain required aisle spaces and functional usability, the liquid capacity of the hydrocarbon cell is set
25 at 1000 gallons.

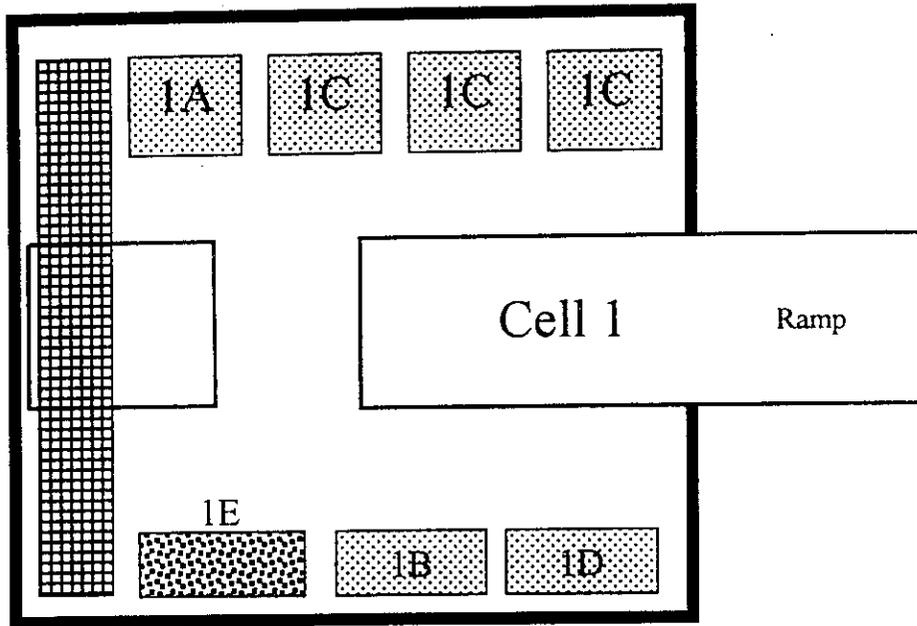
26
27 **4.1.1.6.5 Flammable Liquids Bulking Module.** The flammable liquids bulking module, along with its
28 purpose of providing a ventilated area for bulking of compatible hydrocarbon wastes, is used as an
29 independent storage cell. Secondary containment is provided by the walls of the module, which have been
30 sealed at the floor joint by use of grout coated with epoxy paint. Flammable gases in cylinders, liquefied
31 flammable gases, and oxidizing gases will be stored in the bulking module. (Cell 5)

32
33 Nontransient storage of flammable liquids in the module is 55 gallons. A diagram of the module is
34 provided in Figure 4-5.

35
36 **4.1.1.6.5.a. Flammable Liquids Storage Module.** The flammable liquids storage module is a self-
37 contained storage module that allows additional storage space for flammable wastes. Located on the
38 southeast wall, it is connected to the buildings fire suppression system. The flammable storage module has
39 a 2-hour fire rated containment system so that according to the UFC, an unlimited capacity is allowed.
40 However, the flammable waste storage capacity of the flammable liquid storage module is limited by the
41 240 gal capacity of the module's secondary containment system. No more than 240 gal of any combination
42 of flammable liquid classes will be stored in the module. This flammable waste storage capacity is in
43 addition to the flammable storage limits for the highbay. A diagram of the module is provided in
44 Figure 4-10.

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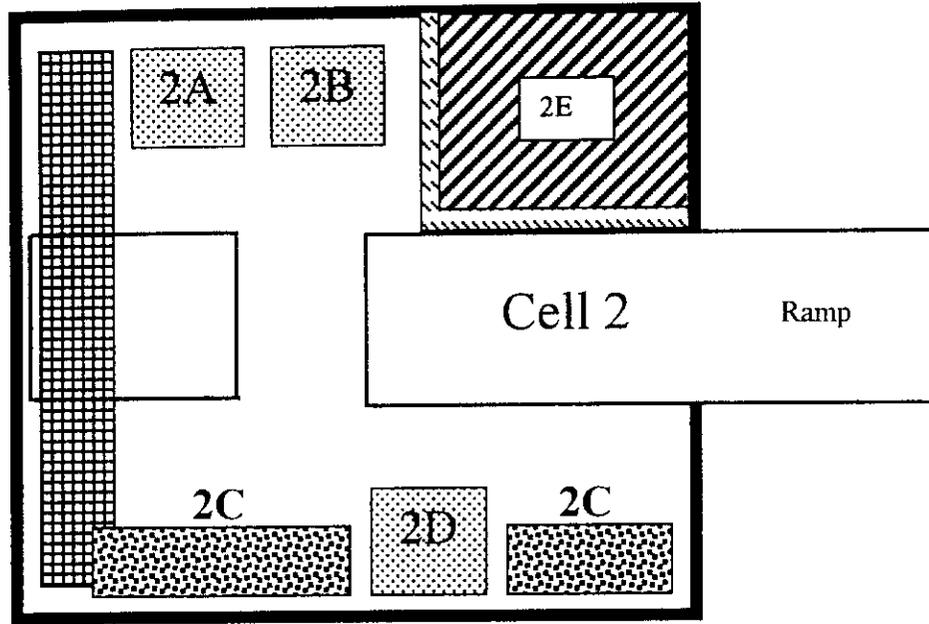


1cm = 60cm

- 1A Liquid Oxidizers (Medium Cabinet)
- 1B Solid Oxidizers (Small Cabinet)
- 1C Inorganic Acids (Medium Cabinet)
- 1D Organic Acids (corrosive) (Small Cabinet)
- 1E Mercury/Corrosive Solids (Small Shelf)
- █ 15.24cm W x 127CM H epoxy coated concrete block wall
- ▣ Secondary Containment Trench
- Drum and Carboy Storage Area

Figure 4-1. Acids and Oxidizers Cell.

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1cm = 60cm

- 26 2A Poisons (P>G> II and III) (Large Cabinet)
- 27 2B Poisons (P>G> I) (Large Cabinet)
- 28 2C Class 9 (nonreactive) (Large and Small Shelf)
- 29 2D Class 9 (reactives) (Large Cabinet)
- 30 2E PCB's

32 15.2cm W x 127cm H epoxy coated concrete block wall

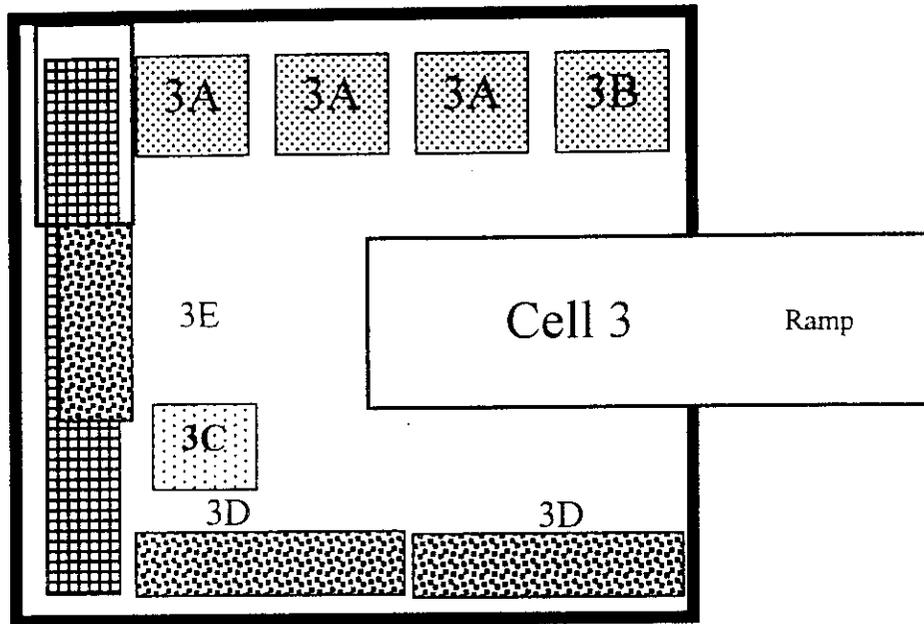
34  Secondary Containment Trench

37  313.69cm L x 8.89cm W x 15.24 cm H epoxy coated angle iron, sealed to the floor

40  Drum and Carboy Storage Area

Figure 4-2. Poisons and Class 9 Cell.

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1 cm = 60 cm

- 1A Liquid Oxidizers (Medium Cabinet)
- 1B Solid Oxidizers (Small Cabinet)
- 1C Inorganic Acids (Medium Cabinet)
- 1D Organic Acids (corrosive) (Small Cabinet)
- 1E Mercury/Corrosive Solids (Small Shelf)

15.24cm W x 127CM H epoxy coated concrete block wall



Secondary Containment Trench



Drum and Carboy Storage Area

Figure 4-3. Alkaline, Washington-Only and Non-Regulated Waste Cell

1 **4.1.1.6.6 Ignitable Waste Drum Storage Area.** A section of the high bay has been dedicated to storage of
2 drum quantities of ignitable waste prior to offsite shipment. The area is bordered on the north and south
3 sides by angle iron (3/2"x6") bolted to the floor (see Plate 2, Appendix 4A for detail) and sealed to provide
4 secondary containment. The area is approximately 15'x7'. To further enhance containment and to allow
5 greater storage capacity, the drums stored in this area are stored in flammable liquid drum storage cabinets.

6
7 Sump containment capacity of this area is approximately 224 gallons and total containment capacity is
8 approximately 431 gallons. Maximum storage in this area is six 55-gallon drums and 12 five-gallon
9 drums. A diagram of this area is included in Figure 4-6. Additional ignitable waste storage is provided for
10 in cell 4, organics cell, and the in the Highbay storage area. All of this ignitable waste storage is provided
11 for utilizing flammable liquid storage cabinets for added safety.

12
13 **4.1.1.6.7 Oxidizer Waste Drum Storage Area.** A section of the high bay has been dedicated to storage of
14 drum quantities of acid waste prior to offsite shipment. The area is constructed similarly to the ignitable
15 waste drum storage area (see above) and is also 10'x7' in size. Waste drums stored in this area are stored
16 on pallets to prevent contact with spilled wastes in the event of an incident.

17
18 Sump containment capacity in this area is approximately 55 gallons and total containment capacity is
19 approximately 255 gallons. Maximum storage in this area will be eight 55-gallon drums. A diagram of
20 this area is included in Figure 4-6.

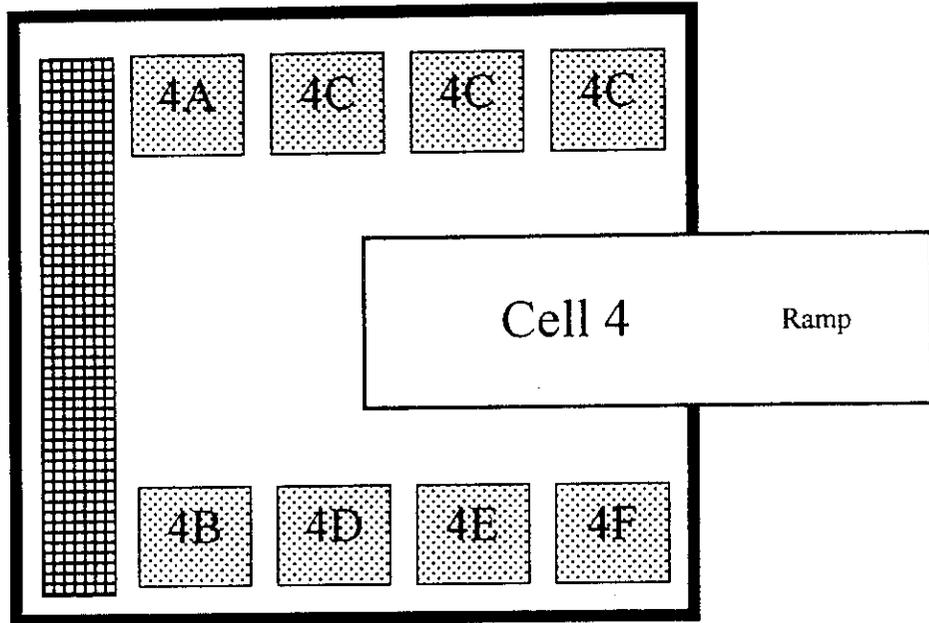
21
22 **4.1.1.6.8 Acid Waste Drum Storage Area.** A third section of the high bay has been designated for
23 storage of drum quantities of acid waste prior to offsite shipment. The area is approximately 10'x10' in
24 size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the
25 event of an incident. Bulked drums containing acids, with oxidizers as a secondary hazard, will be placed
26 in the cell 1 drum area, to prevent any possibility of a reaction with surrounding hazards in the high bay
27 drum storage area.

28
29 **4.1.1.6.9. Caustic Waste Drum Storage Area.** A fourth section of the high bay has been designated for
30 storage of drum quantities of caustic waste prior to offsite shipment. The area is approximately 22'x15' in
31 size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the
32 event of an incident. Sump containment capacity in this area is approximately 110 gallons and total
33 containment capacity is approximately 380 gallons. Maximum storage in this area is thirty-two 55-gallon
34 drums. The location of the area is shown on the High Bay Storage Area diagram Figure 4-7.

35
36 **4.1.1.6.10 High Bay Storage Area.** The high bay storage area, along with its partitioned areas mentioned
37 above, is itself a secondary containment area for loading, unloading, and storage of dangerous wastes. The
38 high bay floor is "crowned" in the center and sloped at 1/4" per foot, with drainage to sumps on the east and
39 west sides of the unit. Sump locations are indicated in Figure 4-7.

40
41 Due to space limitations in the individual cells, and for ease of mechanical handling, the high bay floor is
42 typically used for storage of nonradioactive chemicals in drums. There is also capacity for six drums of
43 ignitable waste storage inside of four flammable liquid drum storage cabinets located along the west side of
44 the high bay (see Figure 4-7).

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1cm = 60cm

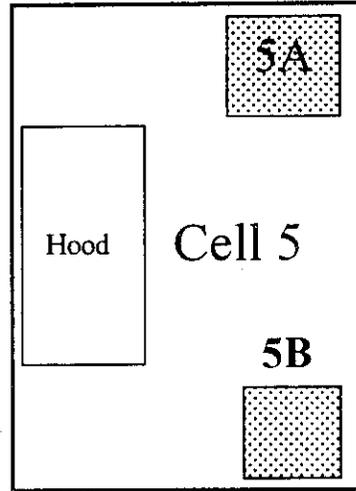
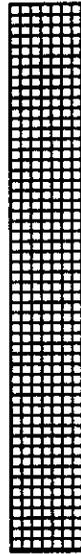
- 4A Combustible Liquids (Large Cabinet)
- 4B Aerosols (Large Cabinet)
- 4C Flammable Liquids (Large Cabinet)
- 4D Flammable Solids (Dangerous When Wet) (Large Cabinet)
- 4E Flammable Solids (w/ water. Spontaneously Combustible) (Large Cabinet)
- 4F Floating Cabinet (Large Cabinet)

 15.24 cm W x 127 H epoxy coated concrete block wall

 Secondary Containment Trench

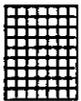
Figure 4-4. Organics Cell.

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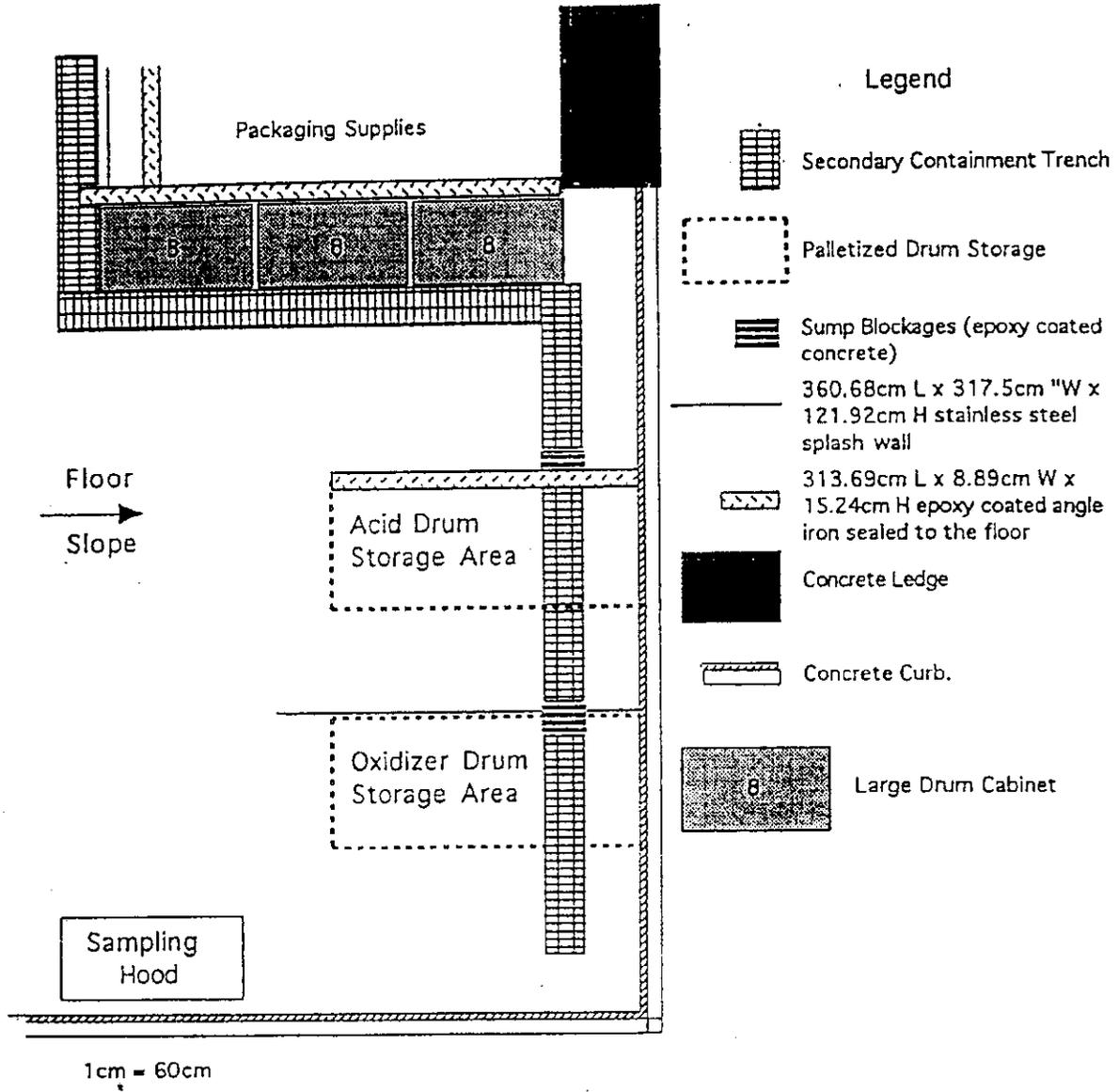
1cm = 60cm

- 5A Compressed Gases
- 5B Oxidizing Gases
- Hood - Walk-in flammable liquid bulking, 1 drum maximum.



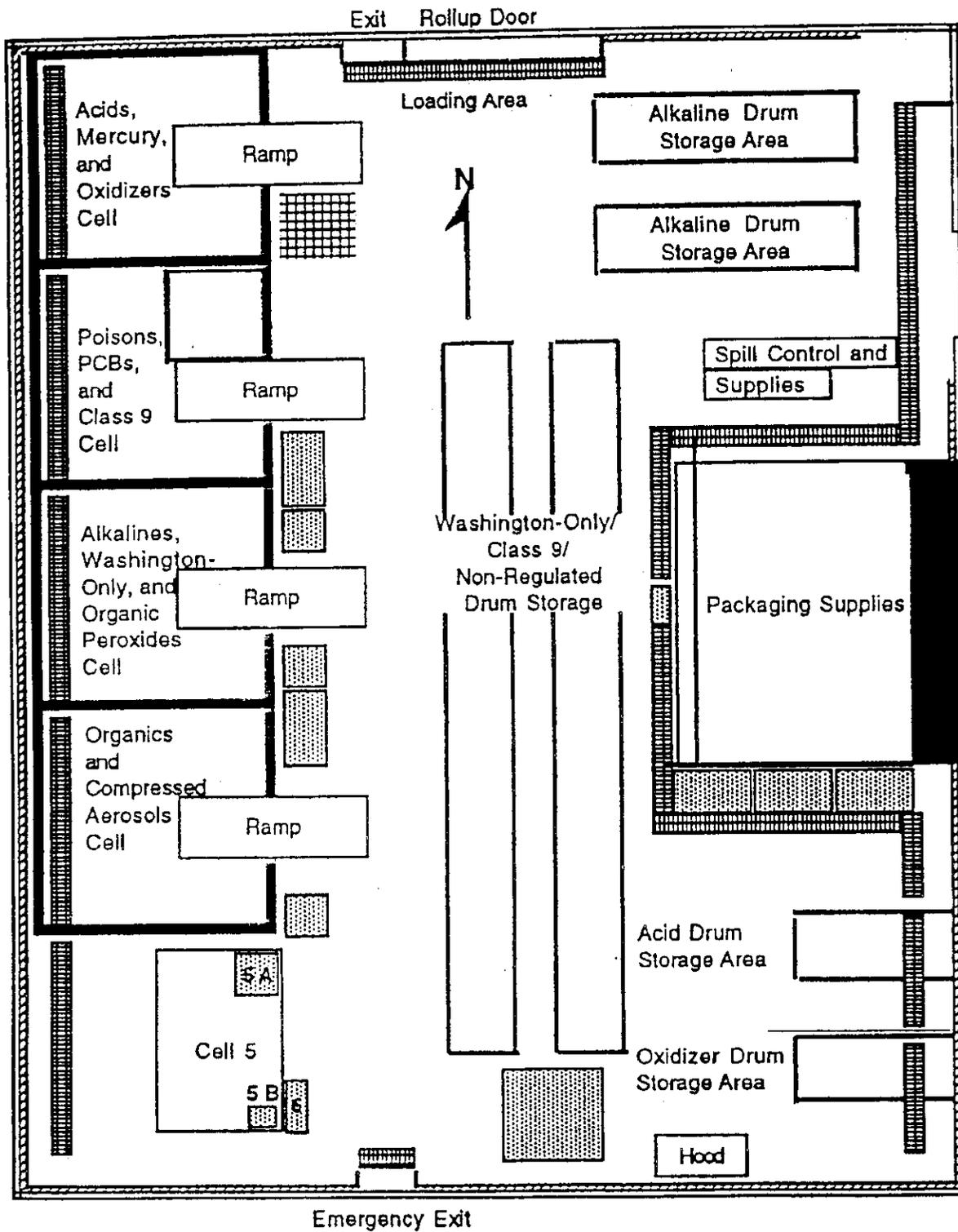
Secondary Containment Trench

Figure 4-5. Flammable Liquid Bulking Module and Compressed Gases (Cell 5).



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Figure 4-6. Segregated High Bay Drum Storage Areas.



Legend: On next Page

Scale: 1cm = 120cm

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Figure 4-7. High Bay Storage Area. (Page 1 of 2)

1 Legend: High Bay Storage Area Diagram
2

-  Secondary Containment Trench

-  Palletized Drum Storage

-  360.68cm L x 3.175cm W x 10.16cm H Stainless Steel Splash wall
-  313.69cm L x 8.89cm W x 15.24cm H epoxy coated angle iron sealed to the floor

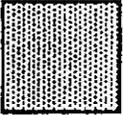
-  Concrete Ledge

-  22.86cm overhang from concrete wall.

-  Asbestos Storage (Small Cabinet)

-  Small Drum Cabinet (flammable waste storage)

-  Large Drum Cabinet (flammable waste storage)

-  Flammable Storage Module

- Cell 5** Flammable Liquid Bulking Module and Compressed Gases
-  Compressed Gases (Large Cabinet)
-  Oxidizing Gases (6.985cm W x 45.72cm D x 88cm H)

-  Explosives Magazine

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Figure 4-7. High Bay Storage Area. (Page 2 of 2)

1 The high bay floor is also used to store labpacks and bulked waste containers prior to offsite shipment to
2 licensed treatment, disposal, or recycling facilities. Generally, only corrosives, oxidizers, toxic organic
3 solvent mixtures (typically halogenated solvents), antifreeze mixtures, contaminated water which is toxic
4 DW, nonliquid wastes, ORMs, or state-only dangerous waste materials are stored in the high bay storage
5 area.

6
7 If wastes incompatible with the foregoing are stored in the high bay storage area, they are kept separated by
8 at least ten feet of distance and stored in individual drip pans for segregation in case of simultaneous
9 accidental spillage. Compatibility of the materials is determined prior to acceptance in accordance with
10 Section 3.2.

11
12 The secondary containment volume of the sumps in the high bay storage area, exclusive of the sumps
13 within individual areas described above, is 565 gallons. Maximum storage in the high bay storage area is
14 thus approximately 5650 gallons (102 drums). The high bay storage is also governed by the building
15 occupancy maximums of Table 4-1, which includes the inventory of the individual storage cells described
16 above. In order to provide additional separation from spilled liquids and for ease of handling, all drums
17 stored on the high bay floor are stored on pallets. A diagram of this cell is provided in Figure 4-7.

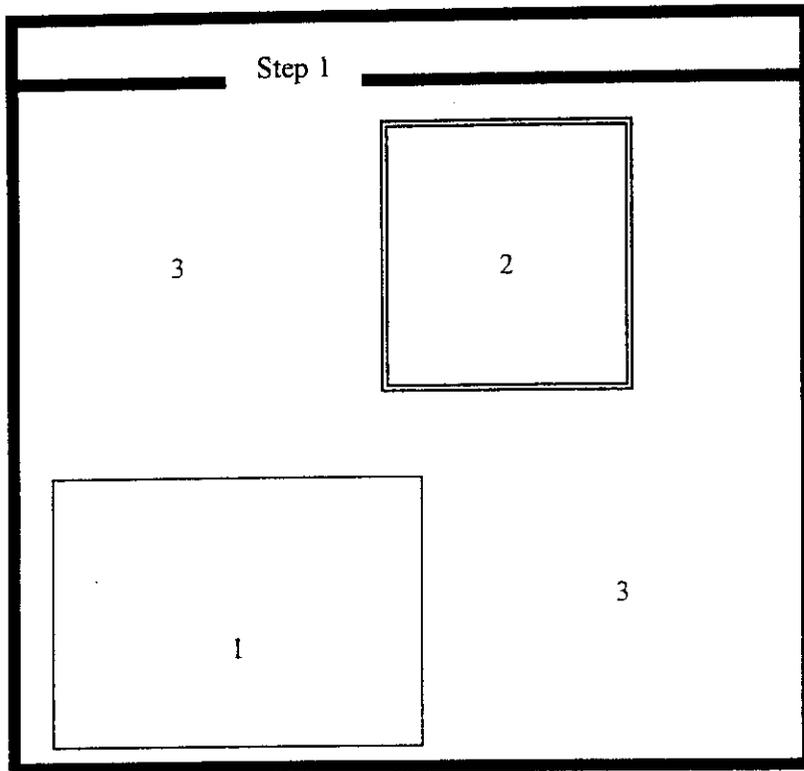
18
19 **4.1.1.6.11 Flammable RMW Storage Area.** Due to UBC restrictions, flammable radioactive mixed
20 waste cannot be stored in the basement of 305-B with the other radioactive mixed waste. The flammable
21 RMW received by 305-B for storage prior to disposal is stored in a separate area above grade in the east
22 portion of the building in a 7'x 7'x 7' flammable liquid storage module. The module is Factory Mutual
23 approved and has four-hour fire rated walls and doors. The module has a self-contained internal dry
24 chemical fire suppressant system. The module has a 90-gallon polyethylene coated sump. The module is
25 lag bolted to the concrete floor in the flammable RMW storage area indicated in Figure 4-8. The module
26 has a storage capacity of four 55-gallon drums, or up to 250 gallons of total capacity of all containers
27 stored, whichever is greater. This storage area meets the requirements of a one year PCB storage area as
28 defined in 40 CFR 761.65, so flammable mixed waste, also regulated as PCB waste, may be stored in this
29 location. A diagram of this cell is provided in Figure 4-8.

30
31 **4.1.1.6.12 RMW Storage Area.** Radioactive mixed waste that is not flammable per UFC (i.e., flash point
32 above 100 F) is stored in a special area in the basement of 305-B. For additional segregation capability,
33 there are eight small chemical storage cabinets and four 62" x 62" x 6" (157cm x 157cm x 15 cm stainless
34 steel "container pans", with an approximate volume of 91 gallons (346 liters). The total area within the
35 curbing is 1246 gallons (4716 liters). The containment pans are mounted to the floor or wall of the cell to
36 provide segregated storage for potentially incompatible mixed waste streams. Drums stored in this area are
37 stored on pallets to prevent potential contact with spilled waste in containment during an emergency. A
38 diagram of this area is provided in Figure 4-9.

39
40 In normal use, the storage capacity of this area is limited by the radionuclide limits imposed by the DOE
41 for "low inventory facilities." These limitations are defined in DOE-STD-1027-92, Hazard
42 Characterization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear
43 Safety Analysis Reports, and are included in the radiation work permit for the mixed waste storage area.

44
45 In normal use, the storage capacity of this area is limited by the radionuclide limits imposed by the DOE
46 for "low inventory facilities." These limitations are defined in DOE-STD-1027-92, Hazard Categorization
47 and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis
48 Reports, and are included in the radiation work permit for the mixed waste storage area.

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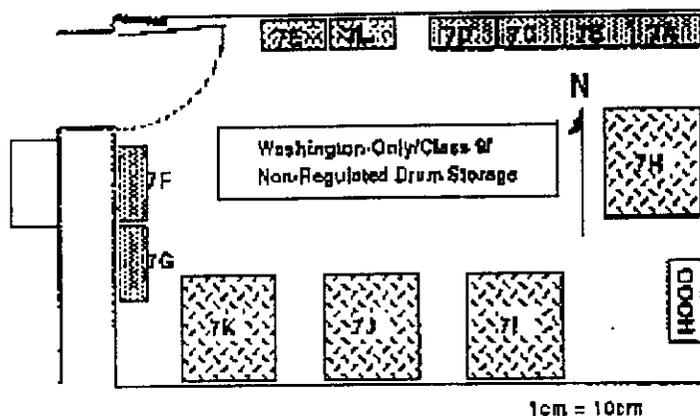
Scale: 1/4"=1" prox.

LEGEND

- 1 Flammable RMW Storage Module
- 2 Removable hatch cover for basement access (surrounded by railing)
- 3 Nonhazardous supplies storage
All PCB waste stored in Cell 9 shall be stored in trays, or drum overpacks that meet all the requirements of 40 CFR 761.65(b).

Figure 4-8. Flammable Radioactive Mixed Waste Storage Area.

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7 **Cell 7 Legend**

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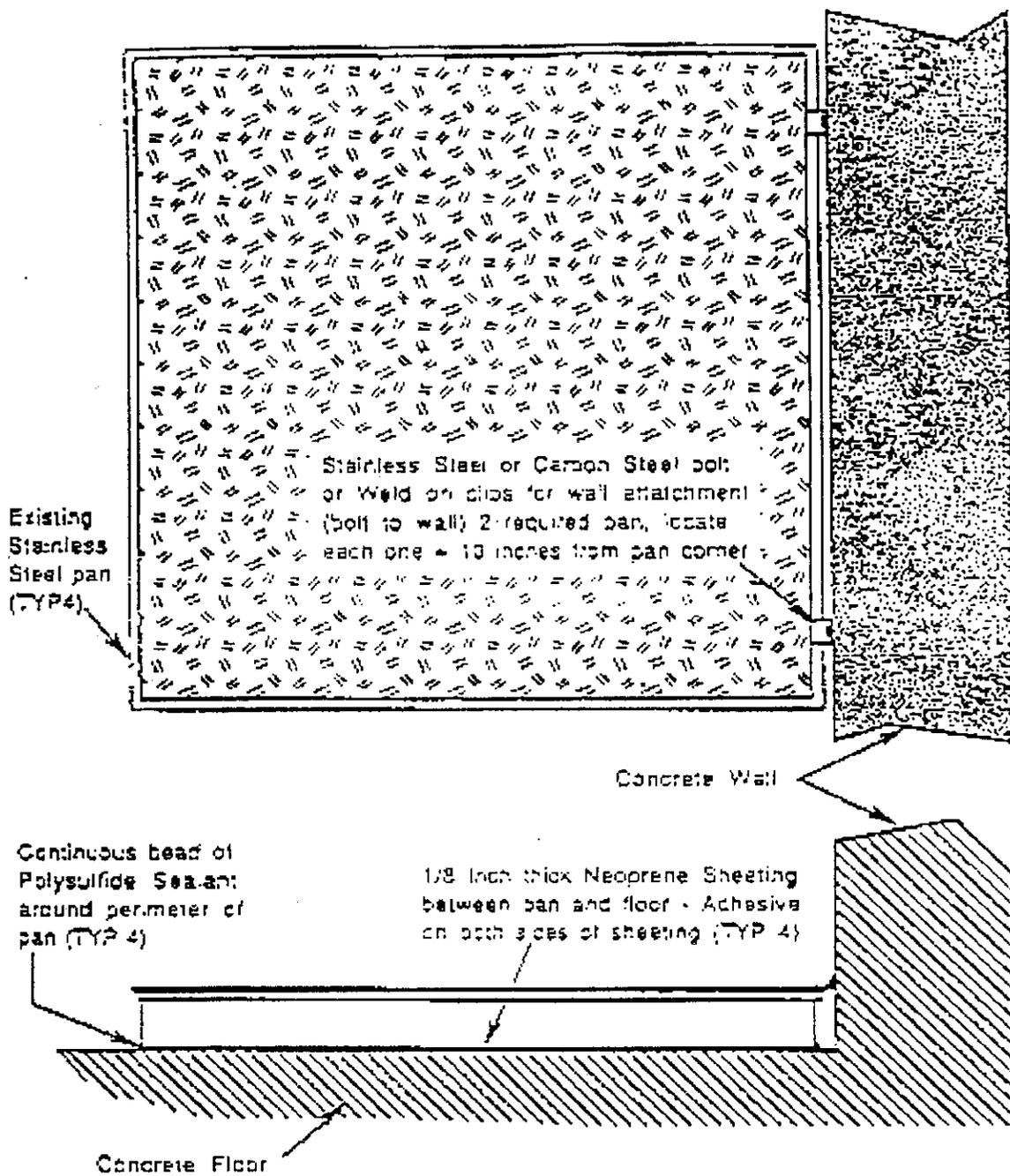
- 9 7A Poisons
- 10 7B Oxidizers
- 11 7C Class 9
- 12 7D Washington Only
- 13 7E Flammable Solids
- 14 7F Corrosive Base
- 15 7G Corrosive Acid
- 16 7H Corrosive/PCB's
- 17 7I Corrosive Acid/PCB's
- 18 7J PCB's
- 19 7K Washington Only/Class 9/PCB's
- 20 7L Non-Regulated

21 HOOD 121.9cm L x 54.2cm D x 228.6cm H

22 All PCB waste stored in Cell 7 will be segregated according to chemical compatibility, and stored in any of
23 the four stainless steel container pans complying with 40 CFR 761.65(b)

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Figure 4-9. Radioactive Mixed Waste Storage.



PAN TOP & SIDE VIEW

Non Flammable RMW Cell Secondary Containment Pan Installation

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Figure 4-10. RMW Storage Cell Containment Pan Installation

Table 4-1. Limits for Radionuclides in 305-B

Isotope	Category ³ Curies	Thresholds Grams	Isotope	Category ³ Curies	Thresholds Grams	Isotope	Category ³ Curies	Thresholds Grams
H-3	1.0E+03	1.0E-01	Tc-99	1.7E+03	1.0E+05	Hf-181	7.0E+02	4.5E-02
C-14	4.2E+02	9.4E+01	Ru-106	1.0E+02	3.0E-02	Ir-192	9.4E+02	1.0E-01
Na-22	2.4E+02	3.8E-02	A9-100M	2.6E+02	5.5E+02	Au-198	2.0E+03	8.2E-03
P-32	1.2E+01	4.2E-05	Cd-109	1.8E+02	7.0E-02	Hg-203	3.6E+02	2.6E-03
P-33	9.4E+01	6.0E-04	Cd-113	1E+01	3.2E+13	Pb-210	3.6E-01	4.7E-03
P-32,acid	1.2E+01	4.2E-05	In-114M	2.2E+02	9.5E-03	Bi-207	5.0E+C2	9.7E+00
P-33,acid	9.4E+01	6.0E-04	Sn-113	1.3E+03	1.3E-01	Bi-210	3.2E+02	2.6E-03
S-35	7.8E+01	1.8E-03	Sn-123	3.2E+02	3.9E-02	Po-210	1.9E+00	4.2E-04
Cl-36	3.4E+02	1.0E+04	Sn-126	1.7E+02	6.0E+03	Rn-222	1.0E+01	6.5E-05
K-40	1.7E+02	2.4E+07	Sb-124	3.6E+02	2.1E-02	Ra-223	6.2E+01	1.2E-03
Ca-45	1.1E+03	6.2E-02	Sb-126	2.8E+02	3.4E-04	Ra-224	2.0E+02	1.2E-03
Ca-47	7.0E+02	1.1E-03	Te-127m	4.0E+02	4.2E-04	Ra-225	7.2E+01	1.8E-03
Sc-46	3.6E+02	1.1E-02	Te-129m	4.0E+02	1.3E-02	Ac-225	3.2E+01	5.5E-04
Ti-44	6.2E+01	3.6E-01	I-125	5.6E-01	3.2E-05	Ac-227	4.2E-02	5.8E-04
V-48	6.4E+02	3.8E-03	I-131	9.2E-01	7.4E-06	Th-228	1.0E+00	1.2E-03
Cr-51	2.2E+04	2.4E-01	Xe-133	2.0E+04	1.1E-01	Th-230	6.2E-01	3.1E+01
Mn-52	3.4E+02	7.6E-04	Cs-134	4.2E+01	3.3E-02	Th-232	1.0E-01	9.1E+05
Fe-55	5.4E+03	2.2E+00	Cs-137	6.0E+01	6.9E-01	U-233	4.2E+00	4.4E+02
Fe-59	6.0E+02	1.2E+02	Ba-133	1.1E+03	4.3E+00	U-234	4.2E+00	6.7E+02
Co-60	2.8E+02	2.5E-01	Ba-140	6.0E+02	8.2E-03	U-235	4.2E+00	1.9E+06
Ni-63	5.4E+03	9.5+01	Ce-141	1.0E+03	3.5E-02	U-238	4.2E+00	1.3E+07
Zn-65	2.4E+02	2.9E-02	Ce-144	1.0E+02	3.1E-02	Np-237	4.2E-00	6.0E+02
Ge-68	1.0E+03	1.5E-01	Pm-145	2.0E+03	1.4E+01	Np-238	1.3E+03	5.0E-03
Se-75	3.2E+02	2.2E-02	Pm-147	1.0E+03	9.5E-01	Pu-238	6.2E-01	3.6E-02
Kr-85	2.0E+04	5.1E+01	Sm-151	1.0E+03	3.8E+01	Pu-239	5.2E-01	8.4E+00
Sr-89	3.4E+02	1.2E-02	Eu-152	2.0E+02	1.2E+00	Pu-241	3.2E+01	3.1E-01
Sr-90	1.6E+01	1.2E-01	Eu-154	2.0E+02	7.6E-01	Am-241	5.2E-01	1.5E-01
Y-91	3.6E+02	1.5E-02	Eu-155	9.4E+02	2.0E+00	Am-242m	5.2E-01	5.3E-02
Zr-93	6.2E+01	2.5E+04	Gd-153	1.0E+03	2.8E-01	Am-243	5.2E-01	2.6E+00
Zr-95	7.0E+02	3.3E-02	Tb-160	5.6E+02	5.0E-02	Cm-242	3.2E+01	9.7E-03
Nb-94	2.0E+02	1.1E+03	Ho-166m	7.2E+01	4.0E+01	Cm-245	5.2E-01	3.0E+00
Mo-99	3.4E+03	7.1E-03	Tm-170	5.2E+02	8.7E-02	Cf-252	3.2E+00	6.0E-03

NOTE: If more than one radionuclide is in storage at 305-B, the amount of radioactive material present may not exceed the quantity calculated using the following formula: $(X_i/Y_i) W \leq 1$ where X is the quantity of each individual radionuclide (i) present and Y is the allowable quantity of that radionuclide as found in Table 4-1.
(Source: Backman, GE, BJ McMurray, NP Nisick, and CR Richey. General Safety Assessment Document for PNL-Maneasd Nonreactor Nuclear Facilities. PNL-3280. Pacific Northwest Laboratory, Richland, WA.

1 **4.1.1.6.13 Explosives Storage Area.** Due to UBC restrictions, wastes classified as explosive by DOT
2 regulations are stored in a 3' x 3' x 3' explosives magazine, with a 8 cubic foot interior, outside cell 1. The
3 magazine is constructed of steel and is certified to have been fabricated per Institute of Makers of
4 Explosives (IME) SLP22, type 2 day box requirements. No more than 1 lb. of explosives is stored in the
5 magazine at one time. The location of the magazine is indicated in Figure 4-7.
6

7 **4.1.1.7 Control of Run-On [D-1a(7)]**
8

9 The 305-B Storage Unit was designed to eliminate the likelihood of on-site, or for that matter, off-site
10 migration via run-on and run-off. The facility is completely enclosed (i.e., complete roof and WA,
11 1981.)no open walls) and has been constructed upon a foundation so that precipitation cannot cause either
12 run-on or run-off problems.
13

14 **4.1.1.8 Removal of Liquids from Containment System [D-1a(8)]**
15

16 Upon discovery of liquid accumulation in the containment resulting from a spill or other release, the BED
17 must be contacted in accordance with the 305-B contingency plan (Chapter 7). The BED may determine
18 that the contingency plan should be implemented. If the incident is minor, and the BED approves, removal
19 of the liquids will commence immediately following a safety evaluation. Appropriate protective clothing
20 and respiratory protection will be worn during removal activities; a PNNL industrial hygienist may be
21 contacted to determine appropriate personnel protection requirements and any other safety requirements
22 that may be required, such as chemical testing or air monitoring. In addition, ventilation of the spill-
23 impacted area may be performed if determined to be safe and if appropriate monitoring of the air
24 discharge(s) is performed.
25

26 Spills are normally contained either within the storage cabinet, within the cell, or within a secondary
27 containment trench or berm as described in Section 4.1.1.5. In any case, spilled material will be recovered
28 to the extent possible by pumping recovered liquids with a pump made of nonreactive materials (either steel
29 or PVC) to intact containers selected in accordance with the container selection procedure in Section
30 4.1.1.1. Nonrecoverable liquids will be absorbed with an appropriate absorbent (after appropriate
31 chemical reaction to neutralize reactivity in the case of reactive waste, or neutralization in the case of
32 corrosive materials); see Table 6.2 for list of available materials for this purpose. The absorbent material
33 will then be recovered and placed in a container selected in accordance with Section 4.1.1.1, using
34 nonsparking shovels in the case of ignitable waste. The floor, cabinets and any other impacted containers
35 may be cleaned with dry rags, soap and water, or a compatible solvent if necessary to remove external
36 contamination. Contaminated rags and other cleanup material will be disposed of in an appropriate
37 manner. Verification sampling shall be carried out in accordance with Section 11.1.4.4. (Methods for
38 sampling and testing to demonstrate success of decontamination).
39

40 **4.1.2 Containers Without Free Liquid That Do Not Exhibit Ignitability or Reactivity [D-
41 1b]**
42

43 This section is not applicable to 305-B because the storage area is used to store containers both with and
44 without free liquids. 305-B does not meet the conditions for reduced requirements for storing only
45 containers without free liquid; therefore, the facility is subject to the full requirements for containment.

1 **4.2 PROTECTION OF EXTREMELY HAZARDOUS WASTE IN CONTAINERS [D-2]**

2
3 All wastes are stored inside of 305-B, within the storage areas described in Section 4.1.1.6. These
4 locations are completely enclosed from the weather, as described in Section 4.1.1.7, meeting the
5 requirements of WAC 173-303-630(7)(d).
6

7 **4.3 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND**
8 **INCOMPATIBLE WASTES IN CONTAINERS [D-3]**
9

10 The following sections provide information on the management of ignitable, reactive, and incompatible
11 waste in containers. Additional information on this subject can be found in Section 6.5.
12

13 **4.3.1 Management of Ignitable or Reactive Wastes in Containers [D-3a]**
14

15 Ignitable and reactive wastes are stored in compliance with Uniform Fire Code Division II regulations for
16 Container and Portable Tank Storage Inside Buildings (International Conference of Building Officials
17 1988). Containers of ignitable and reactive waste are stored in individual flammable material storage
18 cabinets within the storage cells.
19

20 **4.3.2 Management of Incompatible Wastes in Containers [D-3b]**
21

22 Section 6.5.2 describes procedures used at 305-B to determine the compatibility of dangerous wastes so
23 that incompatible wastes are not stored together. Chemical wastes stored in 305-B are separated by
24 compatibility, chemical makeup and hazard class and stored in areas having appropriate secondary
25 containment, as described in Section 4.1.1.6.
26

27 As shown in Figures 4-2 through 4-11, each storage area has individual storage configurations; secondary
28 containment structures are provided to assure that incompatible materials will not commingle if spilled.
29 Further segregation is provided by chemical storage cabinets located throughout the facility in various
30 areas as shown in Figures 4-2 through 4-11. Cabinet types are noted in those figures and capacities
31 described in Table 4-2. Incompatible wastes are never placed in the same container, or in unwashed
32 containers that previously held incompatible waste.
33

34 Compliance with WAC 173-303-395(1)(b) is assured utilizing the reactivity groupings given in A Method
35 for Determining the Compatibility of Hazardous Waste (EPA 1980). Use of this system is described in
36 "Procedures for Hazardous Waste and Radioactive Mixed Waste Management and Disposal at Pacific
37 Northwest Laboratory." This internal procedure is part of the 305-B Operating Record, as required by
38 WAC 173-303-395(1)(c).
39

40 **4.3.3 Tank System [D-3c]**
41

42 This section is not applicable to the 305-B Storage Unit because wastes are not managed in tanks.
43

44 **4.3.4 Waste Piles [D-3d]**
45

46 This section is not applicable to the 305-B Storage Unit because wastes are not managed in waste piles.
47

48 **4.3.5 Surface Impoundments [D-3e]**
49

1 This section is not applicable to the 305-B Storage Unit because wastes are not placed in surface
 2 impoundments.

3
 4 **4.3.6 Incinerators [D-3f]**

5
 6 This section is not applicable to the 305-B Storage Unit because wastes are not incinerated.

7
 8 **4.3.7 Landfills [D-3g]**

9
 10 This section is not applicable to the 305-B Storage Unit because wastes are not placed in landfills.

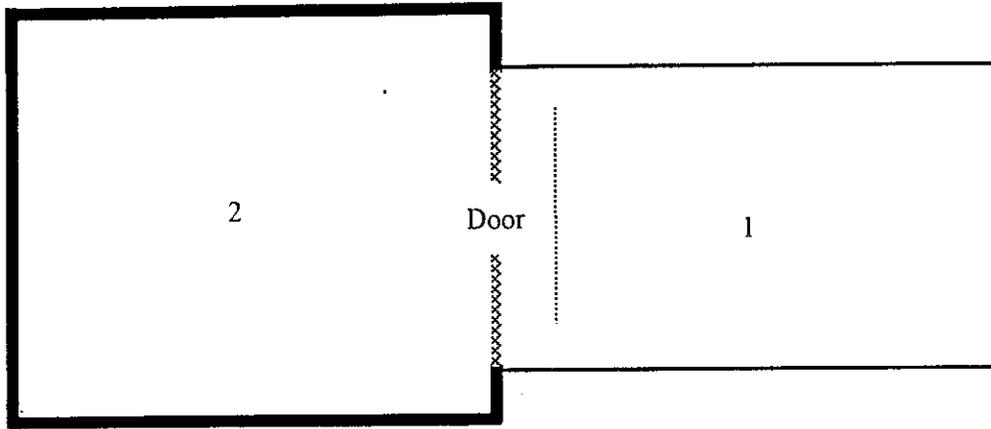
11
 12 **4.3.8 Land Treatment [D-3h]**

13
 14 This section is not applicable to the 305-B Storage Unit because wastes are not treated in land treatment
 15 units.

16
 17
 18 Table 4-2. Storage Devices Used at the 305-B Unit

Storage Device	Typical Use	External Dimensions (in.)	Capacity (gal/ft ³ .)
Small Cabinet	Storage of containers (5 gallons or less capacity)	43w x 18d x 65h	50 max
Medium Cabinet	Storage of containers (18.93 liter [5 gal] or less capacity)	31w x 31d x 65h	60 max
Large Cabinet	Storage of containers (5 gallons or less capacity)	34w x 34d x 65h	80 max
Small Drum Cabinet	Storage of drums (5 to 55 gallons capacity)	34w x 34d x 65h	65 max
Large Drum Cabinet	Storage of drums (5 to 55 gallons capacity)	59w x 34d x 65h	130 max
Small Shelving	Storage of containers (5 gallons or less capacity)	47w x 18d x 62h	65 max
Large Shelving	Storage of containers (5 gallons or less capacity)	72w x 18d x 62h	100 max
Flammable Storage Module	18.93 liter [5 gal] to 208.18 liter [55 gal] capacity	78w x 73d x 100h	240 max
Refrigerator/Freezer	Storage of containers of organic peroxides and other temperature sensitive wastes	34w x 29d x 67h	25 cu. ft.
Explosives Magazine	Storage of containers containing DOT classified explosives	36w x 36d x 36h	8 cu. ft.

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LEGEND

- 1 Loading Ramp
- 2 Drum/Container Storage Area (Flammable liquid storage, 240 gallon max.)

Figure 4-11. Flammable Liquids Storage Module

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6.0 PROCEDURES TO PREVENT HAZARDS [F]

The 305-B Storage Unit is operated to minimize exposure of the general public and operating personnel to dangerous and mixed wastes.

6.1 SECURITY [F-1]

Security for 305-B is provided by a combination of the overall security system for the 300 Area, and a specific security system for the waste storage unit. The former controls access to the 300 Area proper, while the latter controls access to 305-B.

The 305-B Storage Unit is located within the Hanford 300 Area. As part of the Hanford Site, the 300 Area is subject to a restricted access and personnel security system for the protection of Government property, classified information, and special nuclear materials. The 300 Area is a controlled access area with access limited to persons authorized to enter and having appropriate security clearances or escorts.

The security program for 305-B, in addition to 300 Area access, is designed to limit building access to those personnel within the 300 Area authorized to enter the unit. Access to 305-B can be gained through five walk-in doors, and two large roll up doors which facilitate loading and unloading activities. All doors to 305-B are kept locked at all times except when in use. All requests for keys are reviewed and approved by the unit operating supervisor and the building manager, and a record of the personnel issued keys is kept in the Operating Record at all times.

Keys to the unit are issued only to unit personnel, security personnel, and emergency response personnel. Any additions to this list are approved by the unit operating supervisor, the line manager, and the building manager and are noted in the operating record of the unit.

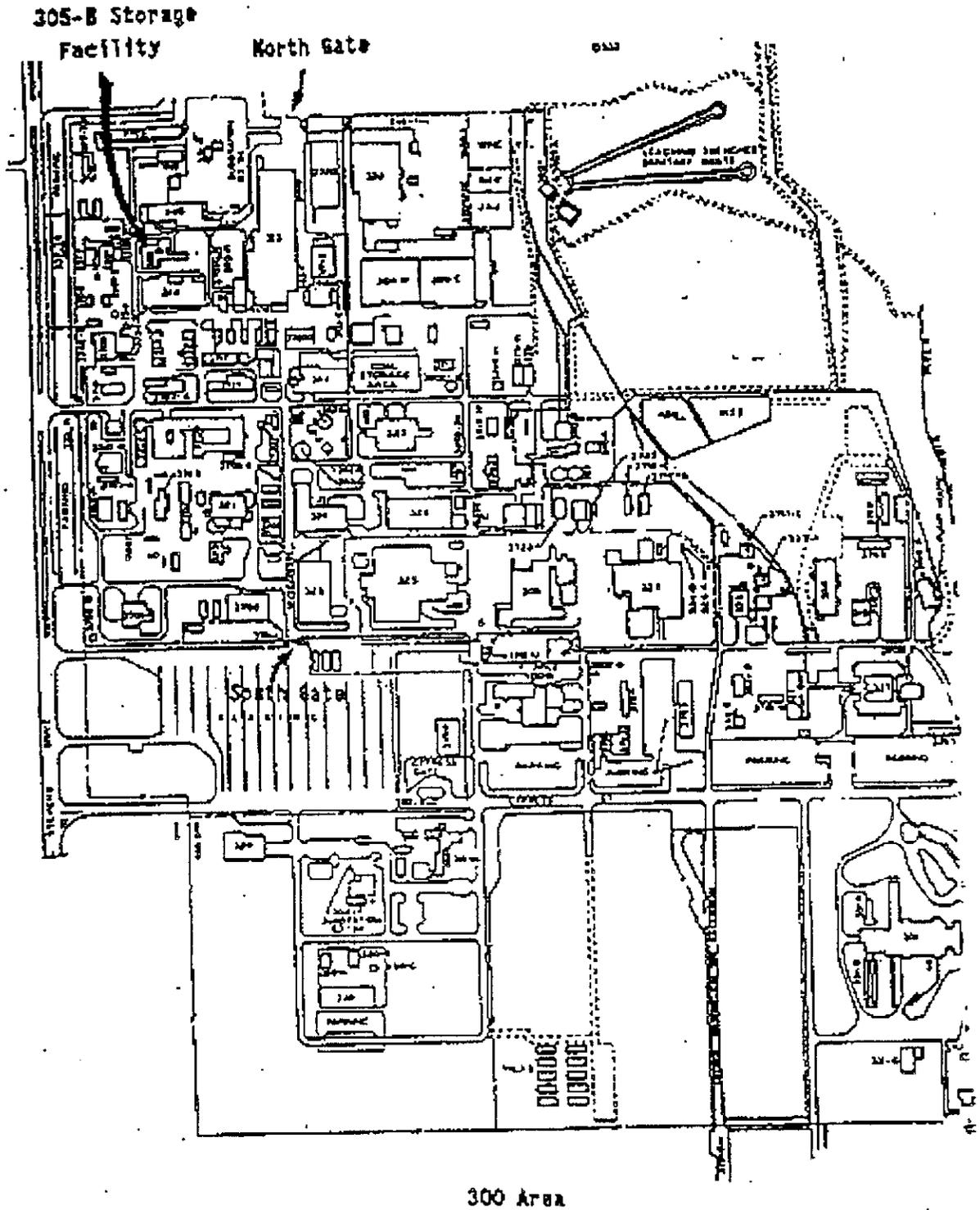
Specific aspects of the security programs for both the 300 Area and 305-B Storage Unit are described in more detail below.

6.1.1 Security Procedures and Equipment [F-1a]

The following sections describe the 24-hour surveillance system, barrier, and warning signs used to provide security and control access to the 305-B Storage Unit.

6.1.1.1 24-Hour Surveillance System [F-1a(1)].

The 305-B unit does not maintain a 24-hour surveillance system. Entrances to the building are kept locked except when the building is in use to prevent unauthorized access. Normal working hours for the unit are 8:00 A.M. to 4:30 P.M. Monday through Friday except holidays. The Hanford Patrol maintains frequent drive-by surveillance of the 300 Area buildings, including 305-B, on a 24-hour basis to ensure that no unauthorized access to the area has occurred.



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Figure 6-1. Normal Site Access - Entrance at the Southern End of Wisconsin Avenue and the North End of the 300 Area. Barrier and Means to Control Entry [F-1a(2)(a), (2)(b)]

1 The entire 300 Area is surrounded by an 8-ft chain link fence topped with three strands of barbed wire.
2 There is no separate fence surrounding the 305-B unit. All waste management activities, however, are con-
3 ducted within the unit. The facility itself, therefore, provides a barrier completely surrounding the active
4 waste management operations.

5
6 Entry to the unit is controlled through the use of locked entrances. The 305-B Storage Unit is kept locked
7 at all times except when in use. Physical control of keys and records of key distributions are maintained by
8 PNNL Security. Distribution of keys to 305-B is subject to approval by the manager of the waste
9 management organization, the building manager, and the facility operating supervisor, and a list of those
10 personnel in possession of keys is kept in the Operating Record for 305-B. Personnel in possession of keys
11 have been instructed to admit only persons having official business. All visitors to the unit must be
12 escorted by waste management organization personnel.

13 14 6.1.1.2 Warning Signs [F-1a(3)]

15
16 The 305-B Storage Unit is posted with "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT" and
17 "305-B CHEMICAL WASTE STORAGE BUILDING" signs near each entrance on all sides of the unit
18 The signs are clearly visible from the required distance of 25 ft.

19 20 6.1.2 Waiver [F-1b(1), (2)]

21
22 Waivers of the security procedures and equipment requirements for 305-B are not required and will not be
23 requested.

24 25 6.2 INSPECTION SCHEDULE [F-2]

26
27 The purpose and intent of implementing inspection procedures at 305-B are to prevent malfunctions,
28 deterioration, operator errors, and/or discharges which may cause or lead to the release of regulated waste
29 to the environment or threats to human health. A system of daily, weekly, monthly, quarterly, once every
30 four months, and annual inspections involving various PNNL departments and levels of management are
31 implemented at 305-B.

32 33 6.2.1 General Inspection Requirements [F-2a]

34
35 The content and frequency of inspections performed at 305-B are described in this section. Also, described
36 is maintenance of inspection records.

37 38 6.2.1.1 Types of Problems [F-2a(1)]

39
40 Daily, weekly, monthly, quarterly, once every four months, and annual inspections are performed at 305-B.
41 The types of problems addressed by each of these inspections are described below.

42
43 Daily Inspections. The 305-B Storage Unit is inspected daily whenever waste packaging, transfer,
44 shipping, or movement operations are being carried out. Daily inspections monitor container condition and
45 integrity, the building waste containment system, and other building areas where wastes are handled.
46 Specific inspection points include:

- 47
48 • Inspection of stored containers for leaks or damage
49 • Mislabeled or opened containers
50 • Improper storage (e.g., incompatible waste storage)

- 1 • Disorderliness or uncleanness of a storage unit
- 2 • Check for accumulation of wastes in containment systems

3
4 Results of these daily inspections are recorded in the daily operating logbook, which is part of the
5 permanent 305-B Operating Record.

6
7 **Weekly Inspections.** Waste management organization personnel conduct weekly inspections of both safety
8 and operating equipment in 305-B. Safety and emergency equipment are inspected for functionality and
9 adequacy of supply. The weekly inspection is conducted by two personnel on the last workday of each
10 week using the Weekly Inspection Checklist Form (Fig. 6-2) and Inspection Logbook. The Inspection
11 Checklist and Inspection Logbook become a permanent part of the 305-B Operating Record.

12
13 Specific problems to be looked for with each of the items inspected are identified on the Inspection
14 Checklist Form. The use of this form enhances inspection effectiveness by providing a consistent and
15 detailed listing of areas of potential problems and those safeguards in place to prevent them. There is space
16 provided on the form for the inventory summary, comments, required remedial actions (if any), as well as
17 the date such actions are accomplished. The inspector is required to sign and date the inspection checklist
18 after performing the inspection. In addition, a space is provided for the dated signature of the co-inspector.
19 A copy of the completed inspection form with any assigned action items is distributed to the responsible
20 operating personnel. All corrective actions required must be completed within one week of the inspection
21 which found them deficient, unless there are documentation and reason for further delay. When corrective
22 action has been completed, the responsible personnel date and initial the form.

23
24 **Monthly Inspections.** Monthly oversight inspections are conducted by the manager of the waste
25 management organization or his designee. This monthly inspection is conducted on or near the last
26 workday of each month using the Monthly Inspection Checklist Form (Fig. 6-3). Items targeted for
27 monthly inspection include, but are not limited to, equipment function and condition, housekeeping,
28 chemical inventory, weekly inspections and corresponding corrective actions, safety equipment operation,
29 spill control and cleanup supplies, and general packaging material inventory. Specific problems to be
30 looked for with each of the items inspected are identified on the Inspection Checklist Form. An internal
31 memorandum from the manager of the waste management organization to the Laboratory Safety
32 Department manager reports the findings of the monthly inspections. Copies of the inspection report
33 memorandum are provided to operations personnel and maintained in the files of the waste management
34 organization. Any corrective action noted on the management inspection checklist or deterioration or
35 malfunctions in equipment discovered by the inspector are delegated to responsible individuals in the
36 operations group. Corrective actions identified in the monthly management inspection must be completed
37 within two weeks unless there are documentation and reason for further delay. Monthly management
38 inspection report memos and corrective action response documentation are part of the 305-B Operating
39 Record.

40
41 **Quarterly, Once Every Four Months, and Annual Inspections.** In addition to the several layers of
42 management inspection of 305-B, safety inspections are performed to assure the fire protection system, eye
43 wash/shower unit, and walk-in hood ventilation system are in working order. The Hanford 300 Area Fire
44 Department performs "once every four months" an inspection of fire suppressant and notification systems
45 (i.e., sprinkler system and pull boxes). This inspection includes flow tests of the sprinklers to assure no
46 blockage in the system lines as well as activation of the alarm system to assure proper operation of pull
47 boxes. On an annual basis, the Fire Department performs a full inspection of the sprinkler system, heat
48 detectors, and pull boxes. A complete flow test is performed from the furthest valve to assure flow through

Weekly Inspection Form
305-B Chemical Waste Storage Unit

Inspector Name (print): _____ Inspector Signature: _____ Time/Date: _____

Co-Inspector Name (print): _____ Co-Inspector Signature: _____ Time/Date: _____

Waste Containment Locations (Y=Yes, N=No)

Earliest PCB Accumulation Date in Cell 2: _____ Earliest RMW PCB Accumulation Date: _____

Cell:	1 Oxidizer Acids	2 Poison, PCB, Class 9	3 Caustic WSDW Non-Reg.	4 Flammable, Combustible, Aerosols	5 Flammable Bulking Cylinders	6 Asbestos	7 Non-Flammable RMW	8 Flammable Drum Storage	9 Flammable RMW	10 Non-Reg. Yard	11 WSDW, Class B Non-Reg. Drums	12 Oxidizer Drums	13 Acid Drums	14 Alkaline Drums	15 Explosives Magazine
container integrity good?															
containers properly sealed?															
containers property labeled?															
containers properly segregated?															
floor free of major cracks/gaps?															
sumps empty and dry?															

minimum aisle space present? _____ (44" leading to building exits, 36" all other aisles per NFPA 101, UBS 3315(b)1 and WAC 173-303)

inventory below 30,000 gallon design capacity? _____ Estimated Volume = _____ gallons

inventory below UBC Class B limits? _____ (<480 gallons 1-A, 1-B, 1-C total and/or <240 gallons 1B)

daily inspections logged? _____

Figure 6-2. Weekly Inspection Checklist Form. (Page 1 of 2)

1 the entire system. Fire extinguishers are also checked for proper pressure and function. Records of these
2 fire inspections and their results are kept by the Hanford Fire Department. Documentation of any required
3 corrective actions is kept in the 305-B Operating Record.

4
5 PNNL facilities support staff perform additional documented inspections of the two emergency eye
6 wash/shower units, the walk-in hood air flow, and the elephant-trunk ventilators air flow. The safety
7 showers and air flow of the walk-in hood and elephant-trunk ventilators are inspected quarterly. The
8 emergency eyewash/safety showers are checked for proper operation, and the walk-in hood and elephant-
9 trunk ventilation face velocity must meet a 125-fpm minimum requirement. Records of these safety equip-
10 ment inspections and their results, as well as documentation of any required corrective actions, are
11 maintained by the preventive maintenance staff in PNNL's Facilities Management Department and
12 Technical Services Department.

13 14 **6.2.1.2 Frequency of Inspections [F-2a(2)]**

15 Inspections are conducted on a daily, weekly, monthly, quarterly, and annual basis, as described in Section

16
17 The frequency of inspections are based on specific regulatory requirements and on the rate of possible
18 deterioration of equipment and probability of environmental or human health incidents.

19
20 Areas where dangerous and mixed wastes are actively handled, including the high bay area, storage cells,
21 and flammable liquid bulking module, are considered to be areas subject to spills. These areas are given
22 daily inspections when in use, as required by WAC 173-303-320(2)(c).

23
24 The containment system (i.e., floors and sumps) is inspected daily when in use for accumulation of spilled
25 material. The containment system itself is inspected weekly for structural integrity, (i.e., no cracks, gaps,
26 leaks, etc. which could result in environmental release of wastes in the event of a spill). This frequency is
27 based on the need to perform timely corrective actions in the event that problems are noted.

28
29 Aisle space between containers is inspected weekly. This frequency is based on the consideration of the
30 rate of container transfers and movement within 305-B. Weekly inspections will allow container spacing
31 problems to be identified and corrected before they become major problems.

32
33 Emergency and safety equipment and personal protective equipment is inspected weekly. This frequency is
34 based on consideration of the expected rate of use of this equipment. Use of emergency equipment should
35 not occur more than once during any one-week period. Weekly inspections will assure that this equipment
36 is always functional and available in adequate supply.

37 38 **6.2.2 Specific Process Inspection Requirements [F-2b]**

39
40 The following sections detail the inspections to be performed at the 305-B Storage Unit.

41 42 **6.2.2.1 Container Inspection [F-2b(1)]**

43
44 Dangerous and mixed waste containers stored at 305-B are inspected daily for leakage, evidence of damage
45 or deterioration, proper and legible labeling, and proper lid and bung closure. The containment system is
46 also checked on a daily basis for accumulation of any wastes which may have been spilled into them.
47 Structural integrity of the containment systems is checked on a weekly basis.

1

305-B MONTHLY MANAGEMENT INSPECTION CHECKLIST

Date/Time	Check if Working/ Present	Comments*
Check for working condition: Lights Exhaust fans (2 in highbay) Eye wash/showers (3) Fire extinguishers		
Check housekeeping: Inside Outside Aisles/walkway clear Sumps dry		
Check waste storage: Weekly inspection conducted/filed? Facility crowded? Container condition Proper segregation		
Check supply and condition of safety equipment: Gloves - leather and disposable Goggles Face shields Coverall/lab coats Masks and cartridges		
Check spill control and cleanup supplies: Spill pillows - general Neutralizers Mercury Solvent		
Check packaging material: Drums - 5 gallon Drums - 30 gallon Drums - 55 gallon Absorbent - oil dry Absorbent - vermiculite Labels Marking supplies: pens/spray paint		

*Corrective actions required within two weeks.

2
 3
 4

Figure 6-3. Monthly Inspection Checklist Form.

1 Daily and weekly inspections are performed and documented in accordance with Section 6.2.1.1. Specific
2 inspection items are enumerated in Section 6.2.1.1 in association with the inspection description and
3 frequency. Response to problems, and documentation of corrective actions are as described in
4 Section 6.2.1.1.

5
6 **6.2.2.2 Tank Inspection [F-2b(2)]**

7
8 This section does not apply to the 305-B Storage Unit because wastes are not stored or treated in tanks.

9
10 **6.2.2.3 Waste Pile Inspection [F-2b(3)]**

11
12 This section does not apply to the 305-B Storage Unit because wastes are not placed in waste piles.

13
14 **6.2.2.4 Surface Impoundment Inspection [F-2b(4)]**

15
16 This section does not apply to the 305-B Storage Unit because wastes are not placed in surface
17 impoundments.

18
19 **6.2.2.5 Incinerator Inspection [F-2b(5)]**

20
21 This section does not apply to the 305-B Storage Unit because wastes are not incinerated.

22
23 **6.2.2.6 Landfill Inspection [F-2b(6)]**

24
25 This section does not apply to the 305-B Storage Unit because wastes are not placed in landfills.

26
27 **6.2.2.7 Land Treatment Facility Inspection [F-2b(7)]**

28
29 This section does not apply to the 305-B Storage Unit because wastes are not treated in land treatment
30 units.

31
32 **6.3 WAIVER OR DOCUMENTATION OF PREPAREDNESS AND PREVENTION**
33 **REQUIREMENTS [F-3]**

34
35 The following documents the preparedness and prevention measures taken at the 305-B Storage Unit.

36
37 **6.3.1 Equipment Requirements [F-3a]**

38
39 The following sections describe the internal and external communications and emergency equipment in use
40 at 305-B.

41
42 **6.3.1.1 Internal Communications [F-3a(1)]**

43
44 Internal communication systems are used to provide immediate emergency instruction to personnel in
45 305-B. Internal communications address general emergencies which may occur in the 300 Area as well as
46 specific emergencies which may occur in 305-B.

47
48 Because of the nature of activities which occur in the 300 Area, the potential exists for emergencies outside
49 of 305-B (e.g., release of radioactive materials) which could impact operations and staff in 305-B. For this
50 reason, the general emergency signals for the 300 Area are applicable to 305-B. These signals are

1 summarized in Table 6-1. Fire alarm signals are located in each building throughout the 300 Area. The
2 nearest emergency siren for "area evacuation" and "take cover" is located 300 yards southeast of 305-B, on
3 top of the 326 Building, and is audible in all parts of 305-B. Because fissile materials are not handled in
4 305-B, there is no criticality alarm for the unit.

5
6 Internal communications to provide emergency instruction in the event of an emergency in 305-B are fire
7 alarms, public address (PA) system, and telephones. The fire alarms are to be used to provide notification
8 for immediate evacuation of 305-B. Fire alarm pull boxes are located at all exits of the facility such that
9 operating personnel have immediate access to one in all portions of 305-B. Four fire alarm bells are
10 located within the 305-B and are audible at all locations within the building. The locations of the fire alarm
11 bells are shown in Figure 6-4 and are as follows: (1) an office wing on the northeast hall; (2) an office wing
12 next to the east entrance; (3) on the south wall of the basement; and (4) on the northeast wall of the high
13 bay. The PA system is to be used for building-wide broadcasting of verbal emergency instructions to
14 305-B staff. The PA system can be accessed from any unit telephone by dialing 6-1885. The PA system
15 speakers are located in the high bay, in the basement, and in the office wing of 305-B.

16
Table 6-1. Emergency Signals and Responses

Signal	Meaning	Response
Gong	Fire	Evacuate building. Move upwind. Keep clear of emergency vehicles.
Siren - steady 3-5 minute blast	Area Evacuation	Proceed promptly to north parking area. Stand by to follow instructions from emergency director.
Wavering Siren	Take Cover	Close up the 305-B Building, turn off all intake ventilation and go to the 314 Building south of the facility. Contact Laboratory Safety (337 Building) with your whereabouts. If this cannot be accomplished, stay in the 305-B Building until notified that it is safe to leave
Howler (Aa-oo-gah)	Criticality	Run immediately at least 100 yards away from the signal and take cover. Personnel inside the 305-B Building should follow the "take cover" procedure and wait for further instructions.
ALL EMERGENCY SIGNALS CAN BE HEARD BY PHONING 373-2345		

17
18 The telephone system is to be used to provide verbal emergency instructions to 305-B staff. The telephone
19 can also be used to verbally transmit emergency data to non-305-B staff, and to request emergency
20 services. A network of telephones covers both floors of the facility. Locations of telephones are shown in
21 Figure 6-4. In addition to the telephone communication system at 305-B, operation personal have access to
22 the hand held radios, as well as one in each vehicle assigned to the facility.

23
24 **6.3.1.2 External Communications [F-3a(2)]**

25
26 As mentioned in Section 6.3.1.1 above, both a fire alarm system and telephone network system are in place
27 at 305-B. Both systems can be used to summon emergency assistance. The fire alarm system summons
28 direct response from the Hanford Fire Department's 300 Area Station. The telephone system can be used
29 to access Hanford's Emergency Network directly at 375-2400 or by dialing the emergency number, 811.
30 Locations of fire alarm pull boxes and telephones are given in Figure 6-4.

31
32 **6.3.1.3 Emergency Equipment [F-3a(3)]**

33
34 Emergency equipment available for trained 305-B personnel includes portable fire extinguishers, a fire
35 suppression system, spill response equipment, and decontamination equipment. Seven portable 10-lb ABC
36 fire extinguishers, one 15-lb (or larger) Class D fire extinguisher for combustible metals, and one portable

1 14-lb Halon fire extinguisher are available at various locations throughout 305-B, as shown in Figure 6-4.
2 The 10-lb ABC extinguishers are located: (1) next to the east entrance; (2) northwest end of the basement;
3 (3) southwest end of the high bay; (4) outside of the bulking module door; (5) north of Cell No. 4 entrance;
4 and (6) north-west end of high bay. A 15-lb ABC extinguisher is located outside cell 7. The 15-lb (or
5 larger) class D extinguisher is located on the exterior of the organics cell wall north of the entrance. The
6 one Halon fire extinguisher is located in the office area.

7
8 The facility is also equipped with an automatic fire suppression system consisting of galvanized steel,
9 schedule 40 per ASTM A120 pipe and 150-lb malleable iron per ANSI B16.3 fittings. All components are
10 UL-listed or FM-approved, and installation of the fire sprinkler system has been conducted in accordance
11 with NFPA 13 for ordinary hazard. Spill cleanup supplies and equipment maintained are summarized in
12 Table 6-2. Two emergency eye wash/showers are available for emergency personnel decontamination.
13 The locations of the emergency eye wash/showers are shown in Figure 6-4. If needed, additional
14 emergency equipment can be provided by the Hanford Fire Department. Emergency equipment available
15 through the Hanford Fire Department for hazardous materials response is identified in Appendix 6A.

16 17 **6.3.1.4 Water for Fire Control [F-3a(4)]**

18
19 Adequate water volume and pressure are supplied by the large diameter line which services 305-B for
20 potable use and fire protection. Three fire hydrants are located in immediate proximity to serve the 305-B
21 facility: (1) 80 ft directly north of the northwest corner of 305-B; (2) 40 ft directly south of the southwest
22 corner of 305-B; and (3) 60 ft directly east of the southeast corner of 305-B. In addition, the Hanford Fire
23 Department's 300 Area Station is located within 0.25 mile of 305-B.

24 25 **6.3.2 Aisle Space Requirements [F-3b]**

26
27 Containers stored in the 305-B unit are placed to provide aisle space clearance in accordance with
28 WAC 173-303-340(3) and applicable standards of the Uniform Building Code and Life Safety Code. The
29 proper maintenance of aisle space is inspected weekly and noted on the weekly inspection checklist
30 (Figure 6-2).

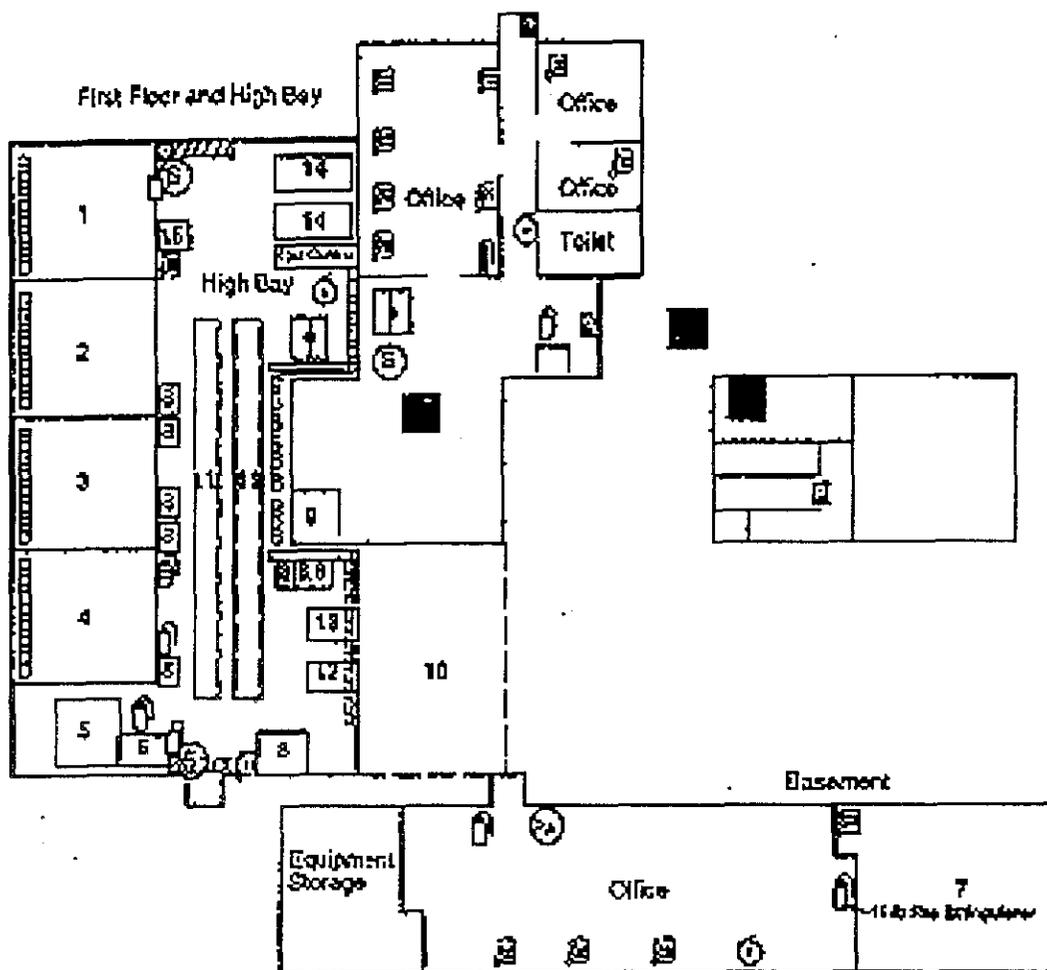
31 32 **6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [F-4]**

33
34 The following sections describe preventive procedures, structures, and equipment.

35 36 **6.4.1 Unloading Operations [F-4a]**

37
38 Procedures have been developed at 305-B to prevent hazards and minimize the potential for breakage,
39 punctures, or the accidental opening of containers during waste unloading. All waste unloading is
40 performed inside the 305-B Storage Unit. The large bay door is opened and the appropriate transporting
41 vehicle (usually a pickup truck) is driven inside. As described in Section 4.1.1.3, the unloading area has
42 secondary containment. By unloading all wastes inside the fully-contained facility, spills during unloading
43 operations will be contained. Procedures for unloading and transferring wastes to storage areas have been
44 designed to minimize hazards. All wastes are inspected prior to shipment to 305-B to ensure that they are
45 in appropriate containers and that the containers are in good condition. Inspection of containers prior to
46 acceptance at 305-B minimizes the potential for spills during unloading operations. The potential for spills
47 during waste handling is minimized through the use of appropriate container handling equipment. Large
48 waste items such as drums of nonflammable RMW are lowered into the basement of the facility for storage
49 using an overhead crane or winch assembly. The containers are immediately transported, via a hand lift,
50

1
 2



Legend

- 1. Acids, Oxidizers
- 2. Poisons, Class B's
- 3. Alkalines, WSDW, Organic Peroxides
- 4. Organics and Compressed Aerosols
- 5. Flammable Liquid Bulking Modules and compressed gases
- 6. Asbestos Cabinet
- 7. RMW Storage Cell
- 8. Flammable Storage
- 9. Small Quantity Flammable RMW
- 10. Outdoor Non-Regulated Drum Storage
- 11. WSDW/HORM/Non-Reg Drums
- 12. Oxidizer Drums
- 13. Acid Drums
- 14. Alkaline Drums
- 15. Explosives Magazine

- (S) Safety Shower/Eyewash
- ☎ Phone
- (A) Fire Alarm Bell
- ☐ Fire Alarm Pull Box
- 🔥 14-lb Halon Fire Extinguisher
- 🔥 10-lb ABC Fire Extinguisher
- 🔥 15-lb or larger Class D Fire Extinguisher
- 🚪 Removable Access to Basement
- 🚚 Emergency Equipment Cabinet
- 👉 Collection Sumps

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Figure 6-4. 305-B Storage Unit Building Plan and Location of Emergency Equipment

1 into the concrete lined storage vault. Forklifts may also be used to unload heavy waste items. Small
2 waste items can be unloaded by hand. Each small waste item is removed from the secondary
3 containment unit in which it was transported (i.e., plastic storage tub) and placed in the appropriate
4 storage location
5

6 6.5 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [F-4]

7
8 The following sections describe preventive procedures, structures, and equipment.
9

10 6.5.1 Unloading Operations [F-4a]

11
12 Procedures have been developed at 305-B to prevent hazards and minimize the potential for breakage,
13 punctures, or the accidental opening of containers during waste unloading. All waste unloading is
14 performed inside the 305-B Storage Unit. The large bay door is opened and the appropriate transporting
15 vehicle (usually a pickup truck) is driven inside. As described in Section 4.1.1.3, the unloading area has
16 secondary containment. By unloading all wastes inside the fully-contained facility, spills during unloading
17 operations will be contained. Procedures for unloading and transferring wastes to storage areas have been
18 designed to minimize hazards. All wastes are inspected prior to shipment to 305-B to ensure that they are
19 in appropriate containers and that the containers are in good condition. Inspection of containers prior to
20 acceptance at 305-B minimizes the potential for spills during unloading operations. The potential for spills
21 during waste handling is minimized through the use of appropriate container handling equipment. Large
22 waste items such as drums of nonflammable RMW are lowered into the basement of the facility for storage
23 using an overhead crane or winch assembly. The containers are immediately transported, via a hand lift,
24 into the concrete lined storage vault. Forklifts may also be used to unload heavy waste items. Small waste
25 items can be unloaded by hand. Each small waste item is removed from the secondary containment unit in
26 which it was transported (i.e., plastic storage tub) and placed in the appropriate storage location.

Table 6-2. Material and Equipment for Spill Containment and Cleanup

Materials/Equipment			Notes
Diatomaceous Earth	30-gallon drum	To absorb small spills of oils, solvents, aqueous materials. Not used for acids or caustics unless first neutralized.	Stored in high bay of 305-B.
Vermiculite	55-gallon drum	To absorb small spills of oils, solvents, aqueous materials. Not used for acids or caustics unless first neutralized.	Stored in high bay of 305-B.
Absorbent Pillows	Three cartons, each containing 12 pillows	To be used for diking or damming and absorption of spilled materials	Each pillow can absorb slightly more than 1 L of liquid.
Acid- and base-specific and solvent absorbents or neutralizers	50-lb box of each in 305-B, and a 32-oz bottle of each in transport vehicle.	Neutralization of known chemical spills.	J.T. Baker™ brand or equivalent.
Citric Acid	30-gallon drum	Neutralization of alkaline spills	Stored in high bay of 305-B.
Sodium Bicarbonate	30-gallon drum	Neutralization of acid spills.	Stored in high bay of 305-B.

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6.5.2 Run-Off [F-4b]

The 305-B Storage Unit was designed to eliminate the likelihood of off-site migration via run-off. Because the facility is completely enclosed (i.e., complete roof and no open walls), run-off of precipitation is not a factor. In addition, floors are bermed and sloped toward sumps in the loading/unloading area and each storage cell is similarly bermed, sloped, and individually sumped to eliminate the possibility of spills interacting or migrating offsite. The main high bay area and each storage cell are fully contained by at least a 6-in. high dike or ramp. Each door from the waste handling areas to the outside has a collection trench to intercept any potential run-off. The containment system for 305-B is described in more detail in Section 4.1.1.3.

6.5.3 Water Supplies [F-4c]

305-B is designed and operated to safely contain wastes and prevent any contamination of water supplies. The containment system described in Section 4.1.1.3 prevents infiltration of wastes which could contaminate groundwater and prevents run-off of wastes which could contaminate surface water. The nearest water supply is the 300 Area water intake, which is located on the Columbia River 0.5 mile from 305-B.

6.5.4 Equipment and Power Failure [F-4d]

1 The 305-B Storage Unit does not have any systems which would cause release of dangerous waste or
2 RMW during a power failure or equipment failure. Interruption of power to any of the systems utilizing
3 electrical power (HVAC system, crane, forklift) merely causes the equipment to stop operating. The unit
4 has an emergency lighting system which operates automatically during power failure incidents.

5
6 For actions to be taken in the event of power failure to unit systems or equipment, see the unit Contingency
7 Plan (Section 7).

8 9 **6.5.5 Personnel Protection Equipment [F-4e]**

10 Protective clothing and equipment are provided to employees during normal and emergency operations.
11 During routine operations, the maximum number of employees working in the 305-B unit is less than ten.
12 For dry chemical handling activities, such as labpacking, the minimum protection requirement is eye
13 protection (safety glasses with side shields or chemical goggles), lab coat, and chemical resistant gloves
14 (plastic or other construction as appropriate). Protection levels for other operations, such as bulking, and
15 emergency situations are determined in consultation with a PNNL industrial hygienist, and staffing levels
16 are revised according to the availability of proper protective equipment as shown below. Protective
17 clothing and equipment available in the 305-B Storage Unit includes:

- 18
19
20
 - 6 sets of chemically resistant suits, aprons, boots, and gloves
 - 20 pairs of extra protective eyeglasses
 - 3 SCBA
 - 5 pairs of chemical goggles
 - 4 face shields
 - 4 full-face respirators with appropriate cartridges.

21
22
23
24
25
26
27 This protective equipment is stored in cabinets located outside of the operating area east entrance and is
28 well stocked at all times. The location of the storage cabinets is given in Figure 6-4. This equipment is
29 periodically replaced as it is used. The above inventory reflects the quantities of each type of PPE that are
30 typically present at 305-B. Minimum quantities required to be present are given in the weekly inspection
31 checklist, Figure 6-2.

32 33 **6.6 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, OR** 34 **INCOMPATIBLE WASTES [F-5]**

35
36 The following sections describe prevention of reaction of ignitable, reactive, and incompatible waste.

37 38 **6.6.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste [F-5a]**

39
40 305-B may be used to store a variety of ignitable wastes. Precautions to prevent ignition of ignitable
41 wastes involve separation of wastes from sources of ignition and use of procedures which minimize the
42 potential for accidental ignition. There are no routine sources of ignition or open flame in 305-B. Work
43 with ignition or heat sources, if required, is limited and controlled by PNNL management and is performed
44 in compliance with internal PNNL health and safety procedures for elimination of ignition sources. These
45 internal procedures:

- 46
47
 - Prohibit use of open flame equipment when working with flammable liquids
 - Prohibit smoking around flammable liquids [No smoking is allowed at 305-B]

- 1 • Require electrical equipment used in flammable or explosive atmospheres to comply with the National
- 2 Electrical Code, NFPA 70
- 3 • Require use of equipment with automatic, adjustable temperature controls and high-temperature limit
- 4 switches to prevent overheating
- 5 • Prohibit placement of flammable liquids on hot surfaces
- 6 • Require all static electricity sources to be grounded in areas where ignitable vapors may be present
- 7 • Require bonding of conductive containers when transferring flammable liquids.
- 8 • Require use of non-sparking tools in flammable waste storage areas
- 9

10 All maintenance or modifications that require work with ignition sources must receive prior approval by a
11 PNNL Safety Engineer. This approval is documented in the Operating Record. Smoking is not allowed in
12 305-B at any time and the interior and exterior of the facility are clearly posted with "No Smoking" signs.
13 Waste storage areas are not heated by any radiant heat source. All tools used to open ignitable waste
14 containers are constructed of nonsparking materials.

15
16 Ignitable waste storage areas are inspected annually by a PNNL fire safety engineer familiar with the
17 Uniform Fire Code. This inspection is documented in the Operating Record. There are also storage
18 restrictions at 305-B for combustible wastes as part of fire safety requirements. The storage restrictions
19 defined in the Uniform Building Code for Class B Occupancy apply to 305-B (International Conference of
20 Building Officials 1988). These restrictions are given in Table 4-1. The weekly inspection for 305-B
21 includes checking to see if the inventory of combustibles is below these limits. These inspections are
22 documented in the Operating Record.

23 24 **6.6.2 General Precautions for Handling Ignitable or Reactive Waste and Mixing of** 25 **Incompatible Waste [F-5b]**

26
27 As described in Section 6.5.1, ignitable wastes are managed in a manner which protects the wastes from
28 sources of ignition or open flame. Ignitable waste containers are maintained in good condition and
29 inspected weekly to minimize the potential for releases which could result in fire. Containers of ignitable
30 waste are protected from high temperature to prevent the potential for pressurization and buildup of
31 ignitable vapors. Containers of ignitable waste are stored in flammable material storage cabinets within
32 waste storage cells, as described in Section 4.1.1.6. Limitations on sizes of containers and amounts of
33 storage in cabinets are found in Section 4.3.1.

34
35 Because of the wide variety of wastes which may be accepted at 305-B, the potential exists for storage of
36 incompatible wastes. Mixing of incompatible wastes is prevented through waste segregation and storage
37 procedures. Chemical wastes stored in 305-B are separated by compatibility and hazard class and stored in
38 separate storage cells. Separate storage shelves and cabinets are used within the storage cells, as described
39 in Section 4.1.1.6, to provide further waste segregation. Prior to accepting unfamiliar wastes from
40 generators, waste management organization staff determine the Reactivity Group Number as per *A Method*
41 *for Determining the Compatibility of Hazardous Wastes* (EPA 1980) for each waste so that wastes may
42 be stored with compatible materials. The following general guidance is used to segregate and separate
43 chemicals:

- 44
- 45 • Store acids on a low storage shelf or in acid storage cabinets.
- 46 • Separate acids from bases and alkaline metals such as potassium or sodium
- 47 • Separate oxidizing acids from organic acids and flammable or combustible materials
- 48 • Store bases away from acids and store solutions of inorganic hydroxides in polyethylene containers

- 1 • Store oxidizers away from flammable or combustible materials and reducing agents such as zinc,
2 alkaline metals, and formic acid
- 3 • Store peroxide-forming chemicals in airtight containers in a dark, cool, and dry place (inside of
4 cabinets)
- 5 • Store flammable materials in approved containers or cabinets
- 6 • Separate flammable materials from oxidizing acids and oxidizers and keep them away from sources of
7 ignition
- 8 • Clearly mark cabinets to identify the hazards associated with their contents.
- 9 • The potential for waste ignition or reaction at 305-B is also minimized through storage restrictions on
10 hazardous material quantities. The storage restrictions defined in the Uniform Building Code for
11 Class B Occupancy apply to 305-B (International Conference of Building Officials 1988). These
12 restrictions are given in Table 4-1. The weekly inspection of 305-B includes checking to see if waste
13 inventories are below these limits. These inspections are documented in the Operating Record.
- 14

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8.0 CONTENTS

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8.0 PERSONNEL TRAINING [H]

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3
4 The information contained in this chapter outlines the Personnel Training Program for PNNL personnel
5 associated with the operation of the 305-B Storage Unit. The program is instituted in accordance with
6 WAC 173-303-330. A copy of this training plan is kept at 305-B.
7

8.1 OUTLINE OF TRAINING PROGRAM [H-1]

8
9
10 The training program for personnel at 305-B is instituted to meet the requirements of WAC 173-303-330.
11 PNNL combines classroom instruction and on-the-job training to teach all personnel to perform their duties
12 (specific to each job classification) in a way that ensures the facility's compliance with WAC 173-303.
13 teaches personnel dangerous waste management procedures (including contingency plan implementation)
14 relevant to the positions in which they are employed, and ensures that personnel are able to respond
15 effectively to emergencies. The training requirements for 305-B operating personnel are depicted
16 graphically in Figure 8.1. PNNL personnel not assigned to the 305-B facility may, on an occasional basis,
17 assist with specific operations at this TSD unit. Proper training for the job will be given to the personnel in
18 these situations before the beginning of any unsupervised work. This training shall be documented by the
19 training coordinator and kept on file for future reference.
20

8.1.1 Job Titles and Job Descriptions [H-1a]

21
22
23 The Unit Operating Supervisor is responsible for the daily operation of 305-B in compliance with
24 regulations administered under RCRA, the State of Washington Dangerous Waste Regulations (WAC 173-
25 303), and PNNL waste operating procedures.
26

27 The Unit Operating Supervisor is ultimately responsible for assessing 305-B compliance, conducting
28 inspections and overseeing any corrective actions which may result from them, ensuring waste handling and
29 storing procedures are followed, and serving as BED to implement proper emergency procedures when nec-
30 essary. In addition to the responsibilities mentioned above, it is the role of the Unit Operating Supervisor to
31 direct new employees so that successful completion of introductory and on-the-job training will be accomp-
32 lished in the first six months of employment.
33

34 The RMW Waste Management Engineer is responsible for the mixed waste operation of 305-B. This staff
35 member must review all mixed waste disposal requests and ensure their accuracy and reliability. In
36 addition, the RMW Waste Management Engineer will dispatch a pickup team and oversee mixed waste
37 pickup and transportation to the 305-B Storage Unit. When adequate volumes of mixed waste have
38 accumulated to warrant disposal of the waste, the RMW Waste Management Engineer is responsible for
39 readying the waste for shipment. These duties include packaging, labeling, manifesting, and recordkeeping.
40

41 The Waste Management Engineers are responsible for evaluating unit compliance, managing the PNNL
42 PCB waste stream, managing the waste designation data base, and overseeing waste designations. Waste
43 Management Engineers also perform waste management operations such as pickup and lab packing of
44 small containers. They also oversee offsite shipping of wastes and ensure compliance with DOT
45 regulations.
46

STAFF POSITION¹

TRAINING COURSE NAME

	OS	E	TS	C
Building Emergency/Contingency Plan	A ²	A	A	A
Handheld Radio Operator	I	I	I	I
General Radiation Safety	B	B	B	N
Radiation Safety for Females ³	I	I	I	I
Respiratory Protection	A	A	A	N
TSD Operator (24 hour w/8-hour refresher)	I/A	I/A	I/A	I/A
SCBA Training	A	A	A	N
Fire Extinguisher Use	A	A	A	A
Worker Right-To-Know	I	I	I	I
Vehicle Accident Prevention	T	T	T	T
Crane, Hoist and Rigging Safety	N	N	T	N
Safe Forklift Operation	N	N	T	N
Hazardous Waste Shipment Certification	T	T	T	N
Radioactive Material Shipping Representative	B	B ⁴	B ⁴	N
305-B Safe Operating Procedures	A	A	A	A
Advanced Hazardous Waste Training	A	A	A	N
Hazardous Waste Operations Supervisor	I	N	N	N
Waste Designation Training	I	I	I ⁵	N

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¹Staff Position Key: OS Unit Operations Supervisor
 E RMW and Waste Management Engineers
 TS Waste Management Technicians and Technical Specialists
 C Waste Management Clerks

²Requirements Key: A Annually; B Biennially; T Triennially; I Initially upon assignment to the unit;
 N Not Required.

³Required for female staff only. This information is given in the various radiation safety classes and is not a separate stand alone class.

⁴Required for RMW Engineers and any TS that has the assigned duty of signing for onsite radioactive shipments.

⁵Required for any TS that has the assigned duty of making waste designations.

Figure 8-1. 305-B Training Requirements

1 Waste Management Technical Specialists and Technicians are responsible for the physical operations at
2 305-B. The persons in these positions are responsible for packaging, labeling, and preparing wastes for
3 shipment to disposal facilities and will assist in any sampling activities and/or waste pickups. One or more
4 of these staff members will also serve as alternate BEDs and zone wardens for 305-B in the event of an off-
5 normal event or an emergency. As zone warden, the primary responsibility is to account for the safe
6 evacuation of plant personnel and report this to the BED. They are also responsible for performing minor
7 maintenance and upkeep of the 305-B building.

8
9 Waste Management Clerks are responsible for recordkeeping and database maintenance at the 305-B
10 Storage Unit. It is the role of the Waste Management Clerk to enter data and update the databases as
11 required. Verification of waste inventories is also the clerk's responsibility; other roles include reporting,
12 preparation of labels, manifests and associated paperwork, and unit upkeep.

13
14 The operations supervisor and all engineer positions require, at a minimum, a college science or engineering
15 degree. The technical specialist positions require, at a minimum, a high school diploma or equivalent, with
16 one year of college science/chemistry or an equivalent year of job specific experience. The technician
17 positions require, at a minimum, a high school diploma or equivalent, with college level science/chemistry
18 or equivalent job experience. The clerk position requires, at a minimum, a high school diploma or
19 equivalent. For all positions, requisite skills, and qualifications required are: (1) previous experience
20 performing similar tasks, as detailed in the job description, and/or (2) specific specialized course work
21 intended to train and qualify the individual for tasks similar or equal to those detailed in the specific job
22 description.

23
24 A current list of the personnel filling the above-mentioned positions can be found in Appendix 8A. The
25 personnel list will be updated as the names of responsible personnel change.

26 27 **8.1.2 Training Content, Frequency, and Techniques [H-1b]**

28
29 A number of training courses are required of 305-B personnel on periodic basis. A brief description of
30 required courses is given in this chapter (Figure 8-1). Equivalent training may be taken in place of the
31 training identified in Figure 8-1 with approval from the 305-B Unit operating Supervisor or the
32 Environmental Management Services Department Manager. Documentation of the training substitution
33 will be placed in the operating record (within 7 days after the training was received), accompanied by a
34 narrative explanation, and the date of the training. The documentation shall be made available to Ecology
35 or EPA during inspections for assessment. If Ecology or EPA determines that the training substitution was
36 not equivalent to the original, the original training will be taken or an acceptable substitution will be found.

37
38 New employees at 305-B must successfully complete the training program within 6 months after their
39 employment at or assignment to the unit. At a minimum, the training familiarizes personnel with
40 emergency equipment and procedures, unit operations, and Occupational Safety and Health Administration
41 (OSHA) regulations.

42 43 **8.1.3 Training Coordinator [H-1c]**

44
45 Training at PNNL is provided by a number of specialists in their fields, including a Training Coordinator
46 from the waste management organization who is responsible for coordinating dangerous waste training.
47 The position of Training Coordinator is filled by an engineer or specialist having "hands-on" experience
48 with handling chemical wastes. PNNL also has a unit which tracks and monitors training for PNNL

1 employees. This coordination includes a system for "flagging" affected employees when additional training
2 and/or follow-up is warranted.

3 4 **8.1.4 Relevance of Training to Job Position [H-1d]**

5
6 Titles and job descriptions of personnel involved in operating 305-B are set forth in Section 8.1.1. All
7 training is relevant to the positions in which the unit personnel are employed; for normal operating
8 conditions the training includes:

- 9
10 • Advanced Hazardous Waste Management — Annual: This training covers internal PNNL
11 hazardous and mixed waste procedures and issues, and regulatory requirements applicable to
12 PNNL operations for 90 day areas and TSD operations.
- 13
14 • Worker Right-to-Know — Initial: This course familiarizes the employee with their rights under the
15 right-to-know statutes. Information on material safety data sheets and their availability and on
16 standard industrial hygiene terms is also covered.
- 17
18 • Vehicle Accident Prevention — Initial (2 hours) and triennial refresher (30 minutes): This course is
19 intended to familiarize employees with safe driving rules and with the requirements for operation of
20 government-owned and PNNL-owned vehicles.
- 21
22 • General Radiation Safety — Biennial: This course gives staff members information on the basic
23 characteristics of radiation, natural and manmade sources, biological effects and risks of radiation
24 exposure, ALARA, contamination control, and warnings and alarms. This course requirement can
25 be met by taking any of the radiation safety courses such as Radiation Worker II, Radiation
26 Worker I or General Employee Radiation Training.
- 27
28 • NCRP Report 39 — Initial: For female radiation workers only. The briefing informs the female
29 radiation worker of the potential hazards of radiation to women of reproductive age. This
30 information is provided in the various radiation safety classes including Radiation Worker I/II and
31 General Employee Radiation Training and is not a separate stand alone class.
- 32
33 • 305-B Safe Operating Procedures — Annual or whenever procedure content is revised, whichever
34 is more frequent: This requirement is fulfilled by reading and studying the written procedures.
- 35
36 • Hazardous Waste Shipment Certification — Triennial: This course provides training to those who
37 supervise and prepare hazardous waste shipments and who certify that these shipments have been
38 properly prepared in compliance with applicable laws and regulations. This training ensures that
39 these persons understand their responsibilities and liabilities in the shipment of hazardous waste
40 and that they have a basic understanding of which regulations are applicable and how they must
41 achieve compliance.
- 42
43 • Radioactive Material Shipping Representative — Biennial: This course provides training in the
44 onsite radioactive material shipping procedures and requirements. Successful completion of this
45 course is required to receive authorization to sign for onsite radioactive shipments (onsite RSRs).
46 The course content of this training also provides the training information provided in the
47 Hazardous Waste Shipment Certification course. Therefore, successful completion of this course
48 meets the training requirements of the Hazardous Waste Shipment Course.

- 1
- 2 • Crane Hoist and Rigging Safety — Triennial: This course provides instruction in the safe operation
- 3 of cranes and in proper rigging techniques.
- 4
- 5 • Safe Forklift Operation — Triennial: This course provides instruction in the safe operation of
- 6 forklifts.
- 7
- 8 • Hazardous Waste Operations Supervisor Training — This course gives hazardous waste operation
- 9 instruction from a managers standpoint.
- 10
- 11 • Waste Designation Training — This course gives instruction on proper designation of waste in
- 12 accordance with WAC 173-303.
- 13

14 Training is tracked and documented by PNNL and by the unit training coordinator. Training records and
15 class documentation are held on file in the waste management operations office in 305-B as part of the
16 Operating Record. The waste organization manager is responsible for ensuring the necessary training is
17 provided to the 305-B staff.

18 **8.1.5 Training for Emergency Response [H-1e]**

19
20
21 Training is adequate to ensure that personnel are able to respond effectively to emergencies and are familiar
22 with emergency procedures, emergency equipment, and emergency systems. Emergency response training
23 includes, but is not limited to:

- 24 • Using, inspecting, repairing, and replacing unit emergency and monitoring equipment
- 25
- 26 • Activating and responding to communications and alarm systems
- 27
- 28 • Response to fires and explosions
- 29
- 30 • Shutdown of operations.
- 31
- 32

33 Procedures for Using, Inspecting, Repairing, and Replacing Unit Emergency and Monitoring Equipment.

34 Personnel operating 305-B are adequately trained to ensure prompt and effective response to emergency
35 situations that may arise during operation of the unit. The following required safety courses outline
36 procedures for using, inspecting, repairing, and replacing unit emergency and monitoring equipment.

- 37
- 38 • Building Emergency Preparedness (contingency plan): conducted annually or when changes are
- 39 made, whichever is more frequent, to familiarize the employee with the written contingency plan
- 40 and specific responsibilities of emergency procedures.
- 41
- 42 • Hand-Held Radio Operator: conducted initially, this briefing makes the employee familiar with the
- 43 operation of the hand-held and truck- mounted radios for both everyday and emergency operation.
- 44 This briefing also includes a discussion on radio etiquette.
- 45
- 46 • Respiratory Protection (SAF-RP-001): conducted annually, the course familiarizes the operating
- 47 staff with the proper use of air purifying respirators and their limitations. It also makes the staff
- 48 aware of potential respiratory hazards, how to recognize them, and what actions to take.

- 1
- 2 • Treatment, Storage, or Disposal (TSD) Facility Operator Safety (SAF-WM-007): consists of
- 3 24-hour initial training and an 8-hour annual refresher. This course provides extensive instruction
- 4 on the use of field survey instruments such as combustible gas indicators, oxygen meters, detector
- 5 tube systems, photo and flame ionization instruments, organic vapor analyzer (OVA) meters, and
- 6 atmospheric sampling instruments. Other topics covered include heat-induced illnesses, OSHA's
- 7 Emergency Response Standards, lists of personal protective equipment, hazardous materials
- 8 classification systems, confined space work practices, liquid storage tanks, contamination control,
- 9 toxicology, medical monitoring, and many others.
- 10
- 11 • SCBA: conducted annually, this course instructs the employee of the advantages and limitations of
- 12 the SCBA equipment. Key items covered in The course content of this training also provides the
- 13 training information provided in the Hazardous Waste Shipment Certification course. Therefore,
- 14 successful completion of this course meets the training requirements of the Hazardous Waste
- 15 Shipment Course. clude equipment inspection, modes of operation, donning procedures, recognition
- 16 and response to malfunctions, maintenance and repair, and practical demonstrations.
- 17
- 18 • Fire Extinguisher Use: conducted annually, this 30-minute course consists of a videocassette,
- 19 lecture, and reading materials. Its intent is to familiarize all personnel with proper discharging,
- 20 inspecting, and maintenance procedures for fire extinguishers to be used during an emergency.
- 21

22 Key Parameters for Automatic Waste Feed Cut-Off Systems. This section is not applicable because there

23 are no automatic waste feed systems at 305-B.

24

25 Communications or Alarm Systems. Personnel operating 305-B are properly trained in both handling

26 communication devices and alarm systems and recognizing alarm sirens as to their meaning. A Hand-Held

27 Radio Operator training course (outlined above) is required to be a part of all 305-B employee training. In

28 addition, the Contingency Plan, also required reading for all the operating staff at 305-B, details

29 communication and alarm systems, as well as proper response to each system during an emergency.

30

31 Response to Fires. Personnel at 305-B are adequately trained to respond to fires at the unit. All staff is

32 trained annually in implementation of the contingency plan which outlines each person's immediate and

33 sequential actions in case of a fire emergency. In addition, all staff receives training for proper handling,

34 maintenance, and discharge of on-site fire extinguishers, and proper activation of alarm and fire

35 suppressant systems.

36

37 Response to Groundwater Contamination Incidents. This section is not applicable because groundwater

38 monitoring is not required at 305-B.

39

40 Shutdown of Operations. Procedures for shutdown of operations of 305-B because of an emergency

41 situation are outlined in the contingency plan. As mentioned previously, all staff is trained annually in

42 implementation of the contingency plan. The person responsible for the decision to shut down is the BED

43 or alternate.

44

45 **8.2 IMPLEMENTATION OF TRAINING PROGRAM [H-2]**

46

47 The training program is currently being implemented. All employees will receive training within six

48 months of their date of hire or their transfer to a new position at the unit. Personnel will not work in

1 unsupervised positions until they successfully complete the training course. Records of each individual's
2 formal training are maintained at the 305-B unit; backup files are kept at the office of the Laboratory
3 Training Coordinator. Training records of current employees will be kept until closure of the unit.
4 Records of former employees are kept for at least three years from the date the employee last worked at the
5 unit.

6
7 The training outline is on file in the Laboratory Training Coordination office and at 305-B and is available
8 for review by all waste handling and management personnel, emergency response personnel, and all
9 regulatory agencies. Provisions are made for updating and reviewing courses, as necessary, to ensure
10 compliance with WAC 173-303.

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Hanford Facility RCRA Permit Modification Notification Forms

For

Part III, Chapter 6 and Attachment 36

325 Hazardous Waste Treatment Units

Page 1 of 11

Index

- Page 2 of 11: Section 2.0, Page 2-1, lines 1-13
- Page 3 of 11: Section 2.2, Page 2-5, lines 1-18
- Page 4 of 11: Appendix 3A, Section 4.2, Page 3A 4-6, lines 16-27
- Page 5 of 11: Appendix 3A, Section 4.5.2, Page 3A 4-8, lines 4-9
- Page 6 of 11: Appendix 3A, Section 4.5.4, Page 3A 4-8, lines 27-45
- Page 7 of 11: Appendix 3A, Section 4.5.4, Page 3A 4-9, lines 6-24
- Page 8 of 11: Appendix 3A, Section 4.5.4, Page 3A 4-9, lines 26-27
- Page 9 of 11: Permit Condition III.6.B.d, Page 49 of 76, lines 1-4
- Page 10 of 11: Permit Condition III.6.B.l., Page 49 of 76, lines 32-37
- Page 11 of 11: Permit Condition III.6.B.o., Page 50 of 76, lines 1-6

Hanford Facility RCRA Permit Modification Notification Form

Unit:
325 Hazardous Waste Treatment Units

Permit Part & Chapter:
Part III, Chapter 6 and Attachment 36
[Section 2.0]

Description of Modification:

Section 2.0, Page 2-1, lines 1-13: Insert Permit Condition III.6.B.q.:

2.0 FACILITY DESCRIPTION AND GENERAL PROVISIONS [B AND E]

The 325 Building includes the following: (1) a central portion (completed in 1953) that consists of three floors (basement, ground, and second) containing general purpose laboratories, provided with special ventilation and work enclosures, designed for radiochemical work; (2) a south (front) wing containing office space, locker rooms, and a lunch room; and (3) east and west wings containing shielded enclosures with remote manipulators.

The 325 HWTUs consist of three units, all within the 325 Building, located in the 300 Area on the Hanford Facility. The Shielded Analytical Laboratory (SAL) is located in Rooms 32, 200, 201, 202, and 203. The HWTU is located in Rooms 520, and 528. The Collection/Loadout Station Tank will be located in the southeast corner of the basement of the 325 building.

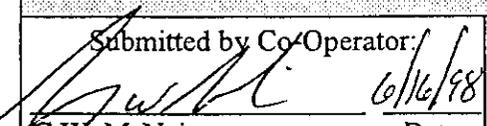
Modification Class: ^{2 3}	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

1. Administrative and informational changes.

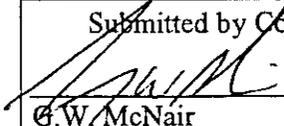
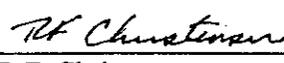
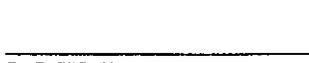
Submitted by Co-Operator:  G.W. McNair	Date 6/16/98	Reviewed by RL Program Office:  R.F. Christensen	Date 7/7/98	Reviewed by Ecology: J. J. Wallace	Date
---	-----------------	---	----------------	---	--------------

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit: 325 Hazardous Waste Treatment Units	Permit Part & Chapter: Part III, Chapter 6 and Attachment 36 [Section 2.2]			
<u>Description of Modification:</u>				
Section 2.2, Page 2-5, lines 1-18: Insert Permit Condition III.6.B.s.:				
2.2 TOPOGRAPHIC MAP [B-2]				
A topographic map, H-13-000197, showing a distance of at least 305 meters around the 325 HWTUs, is provided in Appendix 2A. The contour interval (0.5 meter) shows the general pattern of surface water flow in the vicinity of the 325 HWTUs. The map contains the following information:				
<ul style="list-style-type: none"> ▪ Map scale ▪ Date ▪ Prevailing wind speed and direction ▪ A north arrow ▪ Surrounding land use ▪ Access road location Access control ▪ 100 500-year flood plain ▪ Injection and withdrawal wells ▪ Sewer systems ▪ Loading/unloading areas ▪ Fire control ▪ Buildings 				
Modification Class: ^{2,3}	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u>				
A. General Permit Provisions				
1. Administrative and informational changes				
Submitted by Co-Operator:	Reviewed by RL Program Office:		Reviewed by Ecology:	
 G.W. McNair	 R.F. Christensen	 J. J. Wallace	Date	Date
6/16/98	7/7/98		Date	Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
325 Hazardous Waste Treatment Units

Permit Part & Chapter:
Part III, Chapter 6 and Attachment 36
[Appendix 3A]

Description of Modification:

Appendix 3A, Section 4.2, Page 3A 4-6, lines 16-27:

4.2 SAMPLE RECEIPT AND STORAGE

Samples are received at a qualified contracted laboratory or laboratory receiving facility by a sample custodian. This individual carefully reviews received samples and documentation for compliance with sampling and documentation requirements, such as type and condition of container, sample preservation, collection date, and chain-of-custody forms. The sample custodian signs and dates the chain-of-custody form after verifying that all samples submitted are listed and that the required information is listed on the form. The sample custodian places an identification number on each sample and returns the samples to a refrigerator, if required, designated for storage of samples requiring analysis. The sample custodian stores and secures the samples appropriately (e.g., in a locked refrigerator). Based on the type of sample and analysis requested, special procedures for sample handling, storage, and distribution could be specified.

Modification Class:²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

I. Administrative and informational

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

G.W. McNair

Date

R.F. Christensen

Date

J. J. Wallace

Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

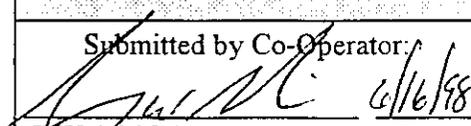
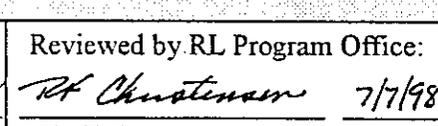
Hanford Facility RCRA Permit Modification Notification Form				
Unit: 325 Hazardous Waste Treatment Units	Permit Part & Chapter: Part III, Chapter 6 and Attachment 36 [Appendix 3A]			
<u>Description of Modification:</u>				
Appendix 3A, Section 4.5.2, Page 3A 4-8, lines 4-9:				
4.5.2 Sampling and Analytical Procedures				
The LDR characterization and analysis is may be performed as part of the waste-characterization and analysis process. If waste is sampled and analyzed for LDR characterization, then only EPA or equivalent methods are used. Wastes are analyzed using the TCLP in accordance with Appendix II of 40 CFR 261, as amended, to provide sufficient information for proper management and for decisions regarding LDRs pursuant to 40 CFR 268. Approved methods are listed in Sections 5.0 and 6.0, respectively.				
Modification Class: ²³ please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u>				
A. General Permit Provisions				
1. Administrative and informational				
Submitted by Co-Operator <i>G.W. McNair</i> G.W. McNair	Reviewed by RL Program Office: <i>R.F. Christensen</i> R.F. Christensen	Reviewed by Ecology: <i>J. J. Wallace</i> J. J. Wallace		
6/16/98 Date	7/7/98 Date	Date		

¹Class I modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit: 325 Hazardous Waste Treatment Units	Permit Part & Chapter: Part III, Chapter 6 and Attachment 36 [Appendix 3A]								
<u>Description of Modification:</u> Appendix 3A, Section 4.5.4, Page 3A 4-8, lines 27-45: Insert Permit Conditions III.6.B.t. and III.6.B.u.: 4.5.4 Documentation and Certification <p style="margin-left: 40px;">The 325 HWTUs have and will continue to receive and store LDR waste.</p> <p style="margin-left: 40px;">Because 325 HWTUs personnel determine designations and characterization, including LDR determinations, all notifications and certifications, as required by 40 CFR 268.7, are prepared by PNNL qualified staff for PNNL-generated waste. The 325 HWTUs staff collect from the generator(s) the information pursuant to 40 CFR 268.7(a) regarding LDR wastes, the appropriate treatment standards, whether the waste meets the treatment standards, and certification that the waste meets the treatment standards, if necessary, as well as any other data, e.g. documented process knowledge and waste-analyses data that support the generator's determinations. If this any of the requested information is not supplied by the generator, then the 325 HWTUs personnel complete and transmit all subsequent information regarding LDR wastes, pursuant to 40 CFR 268.7(b). The notification and certifications are submitted to onsite and offsite TSD units during the waste-shipment process. Additionally, any necessary LDR variances are prepared and submitted by PNNL qualified staff.</p> <p style="margin-left: 40px;">The 325 HWTUs staff require applicable LDR information/notifications from non-PNNL generators.</p>									
Modification Class: ^{2 3} please check one of the Classes:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Class 1</td> <td style="width: 25%;">Class¹1</td> <td style="width: 25%;">Class 2</td> <td style="width: 25%;">Class 3</td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> </table>	Class 1	Class ¹ 1	Class 2	Class 3	X			
Class 1	Class ¹ 1	Class 2	Class 3						
X									
Relevant WAC 173-303-830, Appendix I Modification: A.1.									
<u>Enter wording of the modification from WAC 173-303-830. Appendix I citation:</u> A. General Permit Provisions I. Administrative and informational									
Submitted by Co-Operator:  G.W. McNair	Reviewed by RL Program Office:  R.F. Christensen	Reviewed by Ecology: J. J. Wallace							
6/16/98 Date	7/7/98 Date	 Date							

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form				
Unit: 325 Hazardous Waste Treatment Units	Permit Part & Chapter: Part III, Chapter 6 and Attachment 36 [Appendix 3A]			
<u>Description of Modification:</u>				
Appendix 3A, Section 4.5.4, Page 3A 4-9, lines 6-24: Insert Permit Condition III.6.B.v. :				
<ul style="list-style-type: none"> • EPA hazardous-waste number • the corresponding treatment standards and all applicable prohibitions set forth in WAC 173-303, 40 CFR 268.32, or RCRA Section 3004(d) • the manifest number associated with the waste • all available waste-characterization data • <u>identification of underlying hazardous constituents</u> 				
<p>In instances where 325 HWTUs determines that a restricted waste is being managed that can be land-disposed without further treatment, 325 HWTUs staff submits a written notice and certification to the onsite or offsite TSD where the waste is being shipped, stating that the waste meets applicable treatment standards set forth in WAC 173-303-140 (40 CFR 268, Subpart D), and the applicable prohibition levels set forth in 40 CFR 268.32 or RCRA Section 3004(d). The notice includes the following information:</p> <ul style="list-style-type: none"> • EPA hazardous-waste number • corresponding treatment standards and applicable prohibitions • waste-tracking number associated with the waste • all available waste-characterization data • <u>identification of underlying hazardous constituents</u> 				
Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830. Appendix I citation:</u>				
A. General Permit Provisions				
1. Administrative and informational				
Submitted by Co-Operator: <i>G.W. McNair</i> 6/16/98	Reviewed by RL Program Office: <i>R.F. Christensen</i> 7/7/98		Reviewed by Ecology:	
G.W. McNair Date	R.F. Christensen Date	J. J. Wallace	Date	

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
325 Hazardous Waste Treatment Units

Permit Part & Chapter:
Part III, Chapter 6 and Attachment 36
[Appendix 3A]

Description of Modification:

Appendix 3A, Section 4.5.4, Page 3A 4-9, lines 26-27: Insert Permit Condition III.6.B.w.:

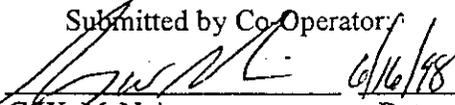
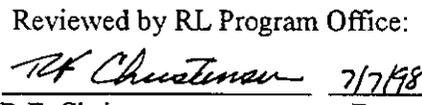
The certification accompanying any of the previously described notices is signed by an authorized representative of the generator 325 HWTUs and states the following:

Modification Class: ²³	Class 1	Class ¹ 1	Class 2	Class 3
Please check one of the Classes:	X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830. Appendix I citation:

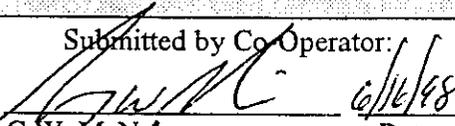
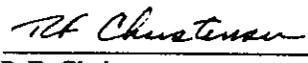
- A. General Permit Provisions
1. Administrative and informational

Submitted by Co-Operator:  G.W. McNair	Reviewed by RL Program Office:  R.F. Christensen	Reviewed by Ecology: J. J. Wallace
6/16/98 Date	7/7/98 Date	Date

¹Class 1 modifications requiring prior Agency approval.

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³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form				
Unit: 325 Hazardous Waste Treatment Units	Permit Part & Chapter: Part III, Chapter 6 Permit Condition III.6.B.d.			
<u>Description of Modification:</u> Permit Condition III.6.B.d, Page 49 of 76, lines 1-4: The acceptance of all dangerous waste received at the 325 TSD Units will be dependent upon their packaging. The practice of hand-carrying single-walled Liquid waste containers accepted from other buildings to the 325 HWTUs will no longer be acceptable. Each liquid waste container shall have secondary containment with absorbent materials packed around the contents.				
Modification Class: ^{2,3} please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
	X			
Relevant WAC 173-303-830, Appendix I Modification: A.1.				
<u>Enter wording of the modification from WAC 173-303-830, Appendix I citation:</u> A. General Permit Provisions 1. Administrative and informational				
Submitted by Co-Operator:  G.W. McNair Date	Reviewed by RL Program Office:  R.F. Christensen Date	Reviewed by Ecology: J. J. Wallace Date		

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
325 Hazardous Waste Treatment Units

Permit Part & Chapter:
Part III, Chapter 6
Permit Condition III.6.B.1.

Description of Modification:

Permit Condition III.6.B.1., Page 49 of 76, lines 32-37:

Shipments of waste shall not be accepted from any onsite generator without LDR information required by the 325 HWTUs waste analysis plan, if applicable, accompanying each the first shipment of any waste stream. The TSD unit staff shall obtain, from the onsite generator, the information necessary to determine the waste code, treatability group (i.e., wastewater versus non-wastewater), subcategory, and identification of underlying hazardous constituents for certain characteristic waste. A member of the TSD unit staff may sign the LDR certification as a representative of the generator.

Modification Class:^{2 3}

please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
X			

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

1. Administrative and informational

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

G.W. McNair

Date

R.F. Christensen

Date

J. J. Wallace

Date

¹Class 1 modifications requiring prior Agency approval.

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Hanford Facility RCRA Permit Modification Notification Form

Unit:
325 Hazardous Waste Treatment Units

Permit Part & Chapter:
Part III, Chapter 6
Permit Condition III.6.B.o.

Description of Modification:

Permit Condition III.6.B.o., Page 50 of 76, lines 1-6:

Within ~~30~~ 90 days of the issuance of this Permit, the Permittees shall submit the following for review and approval by the Department: for each parameter, the respective accuracy, precision, and quantitation limit (or minimum detectable activity) necessary to meet the regulatory or decision limit. These data quality requirements shall be added to the Waste Analysis Plan and become enforceable conditions of the Permit. For determining the toxicity characteristics, SW-846 Method 1311 ~~remains the required extraction method~~ should be followed wherever possible. The permittee may use the total metals test and assumption of complete extractability as described in Method 1311. A reduced sample size may also be utilized for ALARA purposes as recommended by the "Joint NRC/EPA Guidance on Testing Requirements for Mixed Radioactive and Hazardous Waste" (62 FR 62079).

Modification Class: ^{2 3}

Please check one of the Classes:

Class 1

Class¹1

Class 2

Class 3

X

Relevant WAC 173-303-830, Appendix I Modification: A.1.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

A. General Permit Provisions

1. Administrative and informational

Submitted by Co-Operator:

G.W. McNair

6/17/98
Date

Reviewed by RL Program Office:

R.F. Christensen

7/7/98
Date

Reviewed by Ecology:

J. J. Wallace

Date

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Hanford Facility RCRA Permit
Part III, Chapter 6 and Attachment 36
325 Hazardous Waste Treatment Units

Page Changes

Chapter 2, Pages 2-1, 2-2, 2-5, and 2-6

Appendix 3A, Pages APP 3A 4-5 through APP 3A 4-10

2.0 FACILITY DESCRIPTION AND GENERAL PROVISIONS [B AND E]

The 325 Building includes the following: (1) a central portion (completed in 1953) that consists of three floors (basement, ground, and second) containing general purpose laboratories, provided with special ventilation and work enclosures, designed for radiochemical work; (2) a south (front) wing containing office space, locker rooms, and a lunch room; and (3) east and west wings containing shielded enclosures with remote manipulators.

The 325 HWTUs consist of three units, all within the 325 Building, located in the 300 Area on the Hanford Facility. The Shielded Analytical Laboratory (SAL) is located in Rooms 32, 200, 201, 202, and 203. The HWTU is located in Rooms 520, and 528. The Collection/Loadout Station Tank will be located in the southeast corner of the basement of the 325 building.

The 325 HWTUs receive, store, and treat dangerous waste generated by Hanford Facility Programs (primarily from research activities in the 325 Building and other Pacific Northwest National Laboratory [PNNL] facilities). Storage in containers and bench-scale treatment of dangerous waste occur in the HWTU. At the SAL, dangerous waste is stored in a tank and is also stored in containers. Bench-scale treatment of dangerous waste also occurs at the SAL. This dangerous waste, along with contributors from the HWTU and Room 40, is currently discharged to the 340 Building via the Radioactive Liquid Waste System (RLWS). Due to the scheduled deactivation of the 340 Building, a modification to the existing 325 RLWS system is required. As part of this modification, dangerous waste will be collected, stored, and possibly treated in a tank before being transported to the Double-Shell Tank (DST) System. This modified system will be referred to as the RLWS load out tank system. As described in further detail in Chapter 4.0, containers are managed in accordance with WAC 173-303-630, and the tank systems are managed and operated in accordance with WAC 173-303-640.

This chapter provides a general overview of the 325 HWTUs, including:

- General description
- Topography
- Seismic consideration
- Traffic information.

A more detailed discussion of the waste types treated and stored and the identification of processes and equipment are provided in Chapters 3.0 and 4.0, respectively. It is the U.S. Department of Energy-Richland Operations Office (DOE-RL/PNNL's) position that information in this application related to radionuclides regulated pursuant to the Atomic Energy Act is provided for completeness purposes only. A further discussion of this issue is given in the General Information Portion of the Hanford Facility Dangerous Waste Permit Application (DOE/RL-91-28), Section 2.1.1.3.1.

2.1 DESCRIPTION OF 325 HAZARDOUS WASTE TREATMENT UNITS [B-1]

The 325 HWTUs are contained within the 325 Building, a two-story metal and concrete building with a basement level located within the 300 Area, as shown in Figure 2.1. The 325 HWTUs consist of three units: the HWTU, the SAL, and the RLWS load out tank system, which are located in portions of the basement and ground floors (Figures F2.2 and F2.3). Other non-Treatment, Storage, and Disposal (non-TSD) activities within the 325 Building include radiochemistry research, radioanalytical service, and radiochemical process development activities.

Container and tank storage limits, and annual and daily treatment limits are listed in Chapter 1.0. The regulated waste managed in the 325 HWTUs includes dangerous waste that designates as listed waste; waste from nonspecific sources; selected waste from specific sources, characteristic waste, and state-only. Waste treatment processes could include pH adjustment, ion exchange, carbon absorption, oxidation, reduction, waste concentration by evaporation, precipitation, filtration, solvent extraction, phase separation, solids washing, catalytic destruction, and solidification and/or stabilization. These waste treatments are conducted on small quantities of diverse dangerous waste generated from research and development and analytical chemistry activities. Analytical and waste treatment procedures are discussed in Chapters 3.0 and 4.0.

2.1.1 Shielded Analytical Laboratory

The west wing of the 325 Building houses the 325B hot cell area (completed in 1963 and upgraded in the mid-1970s). The SAL consists of five rooms: basement level Room 32 and ground-floor level Rooms 200, 201, 202, and 203 (Figure 2.2). Figure 2.3 provides a drawing of Room 32 showing the location of the SAL tank.

The SAL is designed as a high-level radiation analytical chemistry area where activities are integrated with the operations of other analytical chemistry laboratories in the 325 Building. The SAL is divided into four distinct areas: the front face (Room 201), the hot cells, the back face (Rooms 200, 202, and 203), and Room 32.

1 The SAL includes eight hot cells, six of which are interconnected and situated side by side. Two hot
 2 cells located in Room 203 are used for work with highly radioactive materials, and not to manage dangerous
 3 waste. These two hot cells are regulated under the Atomic Energy Act. Work space of each interconnected cell
 4 is 1.8 meters high, 1.8 meters wide, and 1.7 meters deep. The cells are designed to handle samples with dose
 5 rates up to 2,000 rem/hour and containing up to 1,000 curies of 1 million electron volts (MeV) gamma
 6 radiation. There are 30.5 centimeters of steel in the front wall and one end wall, and 66 centimeters of
 7 magnetite concrete in the rear wall and one end wall, providing shielding equivalent to 19 centimeters of lead.
 8 The east side of each compartment, which faces into Room 201, is equipped with two manipulators and with
 9 high-density lead-glass viewing windows having the same shielding effect as the walls. These compartments
 10 are used for analytical chemistry operations. An interconnected stainless steel trough runs along the front of all
 11 the hot cells. The trough is the means by which the liquid dangerous waste is drained through stainless steel
 12 piping to the SAL tank.

13 The back face of the SAL is divided into three rooms (Rooms 200, 202, and 203). A special storage
 14 area exists in Room 202 for containers of dangerous waste that have been placed in specially designed
 15 overpack containers. The overpack containers provide shielding to reduce the radiological dose rate of the
 16 exterior of the overpack and secondary containment for the primary container.

17
 18 The SAL hazardous waste tank system is located in Room 32, which is in the basement of the
 19 325 Building. This tank system consists of the tank; associated piping, valves and pumps; and the secondary
 20 containment. The SAL tank is a double-walled tank constructed of stainless steel with a capacity of
 21 1,218 liters (Figure 2.4). Detailed tank system diagrams, including ancillary equipment, are located in
 22 Appendix 4A. The tank is placed within a cylindrical stainless steel containment structure that provides
 23 tertiary containment. The liquid dangerous waste is conveyed by gravity from the trough in the SAL hot cells
 24 to the SAL tank via stainless steel drain lines. The RLWS piping is a 316L stainless steel single pipeline inside
 25 the basement; once outside, this piping becomes a double-contained pipe line. The SAL tank utilizes a remote
 26 video monitoring system and three tank-level monitoring devices. Specific information on the monitoring
 27 devices is located in Chapter 4.0, Section 4.2.2.2.

1 **2.2 TOPOGRAPHIC MAP [B-2]**
2

3 A topographic map, H-13-000197, showing a distance of at least 305 meters around the 325 HWTUs,
4 is provided in Appendix 2A. The contour interval (0.5 meter) shows the general pattern of surface water flow
5 in the vicinity of the 325 HWTUs. The map contains the following information:
6

- 7 ■ Map scale
- 8 ■ Date
- 9 ■ Prevailing wind speed and direction
- 10 ■ A north arrow
- 11 ■ Surrounding land use
- 12 ■ Access road location Access control
- 13 ■ 500-year flood plain
- 14 ■ Injection and withdrawal wells
- 15 ■ Sewer systems
- 16 ■ Loading/unloading areas
- 17 ■ Fire control
- 18 ■ Buildings

19
20 **2.3 SEISMIC STANDARD [B-3]**
21

22 The 325 HWTUs are located in Benton County, Washington, in Zone 2B as identified in the *Uniform*
23 *Building Code* (ICBO 1991). No active faults, or evidence of a fault that has had displacement during
24 Holocene times, have been found on the Hanford Facility (DOE 1988). The youngest faults recognized on the
25 Hanford Facility occur on Gable Mountain, approximately 38 kilometers northwest of the 300 Area. These
26 faults are of Quaternary age and are considered "capable" by the U.S. Nuclear Regulatory Commission
27 (NRC 1982).
28

29 The 325 Building was evaluated to assess building structure adequacy to withstand a Design Basis
30 Earthquake (DBE) found in URCL-15910, Design and Evaluation Guidelines for Department of Energy
31 Facilities Subjected to Natural Phenomena Hazards. This DBE corresponds to a horizontal ground acceleration
32 of 0.135g with a 5000 year return period. The 325 building was found to be able to withstand the 0.135g site
33 specific DBE without major structural damage (WHC 1992).
34

35
36 **2.4 TRAFFIC INFORMATION FOR THE 325 HAZARDOUS WASTE TREATMENT UNITS [B-4]**
37

38 General traffic information for the Hanford Facility is presented in the *Hanford Facility Dangerous*
39 *Waste Permit Application, General Information Portion* (DOE/RL-91-28).
40

41 Access to the 300 Area by vehicular traffic is by Stevens Drive and George Washington Way. Traffic
42 on Stevens Drive consists of personal vehicles, buses for the transport of personnel to and from work, and
43 light- or medium-duty trucks for the transport of materials. Traffic on the capillary routes is private vehicles
44 destined for designated parking areas, buses for the transport of personnel to and from work, and light- or
45 medium-duty trucks for the transport of materials.
46

47 Personnel have access to the 325 Building through multiple pedestrian gates located on the 300 Area
48 perimeter. Vehicular traffic to the 325 Building is limited to DOE-RL, or contractor-owned vehicles only. No
49 new routes are needed. Maximum posted speed within the 300 Area is 24 kilometers per hour. Traffic

1 destined for adjacent buildings averages 10 to 15 vehicles per day and ranges from passenger cars to heavy
2 trucks. All roads within the 300 Area are paved, all-weather roads.

3
4 Waste generated at laboratories within the 300 Area will be transferred to the 325 HWTUs over roads
5 where public access is prohibited. All access to the 300 Area (except the outer parking lot) is controlled by the
6 DOE-RL and limited to personnel holding appropriate clearances. In the immediate area of the 325 Building,
7 vehicular traffic is limited to vehicles on official business. Traffic destined for the 325 Building travels over
8 roads designed to handle truck traffic. An estimated one or two waste transfers to or from the 325 HWTUs
9 occur per week. Waste transfers from the RLWS load out tank system in the 325 Building to the 200 East
10 Area will occur via an approved cask transportation system based on a Hanford Site Safety Analysis Report for
11 Packaging. These waste transfers are anticipated to occur about three times per year.

12
13 The dangerous waste is transferred in accordance with applicable onsite and/or offsite requirements
14 including Condition II.Q of the Hanford Facility RCRA Permit. Although many onsite waste transfers are
15 exempt from the manifest requirements of WAC 173-303-370, onsite waste tracking is applied as a matter of
16 good management practice. These onsite transfer requirements are designed to ensure that personnel exposures
17 are maintained as low as reasonably achievable (ALARA), that loss of contamination control is prevented, and
18 that applicable transportation regulations be obeyed.

21 **2.5 RELEASE FROM SOLID WASTE MANAGEMENT UNITS [E]**

22
23 Information concerning releases from solid waste management units is discussed in the General
24 Information Portion (DOE/RL-91-28).

- 1 • Review all paperwork and enclose the forms in a leak-tight polyethylene bag taped to the
2 underside of the cooler lid or attach paperwork to the container as appropriate.
3
- 4 • Seal and mark the coolers or comparable receptacles in accordance with applicable DOT
5 requirements.
6
- 7 • Transport coolers or appropriate containers to the analytical laboratory or laboratory
8 receiving facility.
9

10 Sample-container selection is crucial to sample quality. Considering waste compatibility,
11 durability, volume, and analytical sensitivities, the containers listed in Table 4.1 are recommended
12 to the generators for these efforts.
13

14 All samples are labeled with at least the following information:
15

- 16 • a unique alpha-numeric identifier
17
- 18 • date and time of collection
19
- 20 • sample collector's name
21
- 22 • preservatives used
23
- 24 • analyses requested.
25

26 Immediately after collection, samples are placed on blue ice or an equivalent, as required, in
27 durable coolers or comparable receptacles for transport to the offsite laboratory. Before shipping
28 or transfer, coolers or comparable receptacles are tightly sealed with duct tape and are custody-
29 sealed along the front and back edges of the lids. Samples are transported to offsite laboratories
30 within 24 hours of collection. Samples are transported to offsite laboratories by overnight courier
31 to ensure delivery within 24 hours of sample collection. All offsite sample collection, preparation,
32 packaging, transportation, and analyses conform to the requirements of SW-846 or equivalent.
33

34 During all sampling activities, strict compliance with health physics, industrial hygiene, and safety
35 standards is mandatory. Personnel are required to wear eye-, skin-, and respiratory-protection
36 gear as dictated by industrial hygiene and health- physics personnel. If personnel accidentally
37 contact waste material, decontamination procedures are to be performed immediately.
38

39 A chain-of-custody record accompanies samples being analyzed for chemical constituents at all
40 times. The record contains the sample number, date and time of collection, sample description,
41 and signatures of the collector and all subsequent custodians.
42

43 Transportation of samples is in accordance with the DOT and the DOE-RL requirements.
44 Hazardous-waste samples are properly packaged, marked, and labeled. For offsite shipments,
45 shipping papers are prepared in accordance with applicable DOT regulations.

1 All equipment used to sample waste materials is disposable or designed for easy decontamination.
2 Cleanable equipment is thoroughly decontaminated before reuse. Decontamination solutions are
3 managed as hazardous waste as appropriate, according to the threshold-contaminant levels
4 exceeded in the sampled liquids. Disposable samplers will be used whenever possible to eliminate
5 the potential for cross-contamination.
6

7 **4.1 SAMPLE CUSTODY**

8
9 The generators or 325 HWTUs personnel are responsible for initiating and following chain-of-
10 custody procedures. Generators initiate sample-custody records in the field at the time samples
11 are collected. A chain-of-custody form is used to document sample-collection activities, including
12 sampling site, sample identification, number of samples, and date and time of collection.
13 Additionally, the form documents the chain of custody including the names of responsible
14 individuals and the dates and times of custody transfers.
15

16 **4.2 SAMPLE RECEIPT AND STORAGE**

17
18 Samples are received at a qualified contracted laboratory or laboratory receiving facility by a
19 sample custodian. This individual carefully reviews received samples and documentation for
20 compliance with sampling and documentation requirements, such as type and condition of
21 container, sample preservation, collection date, and chain-of-custody forms. The sample
22 custodian signs and dates the chain-of-custody form after verifying that all samples submitted are
23 listed and that the required information is listed on the form. The sample custodian places an
24 identification number on each sample and returns the samples to a refrigerator, if required,
25 designated for storage of samples requiring analysis. The sample custodian stores and secures the
26 samples appropriately (e.g., in a locked refrigerator). Based on the type of sample and analysis
27 requested, special procedures for sample handling, storage, and distribution could be specified.
28

29 **4.3 SAMPLE DISTRIBUTION**

30
31 Where practical, chain-of-custody documentation for samples continues throughout the analytical
32 process. After logging in and storing the samples, the sample custodian distributes sample
33 documentation, which lists sample numbers and analyses to be performed, to the appropriate
34 analysts and technical leaders. On completion of analyses, results are submitted to the generators
35 or 325 HWTUs personnel along with QA/QC information.
36

37 **4.4 FIELD ANALYTICAL METHODS**

38
39 Analytical methods employed to verify or characterize waste are of two types: fingerprint analysis
40 and laboratory analysis. Fingerprint analysis is used primarily to verify waste characteristics of
41 waste received from offsite non-PNNL generators. Laboratory analytical methods will be
42 employed to establish waste identity and characteristics and verify waste characteristics when 325
43 HWTUs personnel determine it is necessary.
44
45
46

1 4.4.1 Fingerprint Sampling Analytical Methods

2
3 A representative sample will be taken of the waste (if more than one phase is present, each phase
4 must be tested individually), and the following field tests will be performed:

- 5
- 6 • Reactivity – HAZCAT oxidizer, cyanide, and sulfide tests. These tests will **not** be performed
7 on materials known to be organic peroxides, ethers, and/or water-reactive compounds.
- 8
- 9 • Flashpoint/explosivity – by HAZCAT flammability Procedure B, explosive-atmosphere
10 meter, or a closed-cup flashpoint-measurement instrument.
- 11
- 12 • pH - by pH meter or pH paper (SW-846 9041). This test will not be performed on non-
13 aqueous materials (i.e., organic solvents).
- 14
- 15 • Halogenated organic compounds - by organic-vapor analyzer with a flame ionization detector,
16 Chlor-D-Tect kits, or the HAZCAT fluoride, chloride, bromide, and iodide tests.
- 17
- 18 • Volatile organic compounds - by gas chromatograph/mass spectrometer or gas
19 chromatograph (GC) with a photo- or flame-ionization detector.
- 20

21 If the waste meets the parameters specified in the documentation, then confirmation of
22 designation is complete. If the waste does not meet these parameters, then proceed to the next
23 step.

- 24
- 25 1. Sample and analyze the materials in accordance with WAC 173-303-110.
- 26
- 27 2. Reassess and redesignate the waste. Repackage and label as necessary or return to the
28 generator.
- 29
- 30 3. Data obtained through the waste-verification process will be used to verify the accuracy of
31 the waste designation for waste received at 325 HWTUs.
- 32

33 4.5 LDR WASTE-ANALYSIS REQUIREMENTS

34
35 The *Hazardous and Solid Waste Amendments of 1984* prohibit the land disposal of certain types
36 of waste that are subject to RCRA. Many of the waste types stored at 325 HWTUs fall within the
37 purview of these land-disposal restrictions (LDRs). Information presented below describes how
38 generators and 325 HWTUs personnel characterize, document, and certify waste subject to LDR
39 requirements.

40 41 4.5.1 Waste Characterization

42
43 Before being received at 325 HWTUs, the RCRA waste characteristics, the level of toxicity
44 characteristics, and the presence of listed waste are determined during the physical and chemical
45 analyses process. This information allows waste-management personnel to make all LDR
46 determinations accurately and complete appropriate notifications and certifications.

1 determinations accurately and complete appropriate notifications and certifications.

2 3 **4.5.2 Sampling and Analytical Procedures**

4
5 The LDR characterization and analysis may be performed as part of the waste-characterization
6 and analysis process. If waste is sampled and analyzed for LDR characterization, then only EPA
7 or equivalent methods are used to provide sufficient information for proper management and for
8 decisions regarding LDRs pursuant to 40 CFR 268.

9 10 **4.5.3 Frequency of Analysis**

11
12 Before acceptance and during the waste-characterization and analysis process, all LDR
13 characterizations and designations are made. This characterization and analysis process is
14 performed when a CDRR is submitted for waste pick-up, unless there is insufficient data or if the
15 waste stream has changed. Instances where sampling and laboratory analysis may be required to
16 determine accurate LDR determinations include the following:

- 17
18 • when waste-management personnel have reason to suspect a change in the waste based on
19 inconsistencies in the waste-tracking form, packaging, or labeling of the waste
20 • when the information submitted previously by a generator does not match the characteristics
21 of the waste that was submitted
22 • when the offsite TSD facility rejects the waste because the fingerprint samples are inconsistent
23 with the waste profile provided by 325 HWTUs, which was established using generator
24 information.

25 26 **4.5.4 Documentation and Certification**

27
28 The 325 HWTUs have and will continue to receive and store LDR waste.

29
30 Because 325 HWTUs personnel determine designations and characterization, including LDR
31 determinations, all notifications and certifications, as required by 40 CFR 268, are prepared by
32 PNNL qualified staff for PNNL-generated waste. The 325 HWTUs staff collect from the
33 generator(s) the information pursuant to 40 CFR 268 regarding LDR wastes, the appropriate
34 treatment standards, whether the waste meets the treatment standards, and certification that the
35 waste meets the treatment standards, if necessary, as well as any other data, e.g., documented
36 process knowledge and waste-analyses data that support the generator's determinations. If any of
37 the requested information is not supplied by the generator, then the 325 HWTUs personnel
38 complete and transmit all subsequent information regarding LDR wastes, pursuant to 40 CFR
39 268. The notification and certifications are submitted to onsite and offsite TSD units during the
40 waste-shipment process. Additionally, any necessary LDR variances are prepared and submitted
41 by PNNL qualified staff.

42
43 The 325 HWTUs staff require applicable LDR information/notifications from non-PNNL
44 generators.

45
46 Where an LDR waste does not meet the applicable treatment standards set forth in 40 CFR 268,

1 Where an LDR waste does not meet the applicable treatment standards set forth in 40 CFR 268,
2 Subpart D, or exceeds the application prohibition levels set forth in 40 CFR 268.32 or Section
3 3004(d) of RCRA, 325 HWTUs provides to the onsite and offsite TSD a written notice that
4 includes the following information:

- 5
- 6 • EPA hazardous-waste number
- 7 • the corresponding treatment standards and all applicable prohibitions set forth in WAC 173-
8 303, 40 CFR 268.32, or RCRA Section 3004(d)
- 9 • the manifest number associated with the waste
- 10 • all available waste-characterization data.
- 11 • identification of underlying hazardous constituents.

12
13 In instances where 325 HWTUs determines that a restricted waste is being managed that can be
14 land-disposed without further treatment, 325 HWTUs staff submits a written notice and
15 certification to the onsite or offsite TSD where the waste is being shipped, stating that the waste
16 meets applicable treatment standards set forth in WAC 173-303-140 (40 CFR 268, Subpart D),
17 and the applicable prohibition levels set forth in 40 CFR 268.32 or RCRA Section 3004(d). The
18 notice includes the following information:

- 19
- 20 • EPA hazardous-waste number
- 21 • corresponding treatment standards and applicable prohibitions
- 22 • waste-tracking number associated with the waste
- 23 • all available waste-characterization data
- 24 • identification of underlying hazardous constituents.

25
26 The certification accompanying any of the previously described notices is signed by an authorized
27 representative of the generator and states the following:

28
29 I certify under penalty of law that I personally have examined and am familiar with the waste
30 through analysis and testing or through knowledge of the waste to support this certification that
31 the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all
32 applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the
33 information I submitted is true, accurate, and complete. I am aware that there are significant
34 penalties for submitting a false certification, including the possibility of a fine and imprisonment.
35 copies of all notices and certifications described are retained at the TSD unit for at least 5 years
36 from the date that the waste was last sent to an onsite or offsite TSD unit. After that time, the
37 notices and certifications are sent to Records Storage.

4.6 WASTE ANALYSIS FOR SPILLS AND UNKNOWNNS

In the event of a spill or release of DW within 325 HWTUs, the following steps will be implemented:

1. The identification number on the leaking container will be determined based on visual inspection. If the container(s) involved cannot be approached, the location of the container involved and the associated storage-cell designations can be determined from a distance.
2. The container-identification number or container-location number will be entered into 325 HWTUs inventory database to determine the CDRR number.
3. The hard copy of the CDRR or a computerized information printout for the container, which contains all applicable information regarding the contents of the container, will be located. The hazards associated with the waste will be determined before exercising the emergency-response procedures outlined in the *325 HWTUs Contingency Plan*.
4. Respond to the spill in accordance with the requirements of the 325 Building Emergency Plan. The *325 HWTUs Contingency Plan* is implemented if there is a threat to human health or the environment.
5. A new CDRR will be filled out using the information from the original CDRR and information from any spill-cleanup kits or absorbents. The waste will then be designated and characterized.

If a leak or other liquid is discovered in the 325 HWTUs that cannot be tracked to a specific container because of safety or logistics reasons, then the procedures outlined in the *325 HWTUs Contingency Plan* would be implemented for responding to an "unknown" chemical release. The residues, including cleanup absorbents, of such a release would be sampled and analyzed in accordance with the requirements in the *325 HWTUs Contingency Plan* to determine the characteristics of the waste residue as defined by WAC 173-303-070. Sampling and analysis of the residues will include pH, metals, volatile organics, and semi-volatile organics analyses, as required.

Based on the information gathered from the laboratory analysis, a new CDRR for the waste cleanup will be filled out. The waste will then be designated and characterized.

Hanford Facility RCRA Permit Modification Notification Forms

for

Part VI, Chapter 1 and Attachment

300 Area Process Trenches

Page 1 of 6

Index

- Page 2 of 6: RCRA Permit Condition VI.1.B.b.
Page 3 of 6: RCRA Permit Condition VI.1.B.p.
Page 4 of 6: Section 7.4.1.1.1, Page 7-8
Page 5 of 6: Section 7.4.1.1.5, Page 7-8
Page 6 of 6: Section 7.7, Page 7-11

Hanford Facility RCRA Permit Modification Notification Form

Unit:
300 Area Process Trenches

Permit Part & Chapter:
Part VI, Chapter 1 [Condition VI.1B.b]

Description of Modification:

CONDITION VI.1B.b: Pursuant to condition II.K.7 of the Hanford Facility Wide Permit, the 300 Area Process Trenches (APT) closure shall be a Modified Closure in coordination with the Record of Decision (ROD) for 300-FF-1 and 300-FF-5. Sections of CERCLA documents (examples may include, but are not limited to, Remedial Design/Remedial Action CERCLA work plan, the Operation and Monitoring Work Plan, etc.) which satisfy requirements and conditions of this Modified Closure Plan will be reviewed and approved by the Department.

Modification Class: 2 3 please check one of the Classes:	Class 1	Class ¹ 1	Class 2	Class 3
				X

Relevant WAC 173-303-830, Appendix I Modification: Not explicitly listed.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

Not explicitly listed. A formal request to down grade this change to a Class 1 modification will be made.

Submitted by Co-Operator: <i>V.R. Dronen</i> V. R. Dronen	Reviewed by RL Program Office: <i>R/G. McLeod</i> R/G. McLeod	Approved by Ecology: <i>T.A. Wooley</i> T. A. Wooley
<i>3/4/98</i> Date	<i>5-13-98</i> Date	<i>5/13/98</i> Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification. this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
300 Area Process Trenches

Permit Part & Chapter:
Part VI, Chapter 1 [Condition VI.1.B.p]

Description of Modification:

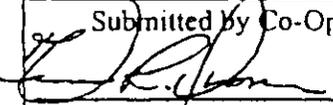
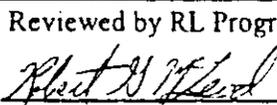
CONDITION VI.1B.p: Page 8-3, line 6. Security Control Devices (SCD) will be developed pursuant to Condition II.K.3.a of the Permit. Implementation of SCD will occur through Department approval of a monitoring, inspection, and maintenance plan.

Modification Class: 2 ³	Class 1	Class ¹ 1	Class 2	Class 3
please check one of the Classes:				X

Relevant WAC 173-303-830, Appendix I Modification: Not explicitly listed.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

Not explicitly listed. A formal request to down grade this change to a Class 1 modification will be made.

Submitted by Co-Operator:  V. R. Dronch	Reviewed by RL Program Office:  R. G. McLeod	Approved by Ecology:  T. A. Wooley
3/4/98 Date	5-13-98 Date	5/13/98 Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
300 Area Process Trenches

Permit Part & Chapter:
Part VI, Chapter 1 [Section 7.4.1.1.1, Page 7-8]

Description of Modification:

7.4.1.1.1 Monitoring. Short-term monitoring will be conducted during remediation to protect workers, control adverse offsite side effects, provide QC, and evaluate performance of the remedy. Airborne dust or emissions are the primary offsite concern. Air sampling stations will be established around the perimeter of the 300-FF-1 Operable Unit which includes the 300 APT, and air samples will be routinely collected and analyzed in accordance with Agreements documented in two sets of meeting minutes (R.A. Carlson, Bechtel Hanford, Inc. to Distribution, "300-FF-1 near Field Air Monitoring Sampling," 048036, dated November 19, 1996, and 048035, dated May 27, 1997. Other monitoring will include radiation monitoring for purposes of worker safety and process QC. The specifics of monitoring programs used for process QC purposes could be determined as a portion of the DQO process for the SAP, or could be determined through the appropriate CERCLA design documents. Site monitoring information will be added to the closure plan as available.

Modification Class: 2 ³	Class 1	Class 1 ¹	Class 2	Class 3
please check one of the Classes:				X

Relevant WAC 173-303-830, Appendix I Modification: Not explicitly listed.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

Not explicitly listed. A formal request to down grade this change to a Class 1 modification will be made.

Submitted by Co-Operator: <i>V. R. Dronen</i> 3/4/98 V. R. Dronen Date	Reviewed by RL Program Office: <i>Robert G. McLeod</i> 5-13-98 R. G. McLeod Date	Approved by Ecology: <i>T. A. Wooley</i> 5/13/98 T. A. Wooley Date
--	--	--

¹Class 1 modifications requiring prior Agency approval.

²This is only an advanced notification of an intended Class ¹, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
300 Area Process Trenches

Permit Part & Chapter:
Part VI, Chapter I [Section 7.4.1.1.5, Page 7-8]

Description of Modification:

7.4.1.1.5 Surface Water Management. Little contaminated surface water is expected because of low precipitation and use of the best management practices in controlling surface water. Surface water from dust abatement or soil washing will be controlled during site remediation to prevent the spread of contamination and minimize the amount of water contacting contaminated soil. All remediation alternatives for the TSD unit will include dikes and ditches, as necessary, to prevent run-on and run-off of surface water.

Modification Class: 2 ³ please check one of the Classes:	Class 1	Class 1 ¹	Class 2	Class 3
				X

Relevant WAC 173-303-830, Appendix I Modification: Not explicitly listed.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

Not explicitly listed. A formal request to down grade this change to a Class 1 modification will be made.

Submitted by Co-Operator: <i>V. R. Dronen</i> V. R. Dronen	Reviewed by RL Program Office: <i>R. G. McLeod</i> R. G. McLeod	Approved by Ecology: <i>T. A. Wooley</i> T. A. Wooley
3/4/98 Date	5-13-98 Date	5/13/98 Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class 1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit: 300 Area Process Trenches	Permit Part & Chapter: Part VI, Chapter I [Section 7.7, Page 7-11]
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Description of Modification:

7.7 PERSONNEL TRAINING

Appendix 7C contains a brief description of training courses. This training fulfills WAC 173-303-330 requirements for safety and site access training for work at a hazardous waste site containing both radioactive and dangerous waste hazards. All personnel entering the TSD unit during closure must have OSHA training, as required by 29 CFR 1910.120.

Modification Class: ^{2 3}	Class 1	Class 1 ¹	Class 2	Class 3
please check one of the Classes:				X

Relevant WAC 173-303-830, Appendix I Modification: Not explicitly listed.

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

Not explicitly listed. A formal request to down grade this change to a Class 1 modification will be made.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Approved by Ecology:
<i>V. R. Dronen</i> V. R. Dronen	<i>B. G. McLeod</i> B. G. McLeod	<i>T. A. Wooley</i> T. A. Wooley
<i>3/4/98</i> Date	<i>5-13-98</i> Date	<i>5/13/98</i> Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class 1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to 1, if appropriate.

Hanford Facility RCRA Permit

Part VI, Chapter 2

300 Area Process Trenches

Page Changes

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1 unit piping and structures may be demolished and removed to gain access to underlying soils for removal or
2 treatment. TSD unit structure debris that cannot be disposed of as remediation waste at the ERDF or under
3 a surface barrier must be sampled before disposal (Section 7.4.3). The birdscreens and TSD unit boundary
4 fencing (if removed) did not contact effluent and are not expected to be contaminated. However, they will
5 be screened for contamination as indicated in the approved SAP. If contaminated, they will be disposed of
6 as remediation waste. If not contaminated, they will be collapsed and disposed in a landfill.

7
8 **7.4.1.1 Monitoring.** Short-term monitoring will be conducted during remediation to protect
9 workers, control adverse offsite side effects, provide QC, and evaluate performance of the remedy.
10 Airborne dust or emissions are the primary offsite concern. Air sampling stations will be established
11 around the perimeter of the 300-FF-1 Operable Unit which includes the 300 APT, and air samples will be
12 routinely collected and analyzed in accordance with Agreements documented in two sets of meeting
13 minutes (R.A. Carlson, Bechtel Hanford, Inc. to Distribution, "300-FF-1 near Field Air Monitoring
14 Sampling," 048036, dated November 19, 1996, and 048035, dated May 27, 1997). Other monitoring will
15 include radiation monitoring for purposes of worker safety and process QC. The specifics of monitoring
16 programs used for process QC purposes could be determined as a portion of the DQO process for the SAP,
17 or could be determined through the appropriate CERCLA design documents. Site monitoring information
18 will be added to the closure plan as available.

19
20 **7.4.1.2 Excavation.** Soils would be excavated using backhoes and bulldozers to load trucks
21 that will move soil to stockpiles. Depending on the alternative selected, soils will be segregated as clean
22 soil, contaminated soil for direct disposal, or contaminated soil for treatment. Segregation could be
23 automated (e.g., by using conveyor belts). Shielded excavation equipment and/or reduced work shifts will
24 be used to minimize radiation exposure. Excavation equipment will be decontaminated when remediation
25 is complete. Dust suppression would include keeping open excavations and stockpiles to a minimum and
26 using water sprayers to wet soil enough to prevent dust.

27
28 **7.4.1.3 Transportation.** Onsite transportation of excavated TSD unit soils to the treatment
29 plant, clean stockpiles, or facilities for offsite loading will be by use of trucks or front-end loaders. Offsite
30 shipment would be by truck or rail using suitable, covered, reusable bulk containers. The ERDF will be
31 able to accept bulk containers. Transportation equipment would be dedicated and decontaminated at job
32 completion. Worker exposures would be minimized as low as reasonably achievable (ALARA) by
33 appropriate shielding and protective clothing.

34
35 **7.4.1.4 Fixation.** Fixation of soil wash fines or of a small portion of straight disposal waste
36 may be required in order to meet the ERDF waste acceptance criteria (DOE-RL 1995b). This process
37 entails crushing the soils to less than 19 nun (0.75 in.) and then mixing them with flyash, Portland cement,
38 and water. Fixation will be as shown in Figure 7-2. Fixation will add approximately 20% to the volume of
39 contaminated waste.

40
41 **7.4.1.5 Surface Water Management.** Little contaminated surface water is expected because
42 of low precipitation and use of the best management practices in controlling surface water. Surface water
43 from dust abatement or soil washing will be controlled during site remediation to prevent the spread of
44 contamination and minimize the amount of water contacting contaminated soil. All remediation
45 alternatives for the TSD unit will include dikes and ditches, as necessary, to prevent run-on and run-off of
46 surface water.

1 contaminated soils, soil concentrations likely no longer exist above designation levels.

2
3 Structures and piping inside the 300 APT boundary have not been previously sampled. If not redesignated
4 as remediation waste, this demolition debris would require sampling for waste designation prior to disposal.

5
6 **7.5 OTHER CLOSURE ACTIVITIES**

7
8 Other TSD unit closure activities may be identified in future 300-FF-1 Operable Unit remedial action
9 documents in support of TSD unit closure. As information regarding other TSD unit closure activities
10 becomes available from the CERCLA document governing the activity, Ecology will be notified.

11
12 Equipment used during the remediation of the process trenches will be decontaminated in accordance with
13 the appropriate CERCLA operable unit working documents.

14
15 **7.6 CONTINGENCY CLOSURE PLAN**

16
17 WAC 173-303-610(3) requires that closure plans for surface impoundments, such as the 300 APT TSD
18 unit, contain a contingency plan in case the unit must close with dangerous waste remaining above action
19 levels. This contingency is normally identified as landfill closure. However, characterization sampling has
20 indicated that RCRA soil contamination is below MTCA Method C industrial levels that qualify the site for
21 modified closure. Consequently, a contingency plan for closure of this unit as a landfill is not necessary.
22 Postclosure care of this unit under the conditions of modified closure as the stated closure strategy (Chapter
23 6.0) will be addressed in Chapter 8.0.

24
25 **7.7 PERSONNEL TRAINING**

26
27 Appendix 7C contains a brief description of training courses. This training fulfills WAC 173-303-330
28 requirements for safety and site access training for work at a hazardous waste site containing both
29 radioactive and dangerous waste hazards. All personnel entering the TSD unit during closure must have
30 OSHA training, as required by 29 CFR 1910.120.

31
32 **7.8 SCHEDULE OF CLOSURE**

33
34 Figure 7-3 reflects the overall schedule for activities within the 300-FF-1 Operable Unit, which includes the
35 closure of the 300 APT. As an integrated activity, and in accordance with submittal schedules presented in
36 Appendix D of the Tri-Party Agreement Action Plan, RCRA closure plan preparation has been coordinated
37 with preparation of the CERCLA *Phase III Feasibility Study Report for the 300-FF-1 Operable Unit*
38 (DOE-RL 1995b). These documents will remain on the same schedule for review, public comment, and
39 finalization.

40
41 Closure of the 300 APT will begin, subsequent to the approval of the ROD and concurrent with remedial
42 activity for the 300-FF-1 Operable Unit. However, remediation activities in support of closure can begin
43 before closure plan approval with prior notification to Ecology

44
45
46