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

APR 10 1997

97-EAP-361



Mr. Moses N. Jaraysi  
200 Area Unit Supervisor  
Nuclear Waste Program  
State of Washington  
Department of Ecology  
1315 West Fourth Avenue  
Kennewick, Washington 99336-6018

Dear Mr. Jaraysi:

QUARTERLY NOTIFICATION OF CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PERMIT, DANGEROUS WASTE PORTION (QUARTER ENDING MARCH 31, 1997 — PERMIT CONDITION I.C.3.)

Condition I.C.3. of the Hanford Facility RCRA Permit, Dangerous Waste Portion (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.

The Hanford Facility RCRA Permit (DW Portion) has been modified this quarter to update information in Part I and III (Enclosure). Part I Class 1 modifications pertain to the Permit Modification Schedule, Attachment 27. Part III Class 1 modifications pertain to the 305-B Storage Facility. The Class 1 modifications are being made to ensure that all activities conducted are in compliance with the RCRA Permit (DW Portion).

Should Ecology determine that the enclosed modifications do not qualify as Class 1 modifications as defined in WAC 173-303-830, written authorization to continue operations is requested until the appropriate level of modification can be accomplished.

In accordance with a teleconference held with you on March 3, 1995, a transmittal letter signed by the permittees is sufficient to authorize the submittal of the Quarterly Notification of Class 1 Modifications to the Hanford Facility RCRA Permit (DW Portion) and to meet the intent of Permit Condition I.F., Signatory Requirement.

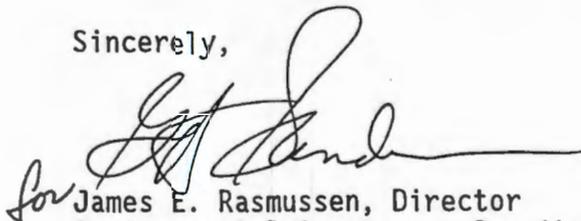
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Mr. Moses N. Jaraysi  
97-EAP-361

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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; or Harold T. Tilden II, Pacific Northwest National Laboratory, on (509) 376-0499.

Sincerely,

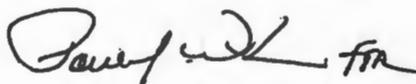


James E. Rasmussen, Director  
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Enclosure:  
Class 1 Modifications to  
the Hanford Facility  
RCRA Permit (DW Portion)  
(Quarter Ending March 31, 1997)

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**QUARTERLY NOTIFICATION OF CLASS 1 MODIFICATIONS TO  
THE HANFORD FACILITY RCRA PERMIT,  
DANGEROUS WASTE PORTION  
(Quarter Ending March 31, 1997)**

**Page 1 of 11**

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**PART I CLASS 1 MODIFICATIONS:  
ATTACHMENT 27**

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Attachment 27: Remove and replace the Permit Modification Schedule, Attachment 27.

Reason: The Transuranic Storage and Assay Facility (TRUSAF) Part B permit application documentation is being changed to a closure plan. In support of the TRUSAF closure this closure plan needs to be moved from Modification E, 1999 to Modification D, 1998.

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**PART I CLASS 1 MODIFICATIONS:  
ATTACHMENT 27 (Continued)**

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Replacement page for Attachment 27

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PERMIT MODIFICATION SCHEDULE  
 Attachment 27

Year and Mod.	TSD/Unit	0	Status and Remarks
1994 Mod. 0	616 Storage Facility	B	In Rev. 0, Completed, approved
	305-B Storage Facility	B	In Rev. 0, Completed, approved
	183-H Solar Evaporation Basin	C	In Rev. 0, Completed, approved
	300 Area Solvent Evaporator	CC	In Rev. 0, Completed, approved
	2727-S Storage Facility	CC	In Rev. 0, Completed, approved
1995 Mod. A	218-E-8 Borrow Pit Demolition Site	CC	In Rev. 1, Completed, approved
	200 Area Ash Pit Demolition Site	CC	In Rev. 1, Completed, approved
	216-B-3 Expansion Ponds	CC	In Rev. 1, Completed, approved
	2101 M Pond	CC	In Rev. 1, Completed, approved
	Simulated High Level Waste Slurry Treatment & Storage	CC	In Rev. 1, Completed, approved
1995 Mod. A'	Hanford Patrol Academy Demolition	CC	In Rev. 2, Completed, approved
	105-DR Large Sodium Fire Facility	C	In Rev. 2, Completed, approved
	304 Concretion Facility	CC	In Rev. 2, Completed, approved
1996 Mod. B	PUREX Tunnels 1 & 2	B	In Rev. 3, Completed, approved
	300 Area Process Trenches <sup>∇</sup>	C	In Rev. 3, Completed, approved
	3718-F Alkali Metal Treatment	C	In Rev. 3, Completed, approved
	4843 Alkali Metal Storage	C	In Rev. 3, Completed, approved
	303-K Storage Facility	C	In Rev. 3, Completed, approved
1997 Mod. C	300 Waste Acid Treatment & Storage	C	
	325 Hazardous Waste Treatment Unit	B	
	242-A Evaporator	B	
	200 Area Effluent Treatment Facility/Liquid Effluent Retention Facility	B	
	Low Level Burial Grounds	B	
1998 Mod. D	100 D Ponds	C	
	1324-N Surface Impoundment	C	
	1324-NA Percolation Pond	C	
	Hanford Central Waste Complex; Waste Receiving & Processing (1)	B	
	Transuranic Storage and Assay Facility	C	
1999 Mod. E	222-S Laboratories;	B	
	Double Shell Tank System	B	
	1325-N Liquid Waste Disposal	C	
	1301-N Liquid Waste Disposal	C	
2000 Mod. F	216-B-3 Main Pond	C	
	216-B-63 Trench	C	
	216-A-29 Ditch	C	

Legend: \* - Type of Permit      C - Closure/PostClosure Plan      B - Part B Application      CC - Clean Closed

**Note:**

- All TSD Units not shown in this table will be scheduled through a Class '1 Permit Modification (requiring prior approval) to Attachment 27.
- All Permit Modifications listed in this table will be conducted in accordance with the applicable requirements in WAC 173-303-830.
- New TSD Part B Applications, if submitted, will be added to this table through a Class '1 Permit Modification (requiring prior approval).

<sup>∇</sup>Closure plan/Postclosure plan went through public comment in conjunction with 300-FF-1 O.U.

**PART III CLASS 1 MODIFICATIONS:  
305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS**

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1. Page 2-15: Removed and replaced with page 2-15 in accordance with quarterly Class 1 modification quarter ending December 31, 1994.

Reason: Incorporated Class 1 modification from quarter ending December 31, 1994, into Chapter 2.

Chapters 4, 6, and 7: Removed and replaced the Chapters listed below. These Chapters included editorial changes and incorporation of past quarterly Class 1 modifications:

- Chapter 4 (Process Information), Rev. 1A
- Chapter 6 (Procedures to Prevent Hazards), Rev. 1A
- Chapter 7 (Contingency Plan), Rev. 1A.

The changes for Chapters 4, 6, and 7 are described below:

2. Pages 4i and 4ii: The Table of Contents was regenerated.

Reason: The Table of Contents was regenerated due to the additional pages required to incorporate the past Class 1 modifications.

3. Page 4-i: Added the titles for Figures 4-10 and 4-11.

Reason: Figure 4-10 and Figure 4-11 were not included in the table of contents. (Refer to Number 2).

4. Page 4-2, line 13; and 4-15, line 44: Changed "PNL" to "PNNL".

Reason: Changed "PNL" to "PNNL" to reflect current name.

5. Pages 4-19 and 4-22: Removed Table 4-1, Uniform Building Code Storage Restrictions. Renumbered Table "4-2" to "4-1" and Table "4-3" to "4-2".

Reason: The Uniform Building Code (UBC) document is available to the public, therefore, the UBC does not need to be repeated in Chapter 2.

6. Page 4-23: Replaced Figure 4-11, Flammable Liquids Storage Module.

Reason: This figure was inadvertently named Figure 4-10; renamed to Figure 4-11.

7. Pages 6i and 6ii: Removed and replaced with pages 6i and 6ii.

Reason: The Table of Contents was regenerated due to the additional pages required to incorporate the past Class 1 modifications.

**PART III CLASS 1 MODIFICATIONS:**  
**305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS (continued)**

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8. Page 6-3, lines 7 and 28; page 6-7, lines 1 and 6; page 6-9, line 49; page 6-13, line 35; page 6-14, lines 10, 23, and 29: Changed "PNL" to "PNNL".

Reason: Changed "PNL" to "PNNL" to reflect current name.

9. Page 7-i: Renumbered from Section 7.4.7 to 7.4.14.

Reason: Renumbered from Section 7.4.7, because the original Chapter 7, Rev. 1, skipped numbering Section 7.4.7.

10. Page 7-2, lines 5, 20, and 40; page 7-3, lines 1, 3, 8, and 33; page 7-4, line 1; page 7-5, line 16; page 7-6, lines 3 and 28; page 7-7, line 47; page 7-8, lines 30 and 31; page 7-10, lines 31 and 34; page 7-11, line 39; page 7-16, line 1; and page 7-20, line 22: Changed "PNL" to "PNNL".

Reason: Changed "PNL" to "PNNL" to reflect current name.

11. Page 7-4, line 20; and page 7-16, lines 1 and 3: Changed "WHC" to "PHMC".

Reason: Changed "WHC" to "PHMC" to reflect current name.

12. Page 7-16, line 1: Changed "Kaiser Engineers Hanford" to "PHMC"

Reason: Changed "Kaiser Engineers Hanford" to "PHMC" to reflect current name.

Remove the following Hanford Facility RCRA Permit, Revision 3 Permit Conditions. The following Permit Conditions have been incorporated into the 305-B Storage Facility unit-specific permitting documentation:

13. Page 45 of 77, line 25, Permit Condition III.2.B.g.: remove this permit condition.

Reason: Permit Condition III.2.B.g. was incorporated into Chapter 4, page 4-1, line 24, Section 4.1.1.1.

14. Page 45 of 77, lines 26-28, Permit Condition III.2.B.h.: remove this permit condition.

Reason: Permit Condition III.2.B.h. was incorporated into Chapter 4, page 4-1, lines 35-37, Section 4.1.1.1.

15. Page 45 of 77, lines 29-31, Permit Condition III.2.B.i.: remove this permit condition.

Reason: Permit Condition III.2.B.i. was incorporated into Chapter 4, page 4-20, lines 11-12, Section 4.1.1.8.

16. Page 45 of 77, line 32, Permit Condition III.2.B.j.: remove this permit condition.

Reason: Permit Condition III.2.B.j. was incorporated into Chapter 7, page 7-2, line 41, Section 7.1.

**PART III CLASS 1 MODIFICATIONS:**  
**305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS (continued)**

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17. Page 45 of 77, lines 33-36, Permit Condition III.2.B.k.: remove this permit condition.  
Reason: Permit Condition III.2.B.k. was incorporated into Chapter 7, page 7-3, lines 8-10, Section 7.2.
18. Page 45 of 77, lines 37-38, Permit Condition III.2.B.l.: remove this permit condition.  
Reason: Permit Condition III.2.B.l. was incorporated into Chapter 7, page 7-5, lines 17-18, Section 7.4.2.
19. Page 45 of 77, lines 39-40, Permit Condition III.2.B.m.: remove this permit condition.  
Reason: Permit Condition III.2.B.m. was incorporated into Chapter 7, page 7-11, lines 38-39, Section 7.4.7.
20. Page 45 of 77, lines 41-43, Permit Condition III.2.B.n.: remove this permit condition.  
Reason: Permit Condition III.2.B.n. was incorporated into Chapter 7, page 7-20, lines 40-41, Section 7.9.
21. Page 46 of 77, line 32, Permit Condition III.2.B.cc.: remove this permit condition.  
Reason: Permit Condition III.2.B.cc. was incorporated into Chapter 2, page 2-15, line 25, Section 2.6.1.
22. Page 46 of 77, lines 33-43 and Page 47 of 77, lines 1-3, Permit Condition III.2.B.dd.: remove this permit condition.  
Reason: Permit Condition III.2.B.dd. was incorporated into Chapter 4, page 4-15, lines 17-23, Section 4.1.1.6.11. (Note: Permit Condition III.2.B.dd. was modified earlier during Class 1 modification, quarter ending March 31, 1995).
23. Page 47 of 77, line 4, Permit Condition III.2.B.ee.: remove this permit condition.  
Reason: Permit Condition III.2.B.ee. was incorporated into Chapter 6, page 6-1, line 39, Section 6.1.1.1.
24. Page 47 of 77, line 5, Permit Condition III.2.B.ff.: remove this permit condition.  
Reason: Permit Condition III.2.B.ff. was incorporated into Chapter 6, page 6-3, line 6, Section 6.1.1.2.
25. Page 47 of 77, lines 6-7, Permit Condition III.2.B.gg.: remove this permit condition.  
Reason: Permit Condition III.2.B.gg. was incorporated into Chapter 6, page 6-13, line 39, Section 6.4.5.

**PART III CLASS 1 MODIFICATIONS:**  
**305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS (continued)**

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26. Page 47 of 77, lines 8-9, Permit Condition III.2.B.hh.: remove this permit condition.

Reason: Permit Condition III.2.B.hh. was incorporated into Chapter 7, page 7-15, line 4, Section 7.5.3.

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**PART III CLASS 1 MODIFICATIONS:**  
**305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS (continued)**

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Replacement page for DOE-RL-90-01, Rev. 1

*Page 2-15*

**2.5.9 Measures to Prevent Endangerment to the Health of Employees or the Public Near the Facility**

305-B is within the 300 Area, which is located approximately 1 mile north of the corporate limits of the City of Richland. Public entry to the 300 Area is not allowed; members of the public, therefore, cannot enter 305-B. Exposure of members of the public or employees to dangerous and mixed waste constituents is prevented through administrative controls over the designation, packaging, loading, transporting, and storing of the wastes received at 305-B. In addition, physical controls exist (i.e., spill collection sumps) to prevent release of wastes or waste constituents in the event of a spill.

Employees are trained to handle and store waste packages (Chapter 8.0). The training includes dangerous waste awareness, emergency response, and workplace safety. Protective equipment, safety data, and hazardous materials information are supplied by operations management and are readily available for employee use.

A contingency plan, including emergency response procedures, is in place and is implemented for spill prevention, containment, and countermeasures to reduce safety and health hazards to employees, the environment, and the public. The contingency plan is described in Chapter 7.0.

**2.6 BUFFER MONITORING ZONES [B-6]**

Buffer and monitoring zones around 305-B are described in the following sections.

**2.6.1 Ignitable or Reactive Waste Buffer Zone [B-6a]**

Ignitable and reactive wastes are stored in 305-B in compliance with the requirements of the 1991 Uniform Fire Code, Article 79, Division II (International Conference of Building Officials 1991). Quantity limits for storage are established to comply with requirements for Class B occupancy. Structures surrounding 305-B are laboratory and office buildings which are occupied during normal working hours. The nearest adjacent facility is the 314 Building, which is approximately 30 ft south of 305-B. The closest 300 Area boundary is the western boundary, which is approximately 250 ft west of 305-B.

**2.6.2 Reactive Waste Buffer Zone [B-6b]**

Storage of certain reactive wastes listed in WAC 173-303-630(8)(a) is done at 305-B. These wastes have special storage requirements more stringent than those shown in Section 2.6.1. They are stored in accordance with this section and with the Uniform Building Code's Table 77.201, latest edition. The 1988 edition requires buffer zones in Class B occupancies of 44 inches for storage of such wastes, and the storage locations in 305-B reflecting appropriate buffer zones are noted in Figure 4-1. These wastes are only occasionally stored at the unit depending on generation by individual research projects.

The occupancy storage limitations imposed by UBC for class B occupancy are as follows:

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**PART III CLASS 1 MODIFICATIONS:**  
**305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS (continued)**

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Replacement Chapter for DOE-RL-90-01, Rev. 1

*Chapter 4.0, Rev. 1A*

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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 173-303-190-190 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).

**4.1.1.2 Container Management Practices [D-1a(2)].** Management practices and procedures for containers of dangerous waste are in place at the 305-B Storage Unit to assure the safe receipt, handling, preparation for transport, and transportation of wastes. These practices and procedures are summarized below.

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

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

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

11  
12 Lab Packing. One of the major functions of the 305-B Storage Unit is the preparation of lab packs for offsite  
13 recycling, treatment and/or disposal of small quantity lab wastes generated by DOE-RL/PNNL activities.

14  
15 Lab packs are prepared in compliance with WAC 173-303-161, 49 CFR 173.12, other applicable regulations, and  
16 permit conditions of the planned receiving facility (recycler, treatment facility, or disposal facility). Permit conditions  
17 affecting preparation of lab packs might include types of absorbent materials to be used (e.g., no vermiculite).

18  
19 Lab packs are prepared in the storage cell containing the hazard class(es) to be placed in the lab pack. The  
20 elephant trunk ventilator system is used to minimize respirable dusts from the absorbent material being used  
21 (usually diatomaceous earth). Lab packs may also be prepared in the flammable liquid bulking module if  
22 appropriate; for instance, if compatible materials from more than one storage cell are being combined in a single lab  
23 pack drum. Lab packs may be prepared in the high bay storage area if storage of the completed lab pack is  
24 permitted there per Section 4.3.2.

25  
26 Partial and completed lab packs are closed, labeled, and the contents list documented. Labpacks are stored in the  
27 cell from which the containers inside were drawn, or in the high bay if appropriate.

28  
29 Unit personnel wear appropriate protective clothing while handling containers being placed in lab packs. At a  
30 minimum this includes labcoats, safety glasses or other protective eyewear, and chemical resistant gloves. More  
31 stringent requirements, including use of respiratory protection, may be imposed if appropriate.

32  
33 Bulking. In order to promote greater recycling or treatment of wastes and reduce land disposal, some liquid wastes  
34 are "bulked" into larger containers, typically 30- or 55-gallon closed head drums. Bulking operations for chemicals  
35 which are respiratory or flammability hazards are performed in the "flammable liquid bulking module" (Also referred  
36 to as cell 5.) located in the southwest corner of the unit. Bulking of nonvolatile, low hazard wastes such as saline  
37 solutions or ethylene glycol may be done within the containment areas of the appropriate storage cell or high bay.

38  
39 Wastes to be bulked are fully characterized under the 305-B unit waste analysis plan in Section 3.2. Compatibility is  
40 determined using the information from generating unit designation information, process knowledge, laboratory  
41 analyses, and/or the compatibility determinations described in Section 6.5.2.

42  
43 Containers are transported by hand or forklift to the flammable liquid bulking module area. The receiving drum  
44 (typically 30- or 55-gallon capacity) is placed in the module and the ventilation system is activated. A large  
45 chemically-resistant funnel (either metal or plastic, depending on material to be introduced) is used to pour the  
46 material into the drum. The contents of the smaller containers are then poured, one at a time, into the larger drum.  
47 The receiving drum is monitored by unit personnel to make sure no incompatibility is observed (e.g., fuming,  
48 bubbling, or heat generation). If such incompatibility is observed, no further material is added and the worker leaves  
49 the area, closing the module and leaving the ventilation on. The unit supervisor is notified to evaluate  
50 implementation of the contingency plan.

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

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

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

13  
14 **4.1.1.3 Secondary Containment System Design and Operation [D-1a(3)].** Several design features have been  
15 engineered into the construction of the 305-B Storage Unit as added safeguards for containment of dangerous waste  
16 spills or leaks. Design drawings for 305-B are included in Appendix 4A. The following subsections comment briefly  
17 on each of the design features.

18  
19 **4.1.1.4 Requirement for Base or Liner to Contain Liquids [D-1a(4)].** The base of the facility consists of a 6-in.  
20 reinforced, poured concrete slab with no cracks or gaps. The concrete was mixed in accordance with ASTM 094,  
21 Section 5.3, Alternate 2, and all exposed surfaces were finished with a smooth troweled surface. Expansion joint  
22 material is Sonneborn "Sonoflex F™" polyethylene filler. The bonding compound used at the expansion joints was  
23 Sonneborn "Sonobond™" two-part epoxy. All edges and corners were sealed with a continuous bead of polysulfide  
24 sealant.

25 A chemically resistant sealant paint was applied in February 1989 to the storage cells and high bay floor, and in  
26 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 areas of 1989  
27 application are shown on Plate 4-1 and painting methods (surface preparation and application of coatings) are  
28 described on Plate 4-2 of Appendix 4A of this permit application. The surface coating is Coronado #101-1  
29 (101 Series) Polyamide Epoxy Coating. Estimated service life of the coating material is 14 years per manufacturer's  
30 literature. Performance specifications and a compatibility chart are provided in Appendix 4B.

31  
32 The condition of the floor coating is inspected weekly per Section 6.2.1.1, and repairs are made as needed.  
33 Immediate repairs are indicated whenever the coating is observed to have been chipped, bubbled up, scraped, or  
34 otherwise damaged in a manner which would significantly impact the ability of the coating to contain spilled  
35 materials. Minor nicks and small chips resulting from normal operations will be repaired on a periodic basis.  
36 Repairs are performed in accordance with procedures provided by the manufacturer in Appendix 4B.

37  
38  
39 **4.1.1.5 Containment System Drainage [D-1a(5)].** The concrete floors in each high bay storage cell are canted  
40 toward individual secondary containment trenches within those cells. These trenches are isolated from each other in  
41 order to prevent interaction, reactions, or offsite migration of spilled materials. This provides protection even during  
42 simultaneous spills.

43  
44 The floors in the high bay area are also canted toward a separate sump system which is sealed with epoxy and  
45 blocked to prevent drainage. Drums stored in this area are also stored on pallets to prevent contact with spilled  
46 material in the event of a release. Segregated storage areas for incompatible materials have been set up in the  
47 high bay storage area to prevent commingling of spilled wastes during a catastrophic (multi-drum) spill incident.  
48 Each area has its own containment trench separated from other trenches with concrete and epoxy.

1 The flammable liquids bulking module, along with its purpose of providing a ventilated area for bulking of compatible  
2 hydrocarbon wastes, is used as an independent storage cell. Secondary containment is provided by the walls of the  
3 module, which have been sealed at the floor joint by use of grout coated with epoxy paint.  
4

5 For protection of the basement RMW storage area, curbing/diking is provided to prevent migration. Drums are stored  
6 on pallets to prevent container contact with spilled materials and drip pans are provided to segregate RMW by  
7 dangerous waste characteristic as described in Section 4.1.1.6.11. This area has no drainage.  
8

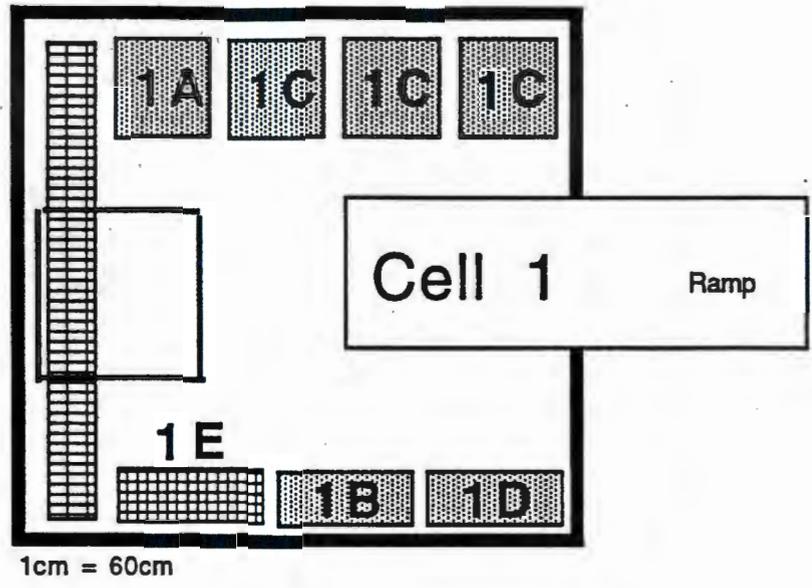
9 Flammable RMW is stored within its own secondary containment devices. Small containers of flammable RMW are  
10 stored in a storage cabinet as noted in Section 4.3.1. Larger containers are stored in individual secondary  
11 containment devices (i.e., drip pans) to prevent runoff or mingling of spilled contents as described in Section  
12 4.1.1.6.10.  
13

14 **4.1.1.6 Containment System Capacity [D-1a(6)].** Secondary containment is provided for all dangerous wastes  
15 stored at the 305-B unit. All floors in the high bay area are sloped toward sumps which have no drains and are  
16 covered with grating to prevent safety hazards. In addition, all floors in the high bay area are coated with an epoxy  
17 based coating as described in Section 4.1.1.4. Inspection of the containment system to maintain integrity is  
18 described in Section 6.2. Individual secondary containment systems are configured as follows:  
19

20 **4.1.1.6.1 Acids and Oxidizers Cell.** The acids and oxidizers cell is located at the northwest corner of the 305-B unit  
21 high bay floor. The cell is constructed of epoxy-painted concrete block walls 4' high and incorporates a 1' deep  
22 sump at the west end of the cell. Six cabinets, open shelving, and a large-container storage area are provided within  
23 the cell to store containers of recyclable materials and dangerous wastes. The secondary containment volume of  
24 the individual sump for this cell is 67 gallons, and the total containment volume of the cell is 774 gallons. Storage  
25 capacity of the cell is limited by the UBC to not more than, 6000 cubic feet of oxidizing gases, 1000 lbs of  
26 ammonium nitrate and ammonium nitrate mixtures, and 500 lbs of solid oxidizers. A diagram of the cell is provided  
27 in Figure 4-1.  
28

29 **4.1.1.6.2 Poisons and Class 9 Cell.** The poisons and Class 9 cell is located just south of the acids and oxidizers  
30 cell along the west wall of the high bay. This cell is also constructed of epoxy-painted concrete block walls 4' high  
31 and incorporates a 1' deep sump along its west end. Three storage cabinets and several sets of open shelving are  
32 positioned in the cell to allow storage of various sizes of containers. The northeast corner of the cell is sectioned off  
33 with a 6" spill retention berm to allow PCB storage for disposal complying with 40 CFR 761.65(b). The secondary  
34 containment volume of the individual sump for this cell is 117 gallons, and the total containment volume of the cell is  
35 782 gallons. Due to space limitations, no more than 800 gallons of liquid poisons and/or Class 9's will be stored at  
36 one time. There is no UBC restriction on storage of poisons or Class 9's at the 305-B unit. A diagram of this cell is  
37 provided in Figure 4-2.  
38

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



- 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.

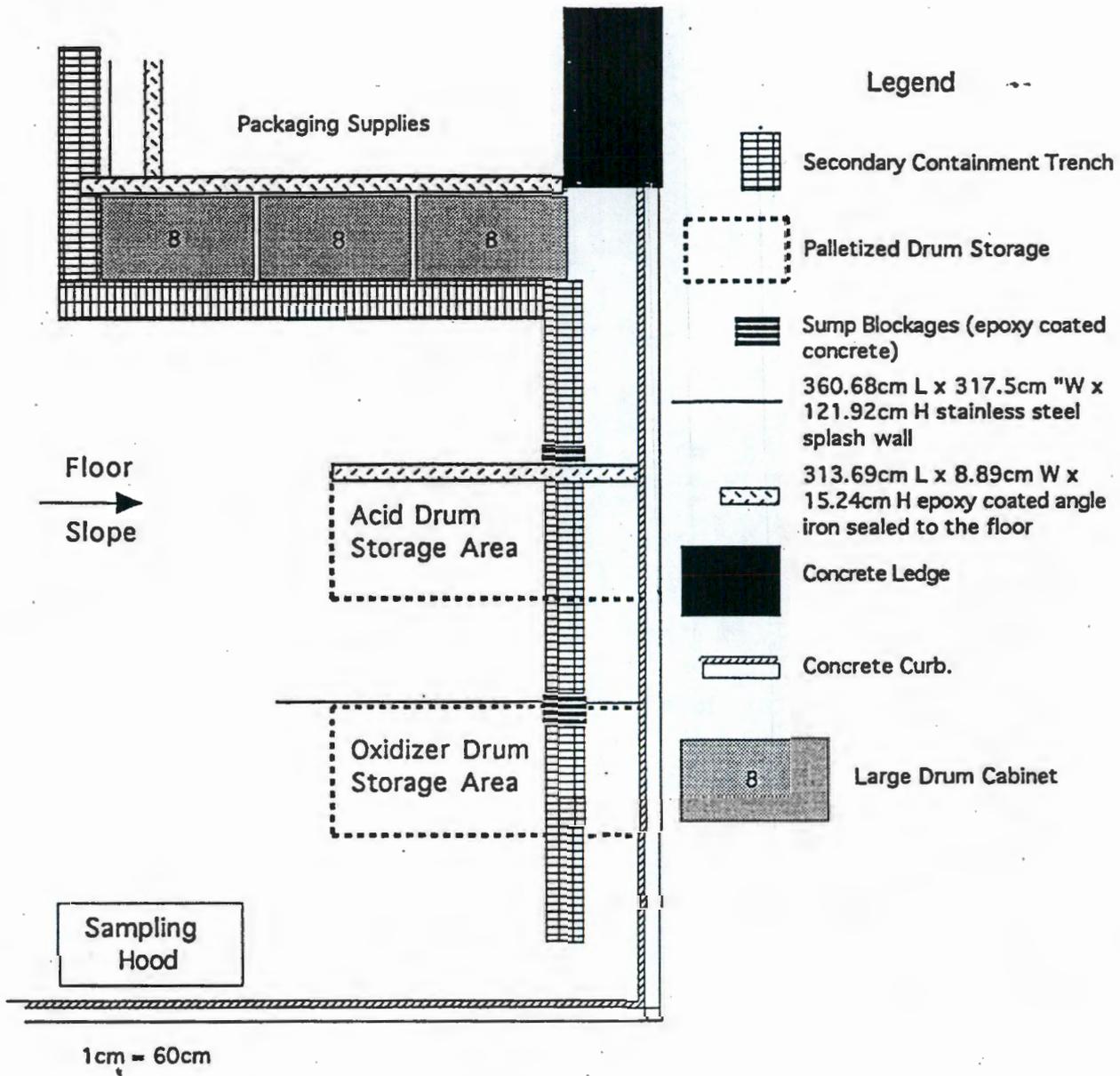
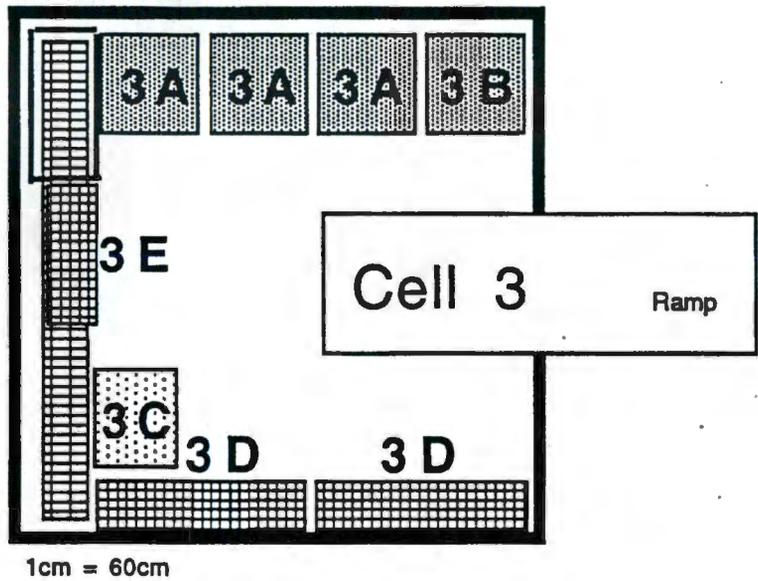


Figure 4-2. Poisons and Class 9 Cell.



- 3A Alkaline Solids/ Liquids (Large Cabinet)
- 3B Liquid Alkaline Oxidizers (Large Cabinet)
- 3C Organic Peroxides, Explosives, Temperature Sensitive (Refrigerator/Freezer)
- 3D Washington-Only Liquids / Solids (Large Shelf)
- 3E Non-Regulated Liquids / 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 4.1.1.6.4 Organics Cell. This cell is located south of the caustics, Washington-only waste, and non-regulated waste  
2 cell. As with the other three cells described above, this cell is constructed of epoxy-painted concrete block walls  
3 4' high and incorporates a 1' deep sump along its west end. The secondary containment volume of the individual  
4 sump for this cell is 119 gallons, and total containment volume of the cell is 687 gallons. A diagram of this cell is  
5 provided in Figure 4-4.  
6

7 Organic waste materials are stored in this cell unless they are non-ignitable and exhibit the characteristics of  
8 corrosivity or reactivity. Three Factory Mutual-approved flammable liquid storage cabinets are utilized for storage of  
9 various classes of flammable liquids as defined by the UFC. The capacities of the various cabinets are shown in  
10 Section 4.3.1. The following cabinets also are used for storage in this cell: one for combustibles, one for aerosols,  
11 two for flammable solids, and one for overflow from one of the other cabinets.  
12

13 Total ignitable Waste Storage capacity of the 305-B highbay, including the organics cell, Cell 5, Ignitable drum  
14 storage area, and highbay storage area is limited by the following UBC restrictions for Class B occupancy:  
15

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

26  
27 To maintain required aisle spaces and functional usability, the liquid capacity of the hydrocarbon cell is set at  
28 1000 gallons.  
29

30 4.1.1.6.5 Flammable Liquids Bulking Module. The flammable liquids bulking module, along with its purpose of  
31 providing a ventilated area for bulking of compatible hydrocarbon wastes, is used as an independent storage cell.  
32 Secondary containment is provided by the walls of the module, which have been sealed at the floor joint by use of  
33 grout coated with epoxy paint. Flammable gases in cylinders, liquefied flammable gases, and oxidizing gases will be  
34 stored in the bulking module. (Cell 5)  
35

36 Nontransient storage of flammable liquids in the module is 55 gallons. A diagram of the module is provided in  
37 Figure 4-5.  
38

39 4.1.1.6.5.a. Flammable Liquids Storage Module. The flammable liquids storage module is a self-contained storage  
40 module that allows additional storage space for flammable wastes. Located on the southeast wall, it is connected to  
41 the buildings fire suppression system. The flammable storage module has a 2-hour fire rated containment system  
42 so that according to the UFC, an unlimited capacity is allowed. However, the flammable waste storage capacity of  
43 the flammable liquid storage module is limited by the 240 gal capacity of the module's secondary containment  
44 system. No more than 240 gal of any combination of flammable liquid classes will be stored in the module. This  
45 flammable waste storage capacity is in addition to the flammable storage limits for the highbay. A diagram of the  
46 module is provided in Figure 4-10.  
47

4.1.1.6.6 Ignitable Waste Drum Storage Area. A section of the high bay has been dedicated to storage of drum quantities of ignitable waste prior to offsite shipment. The area is bordered on the north and south sides by angle iron (3½"x6") bolted to the floor (see Plate 2, Appendix 4A for detail) and sealed to provide secondary containment. The area is approximately 15'x7'. To further enhance containment and to allow greater storage capacity, the drums stored in this area are stored in flammable liquid drum storage cabinets.

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

4.1.1.6.7 Oxidizer Waste Drum Storage Area. A section of the high bay has been dedicated to 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 also 10'x7' 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 55 gallons and total containment capacity is approximately 255 gallons. Maximum storage in this area will be eight 55-gallon drums. A diagram of this area is included in Figure 4-6.

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 caustic 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 1 drum area, to prevent any possibility of a reaction with surrounding hazards in the high bay drum storage area.

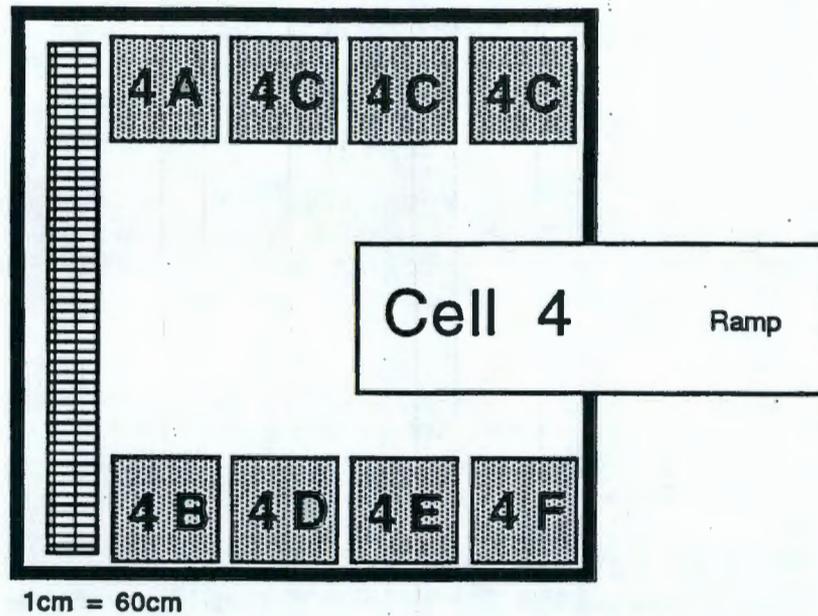
Sump containment capacity in this area is approximately 55 gallons and total containment capacity is approximately 335 gallons. Maximum storage in this area is eight 55-gallon drums. A diagram of this area is also included in Figure 4-6.

4.1.1.6.9 High Bay Storage Area. The high bay storage area, along with its partitioned areas mentioned above, is itself a secondary containment area for loading, unloading, and storage of dangerous wastes. The high bay floor is "crowned" in the center and sloped at ¼" per foot, with drainage to sumps on the east and west sides of the unit. Sump locations are indicated in Figure 4-7.

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

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

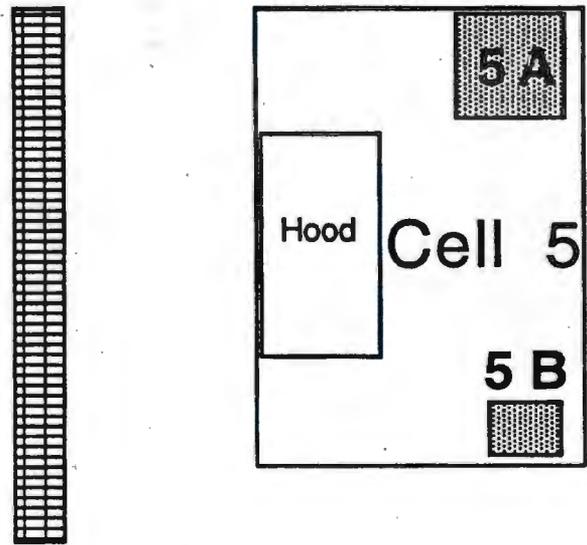
If wastes incompatible with the foregoing are stored in the high bay storage area, they are kept separated by at least ten feet of distance and stored in individual drip pans for segregation in case of simultaneous accidental spillage. Compatibility of the materials is determined prior to acceptance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



- 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)

-  15.24cm W x 127 H epoxy coated concrete block wall
-  Secondary Containment Trench

Figure 4-4. Organics Cell.



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).

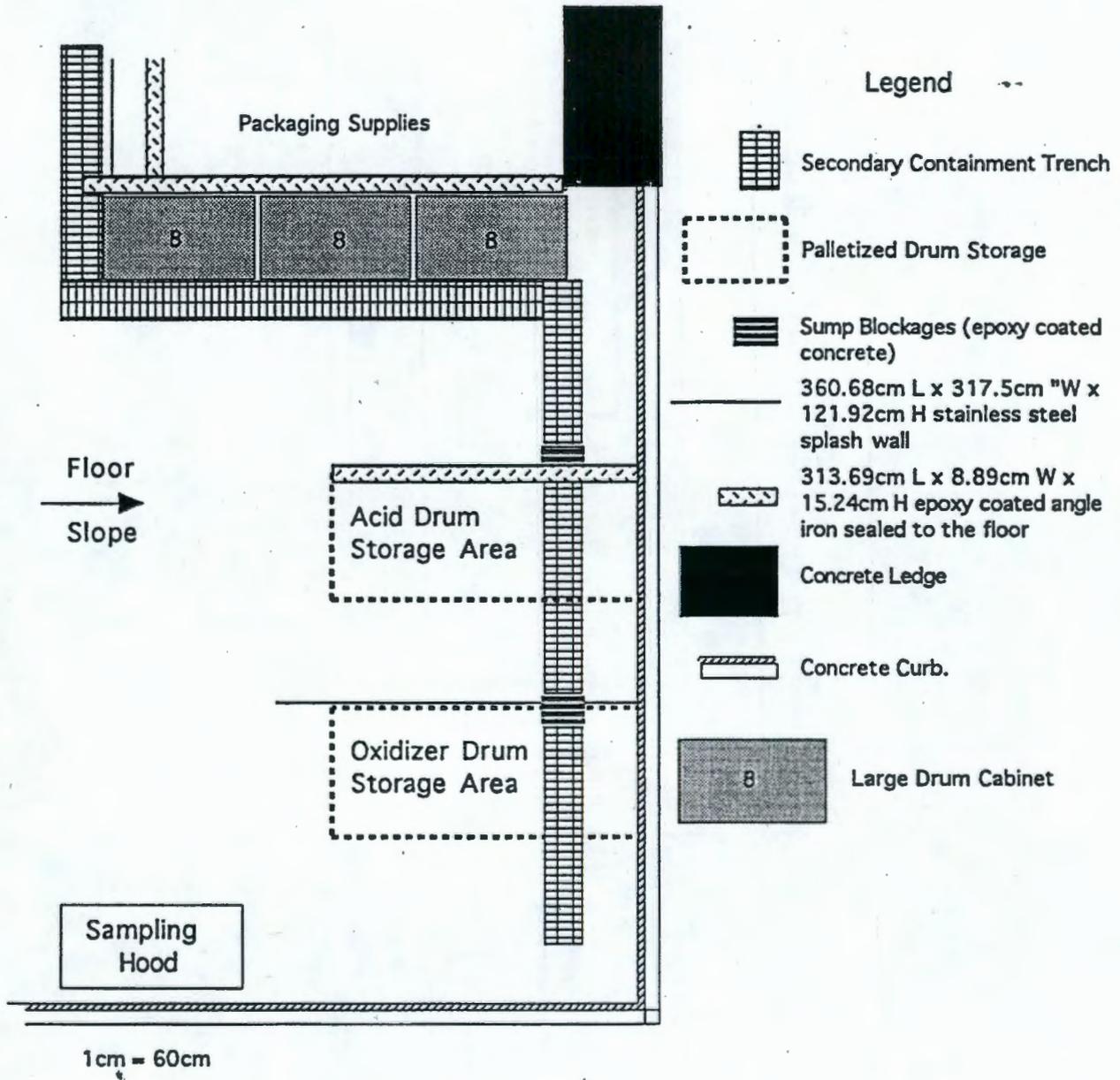
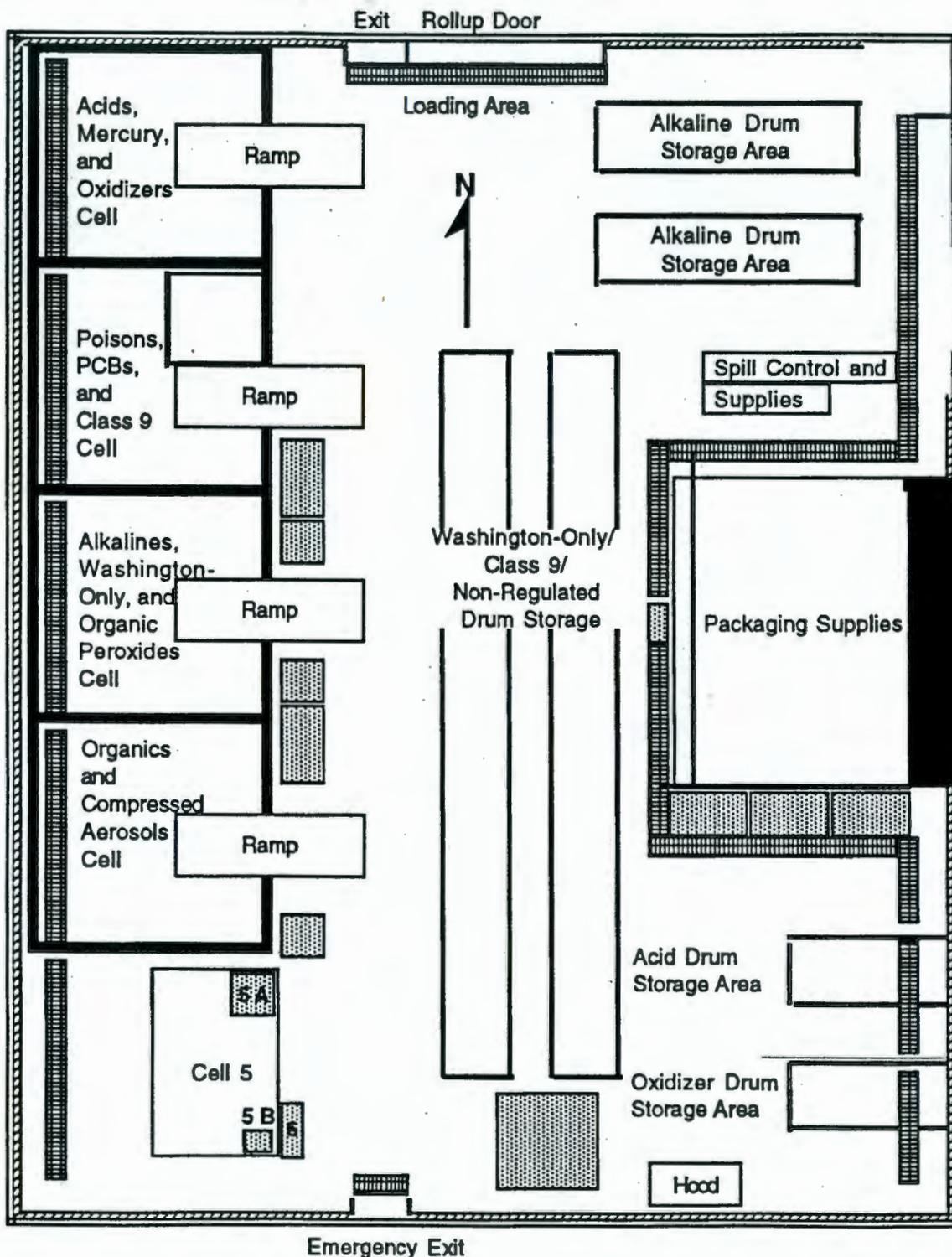


Figure 4-6. Segregated High Bay Drum Storage Areas.

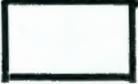


Legend: On next Page

Scale: 1cm = 120cm

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

**Legend: High Bay Storage Area Diagram**

-  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)

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

**4.1.1.6.10 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 2-3. 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. A diagram of this cell is provided in Figure 4-8.

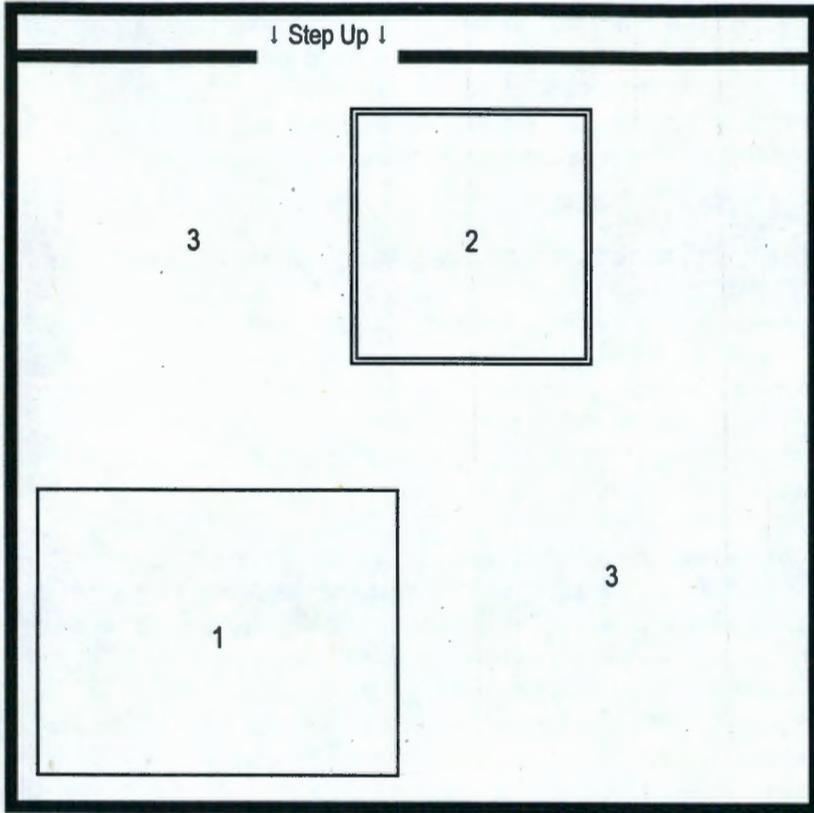
**4.1.1.6.11 RMW Storage Area.** Radioactive mixed waste that is not flammable per UFC (i.e., flash point above 100°F) is stored in a special area in the basement of 305-B. For additional segregation capability, there are seven small chemical storage cabinets and four 62" x 62" x 5.5" (157cm x 157cm x 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.

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

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

**4.1.1.7 Control of Run-On [D-1a(7)].** The 305-B Storage Unit was designed to eliminate the likelihood of on-site, or for that matter, off-site migration via run-on and run-off. The facility is completely enclosed (i.e., complete roof and no open walls) and has been constructed upon a foundation so that precipitation cannot cause either run-on or run-off problems.

**4.1.1.8 Removal of Liquids from Containment System [D-1a(8)].** Upon discovery of liquid accumulation in the containment resulting from a spill or other release, the BED must be contacted in accordance with the 305-B contingency plan (Chapter 7). The BED may determine that the contingency plan should be implemented. If the incident is minor, and the BED approves, removal of the liquids will commence immediately following a safety evaluation. Appropriate protective clothing and respiratory protection will be worn during removal activities; a PNNL industrial hygienist may be contacted to determine appropriate personnel protection requirements and any other safety requirements that may be required, such as chemical testing or air monitoring. In addition, ventilation of the spill-impacted area may be performed if determined to be safe and if appropriate monitoring of the air discharge(s) is performed.

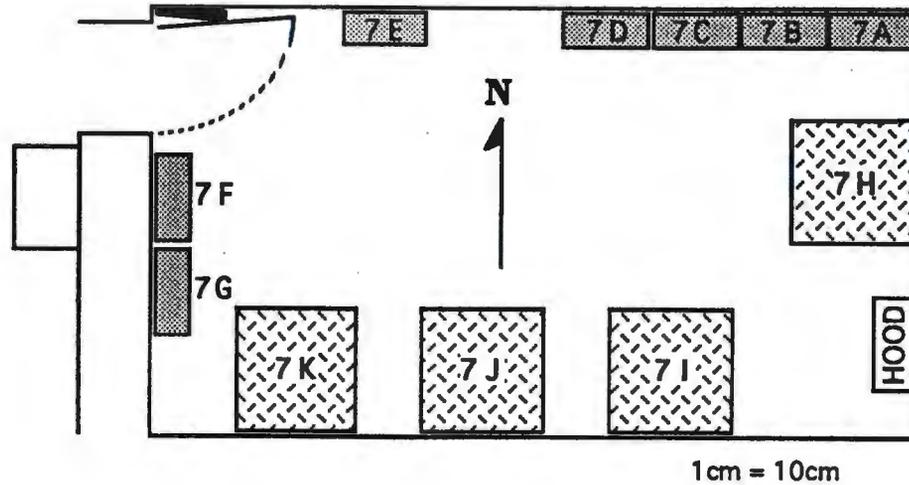


Scale: 1/4"=1" prox.

LEGEND

- 1 Flammable RMW Storage Module
- 2 Removable hatch cover for basement access (surrounded by railing)
- 3 Nonhazardous supplies storage

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



### Cell 7 Legend

**7A Poisons**

**7B Oxidizers**

**7C Class 9**

**7D Washington Only**

**7E Flammable Solids**

**7F Corrosive Base**

**7G Corrosive Acid**

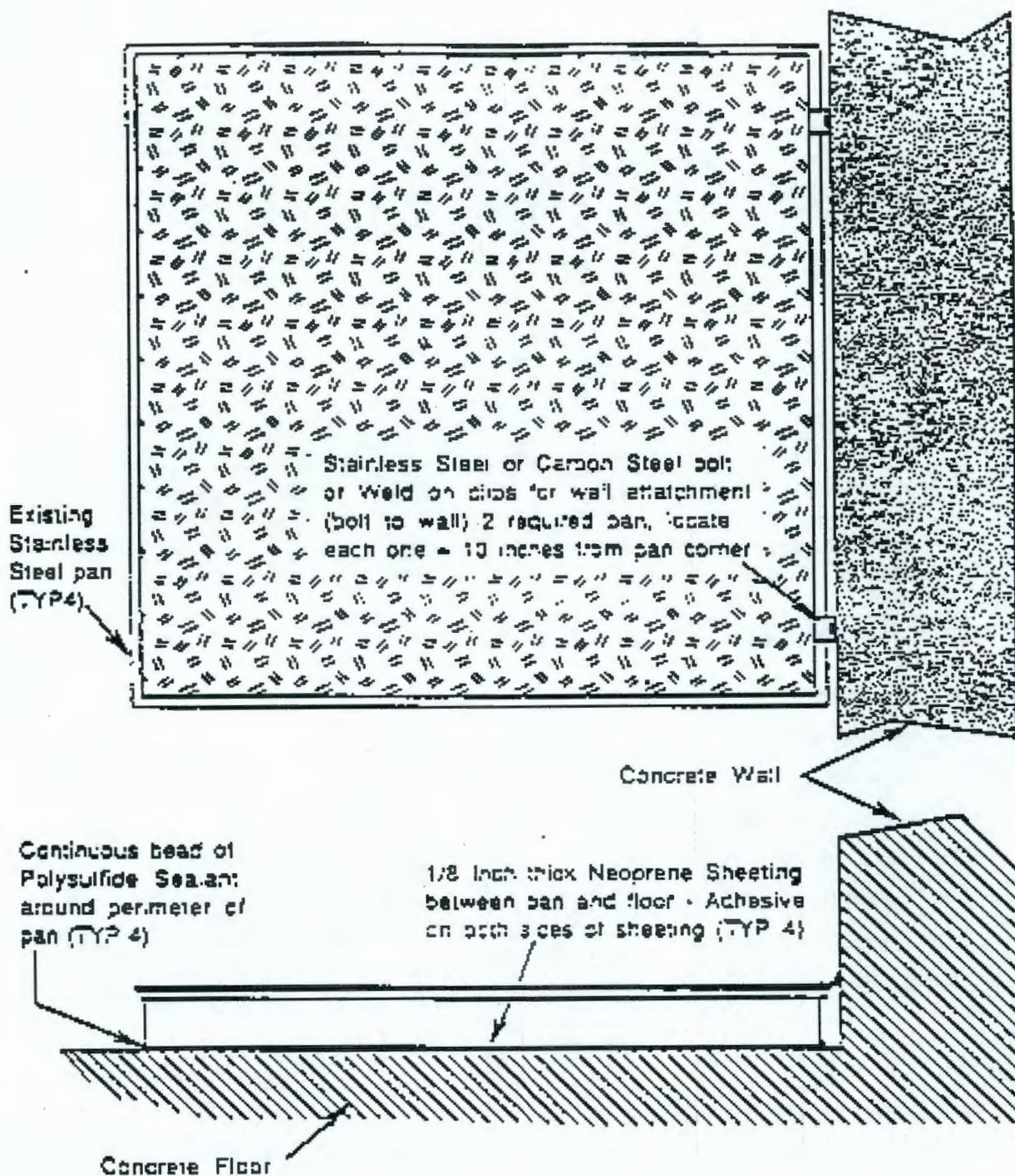
**7H Corrosive**

**7I Corrosive Acid**

**7J PCB's**

**7K Washington Only/Class 9**

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



## **PAN TOP & SIDE VIEW**

*Non Flammable RMW Cell Secondary Containment Pan Installation*

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

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Isotope	Category <sup>3</sup> Curies	Thresholds Grams	Isotope	Category <sup>3</sup> Curies	Thresholds Grams	Isotope	Category <sup>3</sup> 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:

$$\sum (X_i/Y_i) W \leq 1$$

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 Visick, and CR Richey. *General Safety Assessment Document for PNL-Maneasd Nonreactor Nuclear Facilities*. PNL-3280. Pacific Northwest Laboratory, Richland, WA, 1981.)

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

#### 13 14 **4.1.2 Containers Without Free Liquid That Do Not Exhibit Ignitability or Reactivity [D-1b].**

15  
16 This section is not applicable to 305-B because the storage area is used to store containers both with and without  
17 free liquids. 305-B does not meet the conditions for reduced requirements for storing only containers without free  
18 liquid; therefore, the facility is subject to the full requirements for containment.

#### 19 20 21 **4.2 PROTECTION OF EXTREMELY HAZARDOUS WASTE IN CONTAINERS [D-2]**

22  
23 All wastes are stored inside of 305-B, within the storage areas described in Section 4.1.1.6. These locations are  
24 completely enclosed from the weather, as described in Section 4.1.1.7, meeting the requirements of  
25 WAC 173-303-630(7)(d).

#### 26 27 28 **4.3 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES IN** 29 **CONTAINERS [D-3]**

30  
31 The following sections provide information on the management of ignitable, reactive, and incompatible waste in  
32 containers. Additional information on this subject can be found in Section 6.5.

#### 33 34 **4.3.1 Management of Ignitable or Reactive Wastes in Containers [D-3a]**

35  
36 Ignitable and reactive wastes are stored in compliance with Uniform Fire Code Division II regulations for Container  
37 and Portable Tank Storage Inside Buildings (International Conference of Building Officials 1988). Containers of  
38 ignitable and reactive waste are stored in individual flammable material storage cabinets within the storage cells.

#### 39 40 **4.3.2 Management of Incompatible Wastes in Containers [D-3b]**

41  
42 Section 6.5.2 describes procedures used at 305-B to determine the compatibility of dangerous wastes so that  
43 incompatible wastes are not stored together. Chemical wastes stored in 305-B are separated by compatibility,  
44 chemical makeup and hazard class and stored in areas having appropriate secondary containment, as described in  
45 Section 4.1.1.6.

46  
47 As shown in Figures 4-2 through 4-11, each storage area has individual storage configurations; secondary  
48 containment structures are provided to assure that incompatible materials will not commingle if spilled. Further  
49 segregation is provided by chemical storage cabinets located throughout the facility in various areas as shown in

2 Figures 4-2 through 4-11. Cabinet types are noted in those figures and capacities described in Table 4-2.  
3 Incompatible wastes are never placed in the same container, or in unwashed containers that previously held  
4 incompatible waste.

5 Compliance with WAC 173-303-395(1)(b) is assured utilizing the reactivity groupings given in *A Method for*  
6 *Determining the Compatibility of Hazardous Waste* (EPA 1980). Use of this system is described in "Procedures for  
7 Hazardous Waste and Radioactive Mixed Waste Management and Disposal at Pacific Northwest Laboratory." This  
8 internal procedure is part of the 305-B Operating Record, as required by WAC 173-303-395(1)(c).  
9

#### 10 4.3.3 Tank System [D-3c]

11 This section is not applicable to the 305-B Storage Unit because wastes are not managed in tanks.  
12

#### 13 4.3.4 Waste Piles [D-3d]

14 This section is not applicable to the 305-B Storage Unit because wastes are not managed in waste piles.  
15

#### 16 4.3.5 Surface Impoundments [D-3e]

17 This section is not applicable to the 305-B Storage Unit because wastes are not placed in surface impoundments.  
18

#### 19 4.3.6 Incinerators [D-3f]

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

#### 22 4.3.7 Landfills [D-3g]

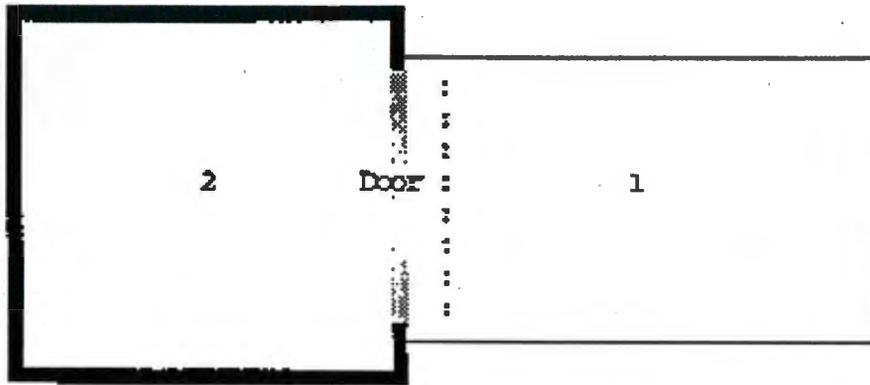
23 This section is not applicable to the 305-B Storage Unit because wastes are not placed in landfills.  
24  
25  
26  
27  
28

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

Storage Device	Typical Use	External Dimensions (in.)	Capacity (gal.)
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.

#### 4.3.8 Land Treatment [D-3h]

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



- 1 LEGEND  
2  
3 1 Loading Ramp  
4 2 Drum/Container Storage Area (Flammable liquid storage, 240 gallon max.)

Figure 4-11. Flammable Liquids Storage Module.

1  
2  
3  
4  
5

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**PART III CLASS 1 MODIFICATIONS:**  
**305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS (continued)**

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Replacement Chapter for DOE-RL-90-01, Rev. 1

*Chapter 6.0, Rev. 1A*

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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. One maintenance worker, who only enters the office areas, also is issued a key. 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.

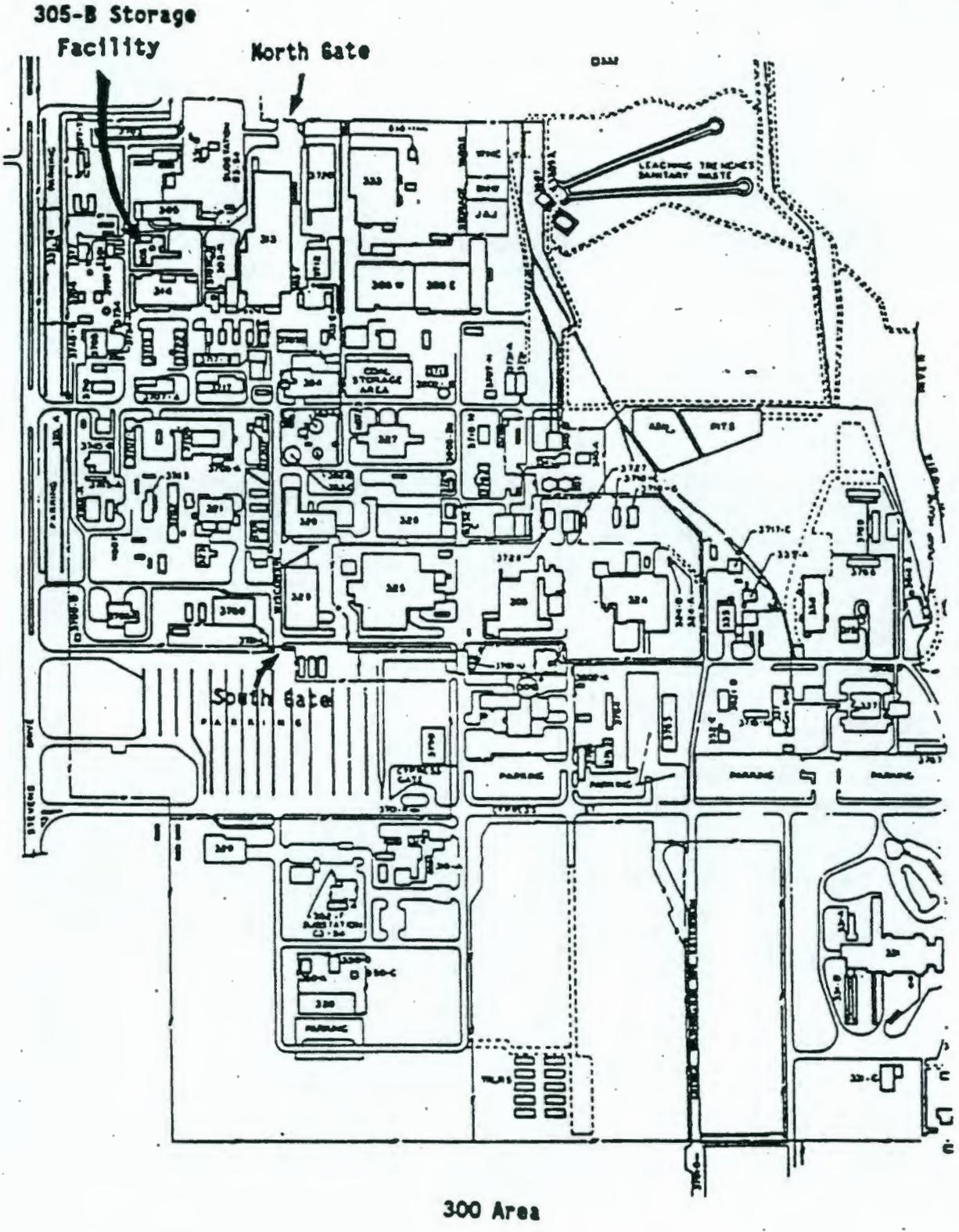


Figure 6-1. Normal Site Access - Entrance at the Southern End of Wisconsin Avenue and the North End of the 300 Area.

1  
2

1 **6.1.1.2 Barrier and Means to Control Entry [F-1a(2)(a), (2)(b)].** The entire 300 Area is surrounded by an 8-ft  
2 chain link fence topped with three strands of barbed wire. There is no separate fence surrounding the 305-B unit.  
3 All waste management activities, however, are conducted within the unit. The facility itself, therefore, provides a  
4 barrier completely surrounding the active 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 at all times  
7 except when in use. Physical control of keys and records of key distributions are maintained by PNNL Security.  
8 Distribution of keys to 305-B is subject to approval by the manager of the waste management organization, the  
9 building manager, and the facility operating supervisor, and a list of those personnel in possession of keys is kept in  
10 the Operating Record for 305-B. Personnel in possession of keys have been instructed to admit only persons  
11 having official business. All visitors to the unit must be escorted by waste management organization personnel.  
12

13 **6.1.1.3 Warning Signs [F-1a(3)].** The 305-B Storage Unit is posted with "DANGER - UNAUTHORIZED  
14 PERSONNEL KEEP OUT" and "305-B CHEMICAL WASTE STORAGE BUILDING" signs near each entrance on all  
15 sides of the unit. The signs are clearly visible from the required distance of 25 ft.  
16

#### 17 **6.1.2 Waiver [F-1b(1), (2)]**

18  
19 Waivers of the security procedures and equipment requirements for 305-B are not required and will not be  
20 requested.  
21

## 22 **6.2 INSPECTION SCHEDULE [F-2]**

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

### 28 **6.2.1 General Inspection Requirements [F-2a]**

29 The content and frequency of inspections performed at 305-B are described in this section. Also, described is  
30 maintenance of inspection records.  
31

32 **6.2.1.1 Types of Problems [F-2a(1)].** Daily, weekly, monthly, quarterly, once every four months, and annual  
33 inspections are performed at 305-B. The types of problems addressed by each of these inspections are described  
34 below.  
35

36 Daily Inspections. The 305-B Storage Unit is inspected daily whenever waste packaging, transfer, shipping, or  
37 movement operations are being carried out. Daily inspections monitor container condition and integrity, the building  
38 waste containment system, and other building areas where wastes are handled. Specific inspection points include:  
39

- 40 • Inspection of stored containers for leaks or damage
- 41 • Mislabeled or opened containers
- 42 • Improper storage (e.g., incompatible waste storage)
- 43 • Disorderliness or uncleanness of a storage unit
- 44 • Check for accumulation of wastes in containment systems

45 Results of these daily inspections are recorded in the daily operating logbook, which is part of the permanent 305-B  
46 Operating Record.  
47  
48  
49

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

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

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

33 Quarterly, Once Every Four Months, and Annual Inspections. In addition to the several layers of management  
34 inspection of 305-B, safety inspections are performed to assure the fire protection system, eye wash/shower unit,  
35 and walk-in hood ventilation system are in working order. The Hanford 300 Area Fire Department performs "once  
36 every four months" an inspection of fire suppressant and notification systems (i.e., sprinkler system and pull boxes).  
37 This inspection includes flow tests of the sprinklers to assure no blockage in the system lines as well as activation of  
38 the alarm system to assure proper operation of pull boxes. On an annual basis, the Fire Department performs a full  
39 inspection of the sprinkler system, heat detectors, and pull boxes. A complete flow test is performed from the  
40 furthest valve to assure flow through the entire system. Fire extinguishers are also checked for proper pressure and  
41 function. Records of these fire inspections and their results are kept by the Hanford Fire Department.  
42 Documentation of any required corrective actions is kept in the 305-B Operating Record.  
43

**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: \_\_\_\_\_

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 9 Non-Reg. Drums	12 Oxidizer Drums	13 Acid Drums	14 Alkaline Drums
container integrity good?	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
containers properly sealed?	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
containers properly 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, UBC 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)

Class I Modification:  
Quarter Ending 03/31/97

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

9 **6.2.1.2 Frequency of Inspections [F-2a(2)].** Inspections are conducted on a daily, weekly, monthly, quarterly, and  
10 annual basis, as described in Section 6.2.1.1. The frequency of inspections is based on specific regulatory  
11 requirements and on the rate of possible deterioration of equipment and probability of environmental or human  
12 health incidents.  
13

14 Areas where dangerous and mixed wastes are actively handled, including the high bay area, storage cells, and  
15 flammable liquid bulking module, are considered to be areas subject to spills. These areas are given daily  
16 inspections when in use, as required by WAC 173-303-320(2)(c).  
17

18 The containment system (i.e., floors and sumps) is inspected daily when in use for accumulation of spilled material.  
19 The containment system itself is inspected weekly for structural integrity, (i.e., no cracks, gaps, leaks, etc. which  
20 could result in environmental release of wastes in the event of a spill). This frequency is based on the need to  
21 perform timely corrective actions in the event that problems are noted.  
22

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

26 Emergency and safety equipment and personal protective equipment is inspected weekly. This frequency is based  
27 on consideration of the expected rate of use of this equipment. Use of emergency equipment should not occur more  
28 than once during any one-week period. Weekly inspections will assure that this equipment is always functional and  
29 available in adequate supply.  
30

### 31 **6.2.2 Specific Process Inspection Requirements [F-2b]**

32 The following sections detail the inspections to be performed at the 305-B Storage Unit.  
33

34 **6.2.2.1 Container Inspection [F-2b(1)].** Dangerous and mixed waste containers stored at 305-B are inspected  
35 daily for leakage, evidence of damage or deterioration, proper and legible labeling, and proper lid and bung closure.  
36 The containment system is also checked on a daily basis for accumulation of any wastes which may have been  
37 spilled into them. Structural integrity of the containment systems is checked on a weekly basis.  
38

39 Daily and weekly inspections are performed and documented in accordance with Section 6.2.1.1. Specific  
40 inspection items are enumerated in Section 6.2.1.1 in association with the inspection description and frequency.  
41 Response to problems, and documentation of corrective actions are as described in Section 6.2.1.1.  
42

43 **6.2.2.2 Tank Inspection [F-2b(2)].** This section does not apply to the 305-B Storage Unit because wastes are not  
44 stored or treated in tanks.  
45

46 **6.2.2.3 Waste Pile Inspection [F-2b(3)].** This section does not apply to the 305-B Storage Unit because wastes  
47 are not placed in waste piles.  
48  
49

**305-B MONTHLY MANAGEMENT INSPECTION CHECKLIST**

Date/Time \_\_\_\_\_ Inspector (Print/Sign) \_\_\_\_\_

	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.

Figure 6-3. Monthly Inspection Checklist Form.

4 **6.2.2.4 Surface Impoundment Inspection [F-2b(4)].** This section does not apply to the 305-B Storage Unit  
because wastes are not placed in surface impoundments.

5 **6.2.2.5 Incinerator Inspection [F-2b(5)].** This section does not apply to the 305-B Storage Unit because wastes  
are not incinerated.

6 **6.2.2.6 Landfill Inspection [F-2b(6)].** This section does not apply to the 305-B Storage Unit because wastes are  
not placed in landfills.

7 **6.2.2.7 Land Treatment Facility Inspection [F-2b(7)].** This section does not apply to the 305-B Storage Unit  
because wastes are not treated in land treatment units.

### 10 **6.3 WAIVER OR DOCUMENTATION OF PREPAREDNESS AND PREVENTION REQUIREMENTS [F-3]**

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

#### 12 **6.3.1 Equipment Requirements [F-3a]**

13 The following sections describe the internal and external communications and emergency equipment in use at  
14 305-B.

15 **6.3.1.1 Internal Communications [F-3a(1)].** Internal communication systems are used to provide immediate  
16 emergency instruction to personnel in 305-B. Internal communications address general emergencies which may  
17 occur in the 300 Area as well as specific emergencies which may occur in 305-B.

18 Because of the nature of activities which occur in the 300 Area, the potential exists for emergencies outside of 305-B  
19 (e.g., release of radioactive materials) which could impact operations and staff in 305-B. For this reason, the general  
20 emergency signals for the 300 Area are applicable to 305-B. These signals are summarized in Table 6-1. Fire  
21 alarm signals are located in each building throughout the 300 Area. The nearest emergency siren for "area  
22 evacuation" and "take cover" is located 300 yards southeast of 305-B, on top of the 326 Building, and is audible in all  
23 parts of 305-B. Because fissile materials are not handled in 305-B, there is no criticality alarm for the unit.

24 Internal communications to provide emergency instruction in the event of an emergency in 305-B are fire alarms,  
25 public address (PA) system, and telephones. The fire alarms are to be used to provide notification for immediate  
26 evacuation of 305-B. Fire alarm pull boxes are located at all exits of the facility such that operating personnel have  
27 immediate access to one in all portions of 305-B. Four fire alarm bells are located within the 305-B and are audible  
28 at all locations within the building. The locations of the fire alarm bells are shown in Figure 6-4 and are as follows:  
29 (1) an office wing on the northeast hall; (2) an office wing next to the east entrance; (3) on the south wall of the  
30 basement; and (4) on the northwest wall of the high bay. The PA system is to be used for building-wide  
31 broadcasting of verbal emergency instructions to 305-B staff. The PA system can be accessed from any unit  
32 telephone by dialing 6-1885. The PA system speakers are located in the high bay, in the basement, and in the office  
33 wing of 305-B.

34 The telephone system is to be used to provide verbal emergency instructions to 305-B staff. The telephone can also  
35 be used to verbally transmit emergency data to non-305-B staff, and to request emergency services. A network of  
36 telephones covers both floors of the facility. Locations of telephones are shown in Figure 6-4. In addition to the  
37 telephone communication system at 305-B, operating personnel have access to eight hand-held radios, six inside  
38 the storage facility and one in each of two vehicles assigned to the facility. All of the radios transmit at the same  
39 frequency, and are capable of summoning PNNL's security control room in case of an emergency.

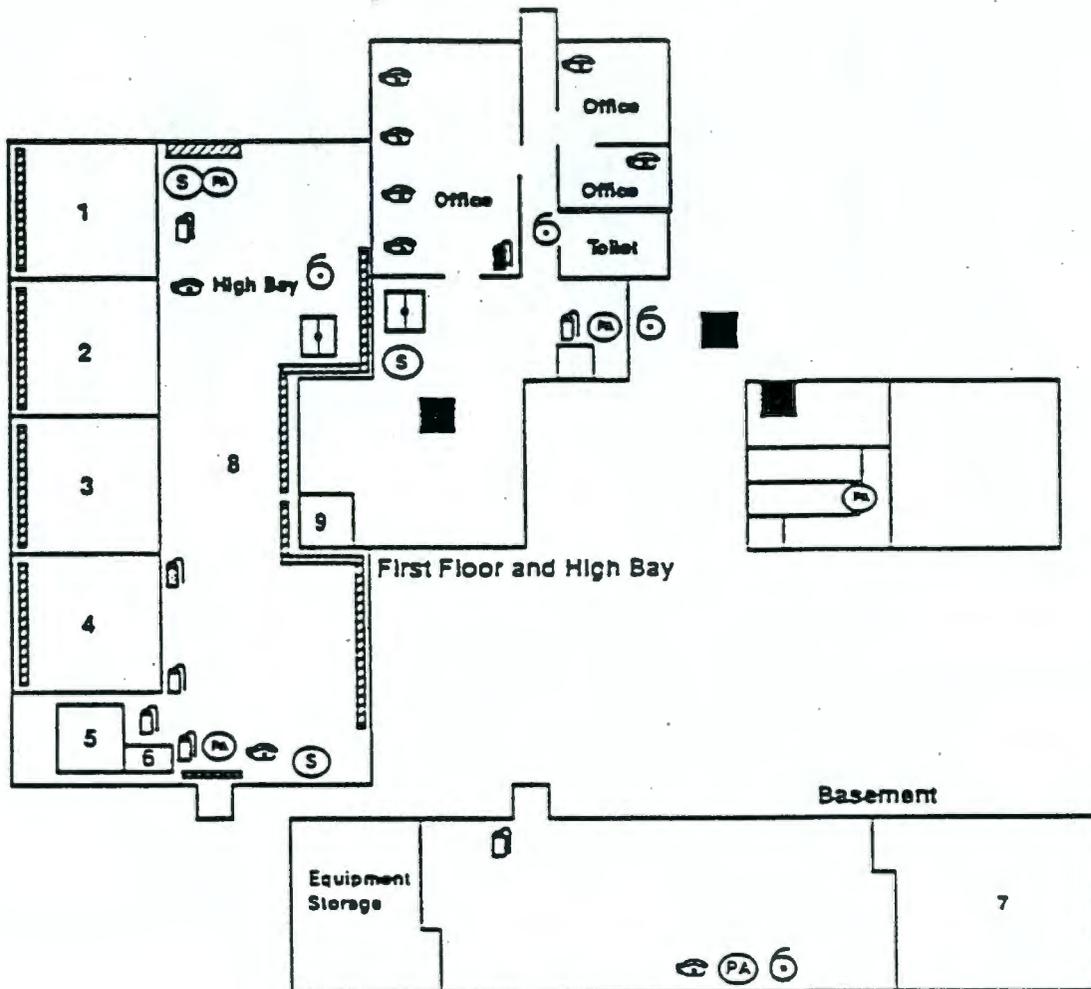
Table 6-1. Emergency Signals and Responses		
Signal	Meaning	Response
Gong	Fire	Evacuate building. Move upwind. Keep clear of emergency vehicles.
Siren - steady 3-5 minute blast	Area Evacuation	Proceed promptly to north parking area. Stand by to follow instructions from emergency director.
Wavering Siren	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		

**6.3.1.2 External Communications [F-3a(2)].** As mentioned in Section 6.3.1.1 above, both a fire alarm system and telephone network system are in place at 305-B. Both systems can be used to summon emergency assistance. The fire alarm system summons direct response from the Hanford Fire Department's 300 Area Station. The telephone system can be used to access Hanford's Emergency Network directly at 375-2400 or by dialing the emergency number, 811. Locations of fire alarm pull boxes and telephones are given in Figure 6-4.

**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 portable 10-lb ABC fire extinguishers, one 15-lb Class D fire extinguisher for combustible metals, and two 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. The 15-lb class D extinguisher is located on the exterior of the organics cell wall south of the entrance. The two 14-lb Halon fire extinguishers are located in the office area.

The facility is also equipped with an automatic fire suppression system consisting of galvanized steel, schedule 40 per ASTM A120 pipe and 150-lb malleable iron per ANSI B16.3 fittings. All components are UL-listed or FM-approved, and installation of the fire sprinkler system has been conducted in accordance with NFPA 13 for ordinary hazard. Spill cleanup supplies and equipment maintained are summarized in Table 6-2. Two emergency eye wash/showers are available for emergency personnel decontamination. The locations of the emergency eye wash/showers are shown in Figure 6-4. If needed, additional emergency equipment can be provided by the Hanford Fire Department. Emergency equipment available through the Hanford Fire Department for hazardous materials response is identified in Appendix 6A.

**6.3.1.4 Water for Fire Control [F-3a(4)].** Adequate water volume and pressure are supplied by the large diameter line which services 305-B for potable use and fire protection. Three fire hydrants are located in immediate proximity to serve the 305-B facility: (1) 80 ft directly north of the northwest corner of 305-B; (2) 40 ft directly south of the southwest corner of 305-B; and (3) 60 ft directly east of the southeast corner of 305-B. In addition, the Hanford Fire Department's 300 Area Station is located within 0.25 mile of 305-B.



**Legend**

- 1. Acids, Oxidizers
- 2. Poisons, Class 9's
- 3. Alkalines, WSDW, Organic Peroxides
- 4. Organics and Compressed Aerosols
- 5. Liquid Bulking Module
- 6. Asbestos Cabinet
- 7. RMW Storage Cell
- 8. High Bay Floor Storage
- 9. Small Quantity Flammable RMW

- (S) Safety Shower/Eyewash
- ☎ Phone
- (B) Fire Alarm Bell
- (PB) Fire Alarm Pull Box
- 🔥 14 lb Halon Fire Extinguisher
- 🔥 10 lb ABC Fire Extinguisher
- 🔥 15 lb Class D Fire Extinguisher
- Removable Access to Basement
- 🚪 Emergency Equipment Cabinet
- ▨ Collection Sumps

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

**6.3.2 Aisle Space Requirements [F-3b]**

Containers stored in the 305-B unit are placed to provide aisle space clearance in accordance with WAC 173-303-340(3) and applicable standards of the Uniform Building Code and Life Safety Code. The proper maintenance of aisle space is inspected weekly and noted on the weekly inspection checklist (Figure 6-2).

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

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

**6.4.1 Unloading Operations [F-4a]**

Procedures have been developed at 305-B to prevent hazards and minimize the potential for breakage, punctures, or the accidental opening of containers during waste unloading. All waste unloading is performed inside the 305-B Storage Unit. The large bay door is opened and the appropriate transporting vehicle (usually a pickup truck) is driven inside. As described in Section 4.1.1.3, the unloading area has secondary containment. By unloading all wastes inside the fully-contained facility, spills during unloading operations will be contained. Procedures for unloading and transferring wastes to storage areas have been designed to minimize hazards. All wastes are inspected prior to shipment to 305-B to ensure that they are in appropriate containers and that the containers are in good condition. Inspection of containers prior to acceptance at 305-B minimizes the potential for spills during unloading operations. The potential for spills during waste handling is minimized through the use of appropriate container handling equipment. Large waste items such as drums of nonflammable RMW are lowered into the basement of the facility for storage using an overhead crane or winch assembly. The containers are immediately transported, via a hand lift, into the concrete lined storage vault. Forklifts may also be used to unload heavy waste items. Small waste items can be unloaded by hand. Each small waste item is removed from the secondary containment unit in which it was transported (i.e., plastic storage tub) and placed in the appropriate storage location.

Materials/Equipment	Quantity	Purpose	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.

Table 6-2. Material and Equipment for Spill Containment and Cleanup

#### 6.4.2 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.

#### 6.4.3 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.

#### 6.4.4 Equipment and Power Failure [F-4d]

The 305-B Storage Unit does not have any systems which would cause release of dangerous waste or RMW during a power failure or equipment failure. Interruption of power to any of the systems utilizing electrical power (HVAC system, crane, forklift) merely causes the equipment to stop operating. The unit has an emergency lighting system which operates automatically during power failure incidents.

For actions to be taken in the event of power failure to unit systems or equipment, see the unit Contingency Plan (Section 7).

#### 6.4.5 Personnel Protection Equipment [F-4e]

Protective clothing and equipment are provided to employees during normal and emergency operations. During routine operations, the maximum number of employees working in the 305-B unit is less than ten. For dry chemical handling activities, such as labpacking, the minimum protection requirement is eye protection (safety glasses with side shields or chemical goggles), lab coat, and chemical resistant gloves (plastic or other construction as appropriate). Protection levels for other operations, such as bulking, and emergency situations are determined in consultation with a PNNL industrial hygienist, and staffing levels are revised according to the availability of proper protective equipment as shown below. Protective clothing and equipment available in the 305-B Storage Unit includes:

- 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.

This protective equipment is stored in cabinets located outside of the operating area east entrance and is well stocked at all times. The location of the storage cabinets is given in Figure 6-4. This equipment is periodically replaced as it is used. The above inventory reflects the quantities of each type of PPE that are typically present at 305-B. Minimum quantities required to be present are given in the weekly inspection checklist, Figure 6-2.

1 **6.5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTES [F-5]**  
2

3 The following sections describe prevention of reaction of ignitable, reactive, and incompatible waste.  
4

5 **6.5.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste [F-5a]**  
6

7 305-B may be used to store a variety of ignitable wastes. Precautions to prevent ignition of ignitable wastes involve  
8 separation of wastes from sources of ignition and use of procedures which minimize the potential for accidental  
9 ignition. There are no routine sources of ignition or open flame in 305-B. Work with ignition or heat sources, if  
10 required, is limited and controlled by PNNL management and is performed in compliance with internal PNNL health  
11 and safety procedures for elimination of ignition sources. These internal procedures:

- 12 • Prohibit use of open flame equipment when working with flammable liquids
- 13 • Prohibit smoking around flammable liquids [No smoking is allowed at 305-B]
- 14 • Require electrical equipment used in flammable or explosive atmospheres to comply with the National  
15 Electrical Code, NFPA 70
- 16 • Require use of equipment with automatic, adjustable temperature controls and high-temperature limit  
17 switches to prevent overheating
- 18 • Prohibit placement of flammable liquids on hot surfaces
- 19 • Require all static electricity sources to be grounded in areas where ignitable vapors may be present
- 20 • Require bonding of conductive containers when transferring flammable liquids.
- 21 • Require use of non-sparking tools in flammable waste storage areas
- 22

23 All maintenance or modifications that require work with ignition sources must receive prior approval by a PNNL  
24 Safety Engineer. This approval is documented in the Operating Record. Smoking is not allowed in 305-B at any  
25 time and the interior and exterior of the facility are clearly posted with "No Smoking" signs. Waste storage areas are  
26 not heated by any radiant heat source. All tools used to open ignitable waste containers are constructed of  
27 nonsparking materials.  
28

29 Ignitable waste storage areas are inspected annually by a PNNL fire safety engineer familiar with the Uniform Fire  
30 Code. This inspection is documented in the Operating Record. There are also storage restrictions at 305-B for  
31 combustible wastes as part of fire safety requirements. The storage restrictions defined in the Uniform Building  
32 Code for Class B Occupancy apply to 305-B (International Conference of Building Officials 1988). These restrictions  
33 are given in Table 4-1. The weekly inspection for 305-B includes checking to see if the inventory of combustibles is  
34 below these limits. These inspections are documented in the Operating Record.  
35

36 **6.5.2 General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste [F-5b]**  
37

38 As described in Section 6.5.1, ignitable wastes are managed in a manner which protects the wastes from sources of  
39 ignition or open flame. Ignitable waste containers are maintained in good condition and inspected weekly to  
40 minimize the potential for releases which could result in fire. Containers of ignitable waste are protected from high  
41 temperature to prevent the potential for pressurization and buildup of ignitable vapors. Containers of ignitable waste  
42 are stored in flammable material storage cabinets within waste storage cells, as described in Section 4.1.1.6.  
43 Limitations on sizes of containers and amounts of storage in cabinets are found in Section 4.3.1.  
44

1 Because of the wide variety of wastes which may be accepted at 305-B, the potential exists for storage of  
2 incompatible wastes. Mixing of incompatible wastes is prevented through waste segregation and storage  
3 procedures. Chemical wastes stored in 305-B are separated by compatibility and hazard class and stored in  
4 separate storage cells. Separate storage shelves and cabinets are used within the storage cells, as described in  
5 Section 4.1.1.6, to provide further waste segregation. Prior to accepting unfamiliar wastes from generators, waste  
6 management organization staff determine the Reactivity Group Number as per *A Method for Determining the*  
7 *Compatibility of Hazardous Wastes* (EPA 1980) for each waste so that wastes may be stored with compatible  
8 materials. The following general guidance is used to segregate and separate chemicals:  
9

- 10 • Store acids on a low storage shelf or in acid storage cabinets.
- 11 • Separate acids from bases and alkaline metals such as potassium or sodium
- 12 • Separate oxidizing acids from organic acids and flammable or combustible materials
- 13 • Store bases away from acids and store solutions of inorganic hydroxides in polyethylene containers
- 14 • Store oxidizers away from flammable or combustible materials and reducing agents such as zinc, alkaline  
15 metals, and formic acid
- 16 • Store peroxide-forming chemicals in airtight containers in a dark, cool, and dry place (inside of cabinets)
- 17 • Store flammable materials in approved containers or cabinets
- 18 • Separate flammable materials from oxidizing acids and oxidizers and keep them away from sources of ignition
- 19 • Clearly mark cabinets to identify the hazards associated with their contents.

20  
21 The potential for waste ignition or reaction at 305-B is also minimized through storage restrictions on hazardous  
22 material quantities. The storage restrictions defined in the Uniform Building Code for Class B Occupancy apply to  
23 305-B (International Conference of Building Officials 1988). These restrictions are given in Table 4-1. The weekly  
24 inspection of 305-B includes checking to see if waste inventories are below these limits. These inspections are  
25 documented in the Operating Record.  
26

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**PART III CLASS 1 MODIFICATIONS:**  
**305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS (continued)**

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Replacement Chapter for DOE-RL-90-01, Rev. 1

*Chapter 7.0, Rev. 1A*

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03/31/97

**FACILITY CONTINGENCY PLAN  
AND  
BUILDING EMERGENCY PROCEDURE**

**305-B STORAGE UNIT**

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## 7.0 CONTINGENCY PLAN [G]

The information contained in this chapter is the unit contingency plan, as required under WAC 173-303-806(4)(a)(vii). This chapter is also the Building Emergency Plan (BEP) as required under the DOE-RL Site Emergency Plan (revised 4/90) and PNNL procedure PNL-MA-11. It supersedes all previous contingency plans and BEPs. It is to be maintained in the locations shown in Section 7.9 of this plan.

A building emergency plan (BEP) is required under the DOE-RL Emergency Plan for each building on the Hanford Site. This Contingency Plan has been designed to meet the requirements for a BEP as well as the Ecology requirements for a contingency plan for the 305-B unit. The Site Emergency Plan details the membership of the Emergency Action Coordinating Team (EACT) mentioned in Section 7.3 and following sections, and the procedure for notifying and mobilizing the team.

This plan provides for the safety of employees, other contractor personnel, visitors, and members of the general public in the event of an emergency. It also is designed to minimize hazards resulting from fires, explosions, or any other unplanned sudden or non-sudden release of dangerous waste or dangerous waste constituents to air, soil, or water. The provisions of the plan will be carried out immediately whenever there is a fire, explosion, or release of dangerous waste or dangerous waste constituents which could threaten human health or the environment.

DOE-RL or PNNL shall review and immediately amend, if necessary, this plan whenever:

- Applicable regulations or the facility permit are revised;
- The plan fails in an emergency;
- The facility changes (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increases the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or in any way that changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

Amendments to the plan, if necessary following review, will be made in accordance with Section 1.5 of the 305-B Part B permit application.

### 7.1 GENERAL INFORMATION [G-1]

The 305-B Storage Unit is a dangerous and radioactive mixed waste storage facility located in the 300 Area of the Hanford Site. The unit is owned and operated by DOE-RL and co-operated by PNNL. It is used for the collection, consolidation, and packaging of containerized dangerous and radioactive mixed waste. Typically, 305-B handles various types of small volume wastes from research laboratory activities. A more detailed description of 305-B activities is located in Chapter 2.

### 7.2 EMERGENCY COORDINATORS [G-2]

The overall responsibility for implementation of this Plan lies with the Building Emergency Director (BED) or the designated alternates. The BED has the responsibilities of the Emergency Coordinator as named in WAC 173-303-360. The BED and alternates are on call 24 hours per day and have the authority to commit all necessary resources (both equipment and personnel) to respond to any facility emergency.

3 Response by an emergency coordinator is usually obtained through the PNNL Single Point Contact at  
4 (509) 375-2400. The Single Point Contact has been designated as the contact point to mobilize a response to any  
5 PNNL emergency on the Hanford Site. The Single Point Contact is available at all times and has the responsibility  
6 to contact the BED or alternate to begin responses to emergencies under this plan.

7 Due to the security requirements at the Hanford Site, DOE-RL does not submit names or phone numbers of  
8 personnel acting as emergency contacts as part of permit applications or other public documents. All emergency  
9 notifications to the BED, building managers, etc. are made through the PNNL Single Point Contact. The names and  
10 work phone numbers of the 305-B Emergency Coordinator(s) shall be submitted to the Department and the Agency  
11 and kept at the Single Point contact and with the contingency plan at the 305-B Unit.

### 12 7.3 IMPLEMENTATION OF THE CONTINGENCY PLAN [G-3]

13  
14 The decision by the BED or alternate to implement this Plan depends on whether an incident in progress may  
15 threaten human health or the environment. Immediately after being notified of an emergency, the BED or alternate  
16 will go to the site and evaluate the situation. Based on evaluation of the event, the BED or alternate will implement  
17 this plan to the extent necessary to protect human health or the environment.

18  
19 Incidents discovered by unit personnel trained in emergency response may be responded to according to the  
20 procedures given in this plan prior to the arrival of the BED. However, immediate notification of the BED is still  
21 required prior to implementing these procedures.

### 22 7.4 EMERGENCY RESPONSE PROCEDURES [G-4]

23  
24 Emergency response procedures have been established for the 305-B Storage Unit and are described below.

#### 25 7.4.1 Notification [G-4a]

##### 26 Discoverer

- 27 1. If within the unit, notify unit personnel of discovery of spill or release.
  - 28 2. Immediately notify the PNNL Single Point Contact (375-2400) and provide all known information,  
29 including:
    - 30 • Name(s) of chemical(s) involved and amount(s) spilled, on fire, or otherwise involved, or  
31 threatened by, the incident.
    - 32 • Name and callback phone number of person reporting the incident.
    - 33 • Location of spill or discharge (pinpoint as closely as possible).
    - 34 • Time incident began or was discovered.
    - 35 • Where the materials involved are going or may go, such as into secondary containment, under  
36 doors, through air ducts, etc.
    - 37 • Source and cause, if known, of spill or discharge.
    - 38 • Name(s) of anyone contaminated or injured in connection with the incident.
    - 39 • Any corrective actions in progress.
    - 40 • Anyone else who the caller has contacted.
- 41  
42  
43  
44  
45  
46

1           NOTE: DOE-RL and other (non-PNNL) contractor personnel are trained to notify Hanford Emergency  
2           number (811 from onsite telephones) rather than the Single Point Contact Hanford Patrol, who operates  
3           the 811 number, then notifies the Single Point Contact.  
4

5           Single Point Contact  
6

- 7           1. The single point contact will notify the BED, or one of his alternates if the BED cannot be immediately  
8           reached, to arrange immediate response to the incident.  
9  
10          2. The single point contact will arrange for immediate response from Hanford Fire Department for fire or  
11          ambulance services as needed based on the report of the discoverer.  
12  
13          3. The single point contact will notify the Laboratory Safety Department of the spill or release incident.  
14  
15          4. The single point contact will support the BED in providing further notification and coordination of response  
16          activities if needed. Potential activities requiring single point contact participation are:  
17               • Activate the general evacuation alarm for the 300 Area, if the BED determines that evacuation is  
18               necessary.  
19               • Notify the Emergency Management Center (EMC) operated for DOE by Project Hanford  
20               Management Contractor (PHMC) if evacuation of the 300 Area or adjacent areas is necessary.  
21               • Activate the 300 Area Emergency Control Center (ECC), described in the Site Emergency Plan, if  
22               needed.  
23               • Notify the DOE-RL Emergency Action Coordinating Team (EACT) in accordance with the  
24               Sitewide Emergency Plan if necessary to evacuate areas lying outside the Hanford Site.  
25               • Any other activities found in the DOE-RL Site Emergency Plan.  
26

27          Building Emergency Director (BED) (or alternate)  
28

- 29          1. Notify the Single Point Contact if an evacuation is needed. EXCEPTION: If only 305-B needs to be  
30          evacuated, activate the fire alarm first, then notify the Single Point Contact.  
31  
32          2. Arrange for care of any injured employees, utilizing the Single Point Contact for notification of ambulance  
33          services.  
34  
35          3. Notify the Single Point Contact of any need to activate the 300 Area Emergency Control Center (ECC)  
36          described in the Sitewide Emergency Plan. Activation of the ECC should be done whenever technical  
37          assistance in evaluating a spill is required, when the emergency may affect other neighboring buildings,  
38          or when otherwise deemed necessary by the BED. See Section 7.5.5.  
39  
40          4. Provide for off-normal event notification in accordance with DOE Order 5000.3A, PNL-MA-11, and other  
41          established site procedures, within 30 minutes of discovery. (Normally this is done through the Single  
42          Point Contact.)  
43  
44          5. Provide details on incident to Laboratory Safety as they become available.  
45

46          Laboratory Safety  
47

- 48          1. Provide telephone notification of incident to DOE-RL contact personnel. Sections 12.4.1.5.1 and  
49          12.4.1.6 of the permit application.

DOE-RL

- 3 1. Provide notification of releases to the National Response Center and to Ecology in accordance with the  
4 sitewide hazardous waste permit, 40 CFR 302.6, and WAC 173-303-145.  
5

**7.4.2 Identification of Hazardous/Dangerous Materials [G-4b]**

6  
7  
8 The BED or alternate will immediately identify the character, exact source, amount, and extent of the hazardous  
9 material or dangerous wastes involved in the incident to the degree possible. Identification of waste may be made  
10 by visual inspection of involved containers, by sampling, by reference to facility inventory records or shipping  
11 manifests, or by consulting with unit operations personnel. The 305-B operating record includes information on the  
12 characteristics and storage location of all wastes stored in the unit.

13 This information is referenced to container identification numbers and can be used to identify containers involved in  
14 the emergency.  
15

16 Samples of materials involved in an emergency can be analyzed by PNNL, HEHF, or other analytical laboratories as  
17 appropriate. Samples of spilled or released material(s) shall be taken in accordance with the WAP found in  
18 Section 3.2.  
19

**7.4.3 Hazard Assessment [G-4c]**

20  
21  
22 Once the materials involved in the incident have been identified by the procedure above, it should be possible to  
23 determine the extent of the danger posed by the incident. The BED or alternate on scene should assess both direct  
24 and indirect hazards posed by the incident. The ECC is available to assist the BED if needed. Possible aid may be  
in the form of determining the extent of an emergency, identifying the hazards associated with the materials involved  
in the incident, assisting in response to the incident, or coordinating the mobilization of special equipment or supplies  
to the incident site.  
27

28  
29 If assessment of all available information does not yield a positive assessment of the danger posed by the incident,  
30 a worst - case condition will be presumed and evacuation procedures will be initiated. The BED (or alternate)  
31 present on scene is responsible to initiate any evacuation through the steps shown in Section 7.4.1 above.  
32

**7.4.4 Control Procedures [G-4d]**

33  
34  
35 The initial response to any emergency will be to immediately protect the health and safety of persons in the  
36 immediate area. Identification, containment, treatment, and disposal assessment will be the secondary response.  
37

38 The following is presented to define specific emergency actions for personnel assigned to 305-B for different types of  
39 emergencies which could be encountered during normal operations.  
40

41 **7.4.4.1 Area-wide Evacuation.** (Signal: Steady siren of 3-5 minutes' duration) In the event of an area-wide  
42 evacuation of the 300 Area, 305-B personnel will shut down equipment, secure wastes (especially RMW), and  
43 secure classified documents (or carry them with them), if time permits. They will then report to the north parking lot  
44 accountability area. The zone warden will account for all facility personnel.  
45

46 **7.4.4.2 Take Cover.** (Signal: Wavering siren) In the event a take cover alarm is sounded, 305-B personnel will  
47 stay inside the 305-B Storage Unit, close all exterior doors, and turn off all intake ventilation. They will secure all  
48 wastes and classified documents. Personnel will then contact WM&EC with their whereabouts and request a call  
49 back for status.  
50

1 **7.4.4.3 Response to Minor Spills or Releases.** (Signal: None) Unit personnel will generally perform immediate  
2 cleanup of minor spills or releases using unit equipment, sorbents and emergency equipment noted in Section 7.5.  
3 Personnel detecting such spills or releases shall contact the PNNL Single Point Contact (375-2400) to notify of the  
4 detection of such release and arrange for notification of the BED. For spills or releases occurring within individual  
5 storage cells during routine handling and storage, see Section 4.1.1.8.  
6

7 A spill or release of hazardous material or dangerous waste is considered "minor" if all of the following are true:

- 8 • The spill is minor in size (generally less than five gallons of liquid or 50 lb. of solids);
- 9 • The composition of the material or waste is known or can be immediately determined from label,  
10 manifest, MSDS, or disposal request information;
- 11 • The spill does not threaten the health and safety of building occupants, i.e. an evacuation is not  
12 necessary;
- 13 • Unit personnel have received appropriate training in accordance with Section 8.1.5; and
- 14 • Unit personnel have appropriate protective equipment, respiratory protection, and emergency response  
15 equipment to immediately respond and remediate the spill or release.

16  
17 If one or more of the foregoing conditions are not met, the provisions of Section 7.4.4.4 should be followed.

18  
19 Notification of the spill shall take place as shown in Section 7.4.1.

20  
21 **7.4.4.4 Major Dangerous Waste and/or RMW Spill or Material Release.** (Signal: None) The following actions  
22 will be taken in the event of a major release:

23  
24 Discoverer

- 25  
26 1. If within the unit, notify unit personnel of discovery of spill or release by sounding the fire alarm.
- 27  
28 2. Immediately notify the PNNL Single Point Contact (375-2400) and provide all known information, including:
  - 29 • Name(s) of chemical(s) involved and amount(s) spilled, on fire, or otherwise involved, or threatened by,  
30 the incident.
  - 31 • Name and callback phone number of person reporting the incident.
  - 32 • Location of spill or discharge (pinpoint as closely as possible).
  - 33 • Time incident began or was discovered.
  - 34 • Where the materials involved are going or may go, such as into secondary containment, under doors,  
35 through air ducts, etc.
  - 36 • Source and cause, if known, of spill or discharge.
  - 37 • Name(s) of anyone contaminated or injured in connection with the incident.
  - 38 • Any corrective actions in progress.
  - 39 • Anyone else who the caller has contacted.
- 40  
41 3. Take action to contain and/or stop the spill if all of the following are true:
  - 42 • The identity of the substance(s) involved is known;
  - 43 • Appropriate protective equipment and control/cleanup supplies are immediately available;

- The employee can perform the action(s) contemplated without assistance, or assistance is immediately available from other trained unit employees; and
- Time is of the essence, i.e. the spill/discharge will get worse if immediate action is not taken.

If any of the above conditions are not met, or there is doubt, the employee should evacuate the area and remain outside the unit and upwind from it pending the arrival of the BED. He/she should remain available for consultation with the BED, Hanford Fire Department, or other emergency response personnel.

#### Single Point Contact

1. The single point contact will notify the BED, or one of the alternates if the BED cannot be immediately reached, to arrange immediate response to the incident.
2. The single point contact will remain available to the BED to support further notification and response activities if needed. Potential activities requiring single point contact participation are shown in Section 7.4.1 and in the DOE-RL Site Emergency Plan.

#### Building Emergency Director (BED) (or alternate)

1. Go directly to the unit to coordinate further activity. Take command of the scene from discovering unit employee.
2. Obtain all immediately available information pertaining to the incident. Determine need for assistance from agencies listed in Section 7.6 and arrange for their mobilization and response through the Single Point Contact.
3. If building evacuation is necessary, sound the fire alarm.
4. Arrange for care of any injured employees.
5. If a threat to surrounding facilities exists, activate the 300 Area ECC.
6. Provide for event notification in accordance with Section 7.4.1.
7. Maintain access control at the site by keeping unauthorized personnel and vehicles away from the area. Security personnel may be used to assist in site control if control of the boundary is difficult, e.g. repeated incursions. In determining controlled-access areas, be sure to consider environmental factors such as wind velocity and direction.
8. Arrange for proper remediation of the incident after evaluation in accordance with Sections 7.4.2 and 7.4.3. Remain available to fire, police, and other authorities on scene and provide all required information. If round-the-clock work is anticipated, enlist the assistance of alternate BEDs to provide coverage. Make no comment to media unless authorized to do so. Refer media inquiries to the Media Relations office.
9. If remediation is performed by unit personnel, ensure use of proper protective equipment, proper remedial techniques (including ignition source control for flammable spills), and decontamination procedures by all involved personnel. Consult a PNNL industrial hygienist for assistance in determining necessary equipment or procedures.
10. If remediation is performed by outside agencies such as the Hanford Hazardous Materials Response Team or other remedial contractors, remain at the site to oversee activities and provide information.

- 1 11. Ensure proper containerization, packaging, and labeling of recovered spill materials and overpacked  
2 containers.
- 3
- 4 12. Ensure decontamination (or restocking) and restoration of emergency equipment used in the spill remediation  
5 prior to resumption of unit operations in compliance with Section 12.4.1.5.3 of this permit application.
- 6
- 7 13. Provide reports after the incident in accordance with Section 12.4.1.6.
- 8

9 **7.4.4.5 Response to Fire.** (Signal: Gong -- 2 gongs/second) In the event of a fire, the discoverer will pull one of  
10 the manual fire alarms and call the Single Point Contact. Automatic initiation of a fire alarm (through the smoke  
11 detectors and sprinkler systems) is also possible. The personnel operating the facility are trained in the use of  
12 portable fire extinguishers. They will use their best judgment whether to extinguish a fire or evacuate. Under no  
13 circumstances will personnel remain in the facility to extinguish a fire if unusual hazards exist.  
14 The following actions will be taken in the event of a fire or explosion:

- 15
- 16 1. Upon actuation of the fire alarm, personnel will shut down equipment, secure wastes (especially RMW), and  
17 lock up classified documents (or carry them with them), ONLY if time permits.
- 18
- 19 2. The alarm automatically signals both the 300 Area Hanford Fire Department Station and the 300 Area Hanford  
20 Patrol Headquarters. Both will respond immediately.
- 21
- 22 3. Personnel shall leave 305-B by the nearest safe exit, and move upwind, keeping the driveway clear.
- 23
- 24 4. The Single Point Contact shall be immediately notified, who shall in turn notify the BED (or alternate).
- 25
- 26 5. The BED will go directly to the scene.
- 27
- 28 6. The BED will obtain all necessary information pertaining to the incident.
- 29
- 30 7. The BED will contact the Single Point Contact and advise whether to notify the PNNL Occurrence  
31 Representative or the PNNL 300 Area Emergency Director (AED), depending on the severity of the event.  
32 Inform the Single Point Contact as to the extent of the emergency (including estimates of dangerous waste or  
33 RMW quantities released to the environment) and any actions necessary to protect nearby facilities.
- 34
- 35 8. Activation of the 300 Area ECC sets into motion the notification process for DOE, other Hanford contractors,  
36 and outside agencies.
- 37
- 38 9. The Hanford Patrol will set up roadblocks within the area to route traffic away from the emergency scene.
- 39
- 40 10. Emergency medical technicians will remove injured personnel to a safe location, apply first aid, and prepare for  
41 transport to the medical department (DOE/HEHF) or to hospitals. Medical personnel are on standby at the  
42 medical facility 24 hours/day.
- 43
- 44 11. The Hanford Fire Department will extinguish the fire.
- 45
- 46 12. All emergency equipment will be cleaned and restored for its intended use immediately after completion of  
47 cleanup procedures.
- 48

49 **7.4.4.6 Unusual, Irritating, or Strong Odors.** (Signal: None) If an unusual, irritating, or strong odor is detected,  
50 and the person detecting it has reason to believe that the odor may be the result of an uncontrolled release of a toxic  
51 or dangerous material, they shall:

- Immediately activate the building fire alarm system to evacuate the building, and
- Notify the Single Point Contact, the building manager, and cognizant line management.

In the event that the discoverer has knowledge of the source and scope of the release and believes that the release poses no immediate threat to others, the release shall immediately be reported to the building manager and to the discoverer's manager. Measures shall be taken to contain the release and ventilate the area, if safe and advisable to do so.

In the event that an unusual odor is detected within the facility, and the source of the odor is unknown, the BED must consider whether the facility should be evacuated.

**7.4.4.7 Criminal Activity.** (Signal: None) In the event of sabotage, threatened action, or a bomb or suspicious object is discovered, unit personnel will clear the immediate area. The Single Point Contact will be notified immediately. Facility personnel shall take whatever steps are necessary to assure that suspicious objects are not moved, opened, or otherwise disturbed. If practicable and safe to do so, personnel may place warning signs, barricades, or guards to protect the object pending the arrival of qualified personnel.

**7.4.4.8 "Off-Shift" Conditions.** (Signal: None) If a staff member is working outside normal facility working hours, and the need to evacuate the facility occurs, the following procedure should be followed:

- Ensure that anyone else in the facility leaves through the nearest safe exit; provide assistance if necessary.
- Follow the facility evacuation procedure (Section 7.4.4.).
- In case of fire, activate the fire alarm, located at each building exit, and leave the building.
- Stay in a safe place nearby and inform the responding fire personnel of the nature and location of the emergency.
- Notify the Single Point Contact.

**7.4.4.9 Power Failure.** (Signal: None) In the event of power failure, all containers of waste will be checked for closure and, if the duration of the outage exceeds 30 minutes, will be returned to their storage cells if they have been removed for labpacking or bulking. Facility equipment will be shut down to allow orderly restoration of power.

In a power failure incident, the Building Manager and the BED are to be notified. The Building Manager is responsible to arrange for restoration of power service to the unit. The BED is responsible to evaluate whether the Contingency Plan should be implemented as described in Section 7.3, or whether an evacuation is advisable. If the Contingency Plan is not implemented immediately, site personnel may be required to monitor the unit for continuing release potential during extreme temperature periods. The BED will determine the need for, and extent of, any such monitoring, in consultation with an industrial hygienist if appropriate.

In the event of power loss to site equipment which results in failure of the equipment, the Building Manager is to be contacted to arrange for repair of the affected equipment and/or provide restoration of power. The BED should be contacted in the event that any failure results in a release or potential release to the environment as described in Section 7.3.

**7.4.4.10 Damaged, Unacceptable Shipments.** (Signal: None) When a damaged shipment of hazardous material or dangerous waste arrives at the unit, the shipment is unacceptable for receipt under the criteria of Section 2.8.3 of this permit application. The damaged shipment should not be moved. Unit personnel should instead perform the following steps:

- 1 1. If the release from damaged packagings is a "minor spill" under the criteria of Section 7.4.4.3:
  - 2
  - 3 • Immediately notify the Single Point Contact to advise of the situation. The Single Point Contact will
  - 4 notify the BED, who will respond and assist in the evaluation of, and response to, the incident.
  - 5 • Notify the generator of the damaged shipment, and obtain any chemical information necessary to
  - 6 assist the response.
  - 7 • Unit personnel may proceed with remedial action, including overpacking of damaged containers,
  - 8 cleanup of spilled material, or other necessary actions to contain the spill.
  - 9
- 10 2. If the release does not meet the criteria of a "minor spill" as noted above, or the extent of the spill cannot be
- 11 immediately determined, the unit contingency plan will be implemented as described in Section 7.3.
- 12

#### 13 7.4.5 Prevention of Recurrence or Spread of Fires, Explosions, or Releases [G-4e]

14 The BED is responsible for taking the steps necessary to ensure that a secondary release, fire, or explosion does  
15 not occur after the initial incident. Procedures that will be implemented may include:

- 16 • Inspection of containment for leaks, cracks, or other damage
- 17
- 18 • Inspection for toxic vapor generation
- 19
- 20 • Isolation of residual waste materials and debris
- 21
- 22 • Reactivation of adjacent operations in affected areas only after cleanup of residual waste materials is
- 23 achieved.
- 24
- 25
- 26

#### 27 7.4.6 Storage and Treatment of Released Material [G-4f]

28 Restart of operations after an emergency is conducted in accordance with established procedures for recovery from  
29 off-normal events. Treatment and/or storage and disposal of released material and contaminated debris is part of the  
30 recovery process leading to restart. These procedures call for cognizant PNNL line management and Laboratory  
31 Safety staff to determine the need for a recovery plan. A recovery plan is needed following an event when further  
32 risk could be introduced to personnel, a facility, or the environment through recovery action and/or to maximize the  
33 preservation of evidence. If a recovery plan is required, it must be approved by PNNL line management before  
34 restart. Restart of operations must be performed in accordance with the approved plan.

35 For emergencies not involving activation of the ECC, the BED is responsible for ensuring that conditions are  
36 restored to normal before operations are resumed. If the ECC was activated and the emergency phase is  
37 complete, a special recovery organization may be appointed at the discretion of the BED to restore conditions to  
38 normal. The makeup of this organization will be dependent upon the extent of the damage and its effects. The  
39 recovery organization will be appointed by the AED.

40 Immediately after an emergency, the BED or the recovery organization will make arrangements for the cleanup  
41 phase. Procedures for treatment, storage, and/or disposal of released material and contaminated debris are  
42 implemented at this time.

43 Released material and contaminated debris will be managed in the same manner as wastes received from outside  
44 the unit (see Section 4.3 for procedures). All waste so generated will be containerized in drums or other appropriate  
45 containers and stored in an appropriate storage area pending analysis and determination of final treatment/disposal  
46 requirements. WM&EC will be contacted for support and guidance during this phase of operations.

Cleanup actions will be taken by unit operations personnel or other personnel meeting the training requirements of Chapter 8 of the unit Part B permit application. Actions to be taken may include, but are not limited to, any of the following:

- Neutralization of corrosive spills
- Chemical treatment of reactive materials to reduce hazard
- Overpacking or transfer of contents from leaking containers
- Using sorbents to contain and/or absorb leaking liquids for containerization and disposal
- Decontamination of solid surfaces impacted by released material, e.g. intact containers, facility equipment, floors, containment systems, etc.
- Disposal of contaminated porous materials which cannot be decontaminated, and any contaminated soil
- Containerization and sampling of recovered materials for classification and determination of proper disposal technique
- Followup sampling of decontaminated surfaces to determine adequacy of cleanup techniques as appropriate.

Wastes from cleanup activities will be analyzed and stored in the same manner as are wastes received from outside the unit, i.e. in the manner prescribed in Chapter 4 of the Part B permit application for 305-B. A field check for compatibility prior to first storage, if necessary, will be performed as described in *A Method for Determining the Compatibility of Hazardous Waste* (EPA 1980). Incompatible wastes will not be placed in the same container. Containers of waste will be placed in storage areas appropriate for their compatibility class.

If it is determined that incompatibility of wastes was a factor in the incident, the BED or the recovery organization will ensure that the cause is corrected. Corrective examples would be modification of an incompatibility chart, or increased scrutiny of wastes from a generating unit (in accordance with Section 3.2 of the Part B permit application) when incorrectly designated wastes caused or contributed to an incident.

#### 7.4.7 Post-Emergency Equipment Maintenance [G-4h]

All equipment used during an incident will be decontaminated (if practicable) or disposed of as spill debris. Decontaminated equipment will be checked for proper operation prior to storage for subsequent use. Consumables and disposed materials will be restocked in the quantities shown in the inventories of Section 7.5. Fire extinguishers will be recharged or replaced.

The BED is responsible to ensure that all equipment is cleaned and fit for its intended use prior to the resumption of operations. Depleted stocks of neutralizing and absorbing materials will be replenished, SCBAs cleaned and refilled, protective clothing cleaned or disposed and restocked, etc. Notification of state and local authorities will be made through DOE-RL of completion of cleanup, decontamination and emergency equipment resupply activities pursuant to WAC 173-303-360(2)(j). Upon notification and approval of PNNL line management, normal facility operations may be resumed.

1 **7.4.8 Response to Container Spills or Leaks [G-4i]**  
2

3 In addition to the foregoing contingency plan provisions, the following specific actions may be taken for leaks or  
4 spills from containers at the unit:

- 5
- 6 • Container leaks will be stopped as soon as possible through tightening closures, tipping the container to  
7 stop the leak, use of plugging or patching materials, or overpacking. Appropriate protective equipment  
8 will be used.
  - 9
  - 10 • If it is inadvisable to approach the container, build a containment of sorbent materials and restrict access  
11 pending notification of the BED and implementation of the contingency plan.
  - 12
  - 13 • Contents of leaking containers may be transferred to appropriate nonleaking containers. Transfer  
14 procedures for fire safety will be followed for ignitable or reactive wastes (e.g., use of nonsparking tools,  
15 bonding and grounding of containers, isolation of ignition sources, and use of explosion-proof electrical  
16 equipment).
  - 17
  - 18 • Overpacked containers will be marked and labeled in the same manner as the contents. All containers of  
19 spill debris, recovered product, etc. will be managed in the same manner as waste containers received  
20 from outside the unit. Overpacks in use at the facility will be marked with information pertaining to their  
21 contents, and noting whether the container inside the overpack is leaking or is in good condition.
  - 22

23 **7.4.9 Response to Tank Spills or Leaks [G-4j]**  
24

25 This section is not applicable to 305-B because wastes are not stored in tanks.  
26

27 **7.4.10 Surface Impoundment Spills and Leakage [G-4k]**  
28

29 This section is not applicable to 305-B because wastes are not placed in surface impoundments.  
30

31 **7.4.11 Waste Pile Spills and Leakage [G-4l]**  
32

33 This section is not applicable to 305-B because wastes are not stored in waste piles.  
34

35 **7.4.12 Incineration Spills and Leakage [G-4m]**  
36

37 This section is not applicable to 305-B because wastes are not incinerated.  
38

39 **7.4.13 Landfill Leakage [G-4n]**  
40

41 This section is not applicable to 305-B because wastes are not placed in landfills.  
42

43 **7.4.14 Land Treatment Facility Spills and Leakage [G-4o]**  
44

45 This section is not applicable to 305-B because wastes are not treated in land treatment units.  
46

## 7.5 EMERGENCY EQUIPMENT [G-5]

3 The emergency equipment available for use during an emergency at the 305-B Storage Unit and at adjacent  
4 portions of the Hanford 300 Area are discussed in the following sections. The location of emergency equipment in  
5 the 305-B unit is shown in Figure 7-1.  
6

### 7.5.1 Communication Equipment

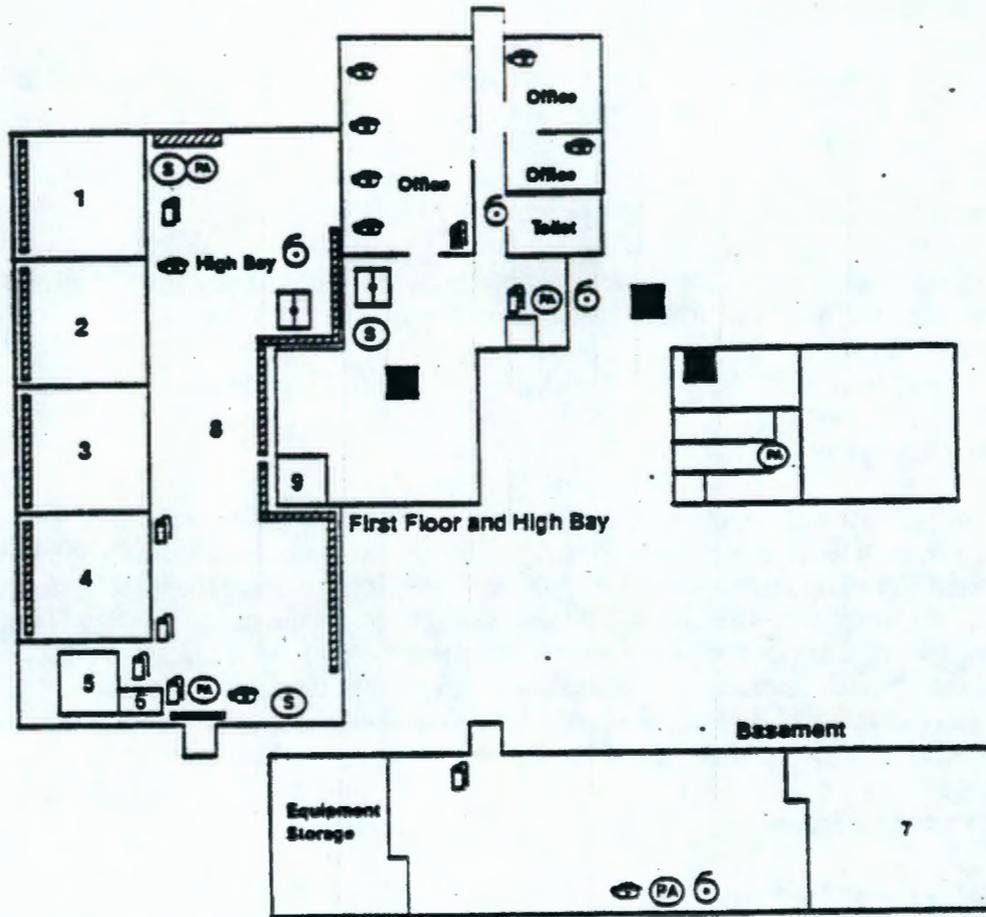
7  
8  
9 The 305-B Storage Unit has an alarm system that is monitored by the Hanford Fire Department. A manual fire alarm  
10 pull box is located near each exit door. Unit operations personnel may also use telephones, the building PA system,  
11 or portable radios located throughout the unit to summon assistance. Further description of communication  
12 equipment is located in Sections 6.1.1 and 6.3.1.2 of Chapter 6 of the Part B permit application.  
13

### 7.5.2 Fire Control Equipment

14  
15  
16 The 305-B Storage Unit is constructed of noncombustible materials and equipped with an automatic fire-suppression  
17 (sprinkler) system. A portable fire extinguisher is located in each working area in compliance with NFPA safety  
18 codes. Each Class ABC extinguisher is capable of suppressing fires involving ordinary combustible materials,  
19 flammable liquids, oils, paints, flammable gases, and fires involving electrical equipment. The Class D extinguisher  
20 is capable of extinguishing Class D (reactive metals) fires. Each Halon extinguisher is capable of extinguishing  
21 Class ABC fires where Halon would be more appropriate, e.g. fires involving large electrical equipment. All  
22 extinguishers comply with the National Fire Code standards for portable extinguishers and are inspected monthly by  
23 the building manager. The inspections are recorded on tags attached to each extinguisher.  
24

### 7.5.3 Personal Protective Equipment

27 The unit has a safety shower and eyewash units at each end of the high bay. Drainage from these units flows into  
28 the containment trenches. In addition to these units, a portable eyewash unit is maintained at the protective  
29 equipment storage area just outside the high bay, adjacent to the office area. These eyewash/shower units are  
30 inspected weekly in accordance with Section 6.2 of the Part B permit application.  
31



**Legend**

- |                                  |                                   |
|----------------------------------|-----------------------------------|
| 1. Acids, Oxidizers              | Ⓢ Safety Shower/Eyewash           |
| 2. Poisons, ORM                  | ☎ Phone                           |
| 3. Caustics, Non-regulated, WSDW | Ⓛ Fire Alarm Bell                 |
| 4. Hydrocarbons                  | Ⓜ Fire Alarm Pull Box             |
| 5. Liquid Bulking Module         | 🔥 14 lb Halon Fire Extinguisher   |
| 6. Asbestos Cabinet              | 🔥 10 lb ABC Fire Extinguisher     |
| 7. RMW Storage Cell              | 🔥 15 lb Class D Fire Extinguisher |
| 8. High Bay Floor Storage        | ⬇️ Removable Access to Basement   |
| 9. Small Quantity Flammable RMW  | 👤 Emergency Equipment Cabinet     |
|                                  | 👤 Collection Sumps                |

R0202111.1

Figure 7-1. 305-B Storage Unit Emergency Equipment Locations.

Protective clothing and respiratory protective equipment are maintained at the facility for use during both routine and emergency operations. This protective equipment includes at a minimum:

- 6 sets of chemically resistant suits, aprons, boots, and gloves
- 20 protective glasses
- 5 pair chemical goggles
- 4 face shields
- 4 full face respirators
- Respirator cartridges (variety)
- 3 self contained breathing apparatus (30 minute type)

This protective equipment is stored in cabinets located outside of the high bay east entrance. Personnel assigned to 305-B are available to assist other trained personnel (e.g., firefighters) in emergency situations or possible Immediately Dangerous to Life or Health (IDLH) spill cleanup situations.

#### 7.5.4 Spill Control and Containment Supplies

Supplies of absorbent pillows are located in the high bay operating area near the east entrance. These pillows absorb organic or inorganic materials and have a rated absorption capacity of approximately one liter of waste each. They may be used for barriers to contain liquid spills as well as for absorbent purposes. The work area also has an ample supply of diatomaceous earth for absorption of liquid waste spills. Neutralizing absorbent is available for response to acid or caustic spills. A supply of empty drums (DOT 17E tight head and DOT 17H open head) and salvage drums (overpacks) is maintained in the high bay area along with brooms, shovels, and miscellaneous spill response supplies.

#### 7.5.5 Hanford Site Emergency Equipment

The Hanford Site has fire and patrol personnel trained and equipped to respond in emergency situations. These personnel are employees of the site operating contractor. The Hanford Fire Department's Hazardous Material Response Team is trained for mobilization and control of hazardous material emergencies. The Hanford Fire Department will take control of the incident scene until the incident is under control and personnel rescue is complete. A list of available equipment for hazardous materials responses available through the Hazardous Material Response Team is given in Appendix 6A.

The Hanford Patrol provides support to the Fire Department during an incident, including such activities as activation of area crash alarm telephone systems or area sirens (for evacuation or take cover), access control, traffic control, and emergency notifications.

If an emergency threatens other facilities and/or there is a danger of release of hazardous materials to the environment, the 300 Area ECC will be activated. The ECC will provide any assistance requested by the BED, coordinate protective response actions and notifications, and furnish any necessary technical assistance.

#### 7.6 COORDINATION AGREEMENTS [G-6]

This section refers to a number of coordination agreements "Memorandum of Understanding" and (MOU) established by and through DOE-RL to assure proper response resources availability for incidents involving the 305-B unit.

1 An MOU among the four major site contractors (PHMC, PNNL, and HEHF) defines the interfaces and notifications  
2 required during an emergency. DOE-RL has overall responsibility for emergency preparedness. Per the MOU,  
3 PHMC has responsibility for Site-wide emergency preparedness while each contractor retains responsibility for  
4 emergency preparedness at individual units they co-operate with DOE-RL.  
5

6 MOUs have been established with a number of offsite authorities to reduce the impact to human health and the  
7 environment in the event that an incident has off-site public health implications, or if an on-site emergency warrants  
8 off-site assistance. These MOUs are generally activated through the emergency notification of DOE-RL as stated in  
9 Section 7.4.1 and in Appendix 7A.  
10

#### 11 **7.6.1 Local, State, and Federal Authorities**

12  
13 Various MOUs have been established between DOE-RL and Benton, Franklin, and Grant Counties and the states of  
14 Washington and Oregon. These MOUs describe the cooperative agreements between these agencies for any  
15 onsite emergency that warrants off-site assistance, and they describe the planning for, communication of, and  
16 response to emergencies at the Hanford Site that might have off-site consequences.  
17

#### 18 **7.6.2 Hanford Fire Department Mutual Aid**

19  
20 The Hanford Fire Department provides fire department services for the Hanford Site. Mutual aid agreements have  
21 been established with Richland, Kennewick, and Pasco fire departments; with Benton County Fire Districts 1, 2, and  
22 4; Franklin County Fire District 3; and Walla Walla Fire District 5 for support. In events where fire and/or toxic smoke  
23 threatens more than one facility, the 300 Area ECC is activated.  
24

#### 25 **7.6.3 Medical and First Aid**

26  
27 Professional medical help is provided by DOE-RL onsite through HEHF. Doctors and/or nurses are available for  
28 emergency assistance at all times. These medical personnel are trained in procedures to assist personnel  
29 contaminated with hazardous and/or radioactive material. Emergency call lists are maintained to provide  
30 professional medical consultation at all times. A nurse is on duty in the 300 Area Medical Aid station at all times.  
31

32 Referral to offsite hospital facilities is made by the HEHF physician providing emergency assistance by phone or in  
33 person. The primary hospital utilized in emergencies is Kadlec Hospital, Richland. Kennewick General Hospital,  
34 Kennewick, and Our Lady of Lourdes Hospital, Pasco, are backup facilities. MOUs between these hospitals and  
35 DOE-RL dated February 24, 1989 are in place and incorporated in the DOE-RL Site Emergency Plan.  
36

#### 37 **7.6.4 Ambulance Service**

38  
39 Ambulance service is provided by the Hanford Fire Department, which uses qualified emergency medical  
40 technicians as attendants. This service is available to the 305-B unit from the 300 Area fire station on a 24-hour,  
41 7-day basis. Additional ambulance service is available from other site fire stations and from other local fire  
42 departments through the mutual aid agreements noted in Section 7.6.2. An MOU has also been specifically  
43 established between DOE-RL and the City of Richland to provide backup ambulance services.  
44

#### 45 **7.6.5 Unified Dose Assessment Center**

46  
47 The Unified Dose Assessment Center (UDAC) is the technical extension of the DOE-RL EACT, providing services to  
48 both the EACT and the ECC. The primary mission of the UDAC is to provide recommendations for protective  
49 actions, dose calculations and projections, and consultation in the area of industrial hygiene for hazardous  
50 materials, biology, environmental monitoring, and meteorology to support the EACT and the ECC.  
51

Industrial hygiene and biological consultants at the UDAC advise and assist in determining proper response procedures for spills or releases of toxic, flammable, carcinogenic, and pathogenic materials. UDAC staff are responsible to provide a central unified assessment of the dispersion and impact of environmental releases from the Hanford Site. In communication with the ECC, UDAC coordinates the assessment of impacts and assists in determination of actual and potential release scenarios.

#### 7.6.6 Hanford Patrol Mutual Aid

The Hanford Patrol serves as the security and enforcement agency for the Hanford Site. In the event of an emergency, the Hanford Patrol provides services such as activating the crash alarm systems or area sirens, coordinating the movement of emergency responders through security gates, assisting evacuation, establishing barricades, and making necessary notifications through the Single Point Contact. MOUs have also been established with the Tri-Cities police departments to provide additional backup capabilities if required.

#### 7.6.7 River Evacuation

An MOU among DOE-RL, the Washington Public Power Supply System (WPPSS), Benton and Franklin Counties, and the Thirteenth Coast Guard District exists to ensure safety on the Columbia River during an emergency at the Hanford Site and to coordinate response activities for a river evacuation.

#### EMERGENCY SIGNALS

Signal	Meaning	Response
Gong (2 gongs/sec)	Fire	Evacuate building. Move upwind. Keep clear of emergency vehicles.
Siren (steady blast)	Area Evacuation	Proceed promptly to north parking lot accountability area. Follow instructions.
Wavering Siren	Take Cover	Close all exterior doors, turn off all intake ventilation and notify WM&EC of your whereabouts. Request call back for status and monitor portable radios.
Howler (Aa-oo-gah)	Criticality	Follow "take cover" instructions above. (No criticality will take place in 305-B since fissile materials are not accepted for storage.)
To hear these signals and a description of actions to take, call 373-2345.		

#### 7.6.8 Meteorological Information

An MOA is in place between the DOE-RL and the National Weather Service to define mutual responsibilities for providing meteorological information in an emergency situation. Additional meteorological information can be obtained from the Hanford weather station.

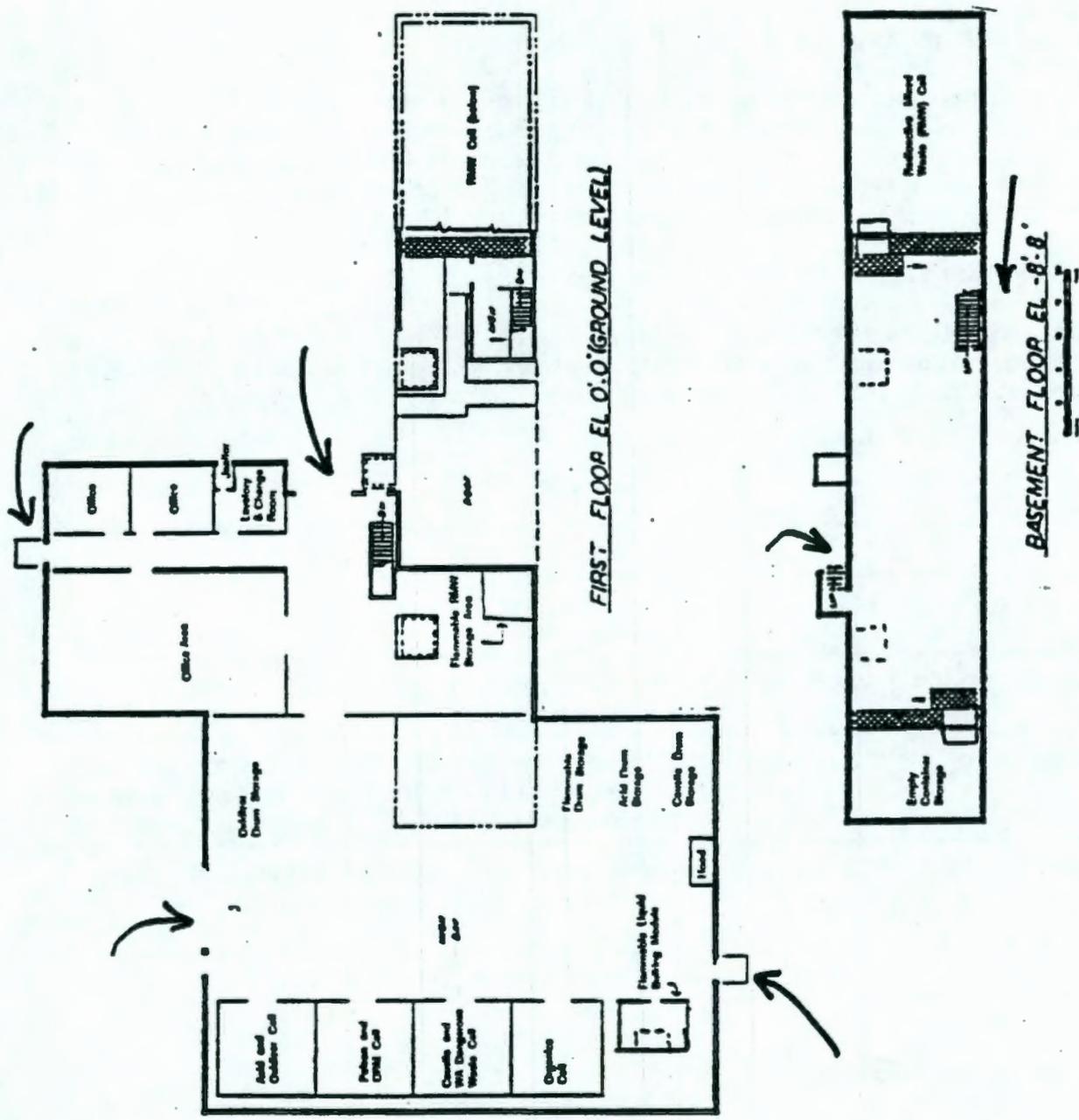


Figure 7-2. 305-B Evacuation Exits.

### 7.6.9 Washington Public Power Supply System

3 An MOA has been established between DOE-RL and WPPSS for providing mutual assistance as needed and  
4 available in the use of facilities and equipment for personnel decontamination, first aid, evacuation and reassembly  
5 areas, respiratory protective equipment, protective clothing, radiological survey equipment, resources for river  
6 evacuation, and radiological assistance response.

### 7.7 EVACUATION PLAN [G-7]

7  
8  
9  
10 The 305-B unit has an evacuation plan which includes emergency signal identification and staging area location. In  
11 the event an evacuation is required, 305-B unit personnel depart by one of the exit doors noted in Figure 7-2 and  
12 proceed through the north gate. They are to assemble in the north parking lot accountability area for accounting. If  
13 the north gate is blocked by the emergency, personnel may escape through the Apple Street (west) gate opening to  
14 Stevens Drive or the south gate.

### 7.8 REQUIRED REPORTS [G-8]

15  
16  
17  
18 Three types of written post-incident reports, summarized below are required for incidents at the 305-B unit.

#### 7.8.1 Report to Ecology/EPA

19  
20  
21  
22 Within 15 days of the incident, a written report will be submitted to Ecology concerning the incident. The report must  
23 include:

- 24 • Name, address, and telephone number of DOE-RL contact;
- 25 • Name, address, and telephone number of 305-B unit;
- 26 • Date, time, and type of incident (e.g. fire, explosion);
- 27 • Name and quantity of material(s) involved;
- 28 • The extent of any injuries;
- 29 • Assessment of any actual or potential hazards to human health or the environment caused by the  
30 incident;
- 31 • Estimated quantity and disposition of recovered material that resulted from the incident;
- 32 • Cause of the incident; and
- 33 • Description of corrective action taken to prevent recurrence of the incident.
- 34

#### 7.8.2 DOE Occurrence Reporting

35  
36  
37  
38 Under DOE Order 5000.3A, an occurrence report is required for incidents occurring at the 305-B unit involving  
39 hazardous materials release, fire, etc. Specific details of this reporting system are found in the Order. To  
40 summarize, the BED is responsible to file the following occurrence reports with DOE-RL under the Order:

- 41 • Within 24 hours of discovery, file a Notification Report.
- 42 • Within 10 days of discovery, file a complete Occurrence Report reporting all information available.
- 43
- 44

- 1 • File an updated Occurrence Report whenever significant new information relating to the incident  
2 becomes available.
- 3
- 4 • File a final Occurrence Report when cause of the incident has been analyzed, root cause and  
5 contributing causes determined, corrective actions determined and scheduled, and "lessons learned"  
6 identified.
- 7

### 8 **7.8.3 Off-Normal Event Reporting**

9  
10 Under off-normal event reporting procedures, occurrences shall be promptly investigated, reported, and analyzed to  
11 ensure that effective corrective actions are taken in compliance with contractual, statutory, and corporate  
12 requirements. All incidents are recorded in the building manager's logbook, and the logbook is audited to assure  
13 that incidents were reported and handled properly. In the DOE reporting system, four levels of incidents are  
14 described in descending order of severity: emergency, unusual occurrence, off-normal occurrences, and logbook  
15 entry only.

16  
17 An "off-normal event" is a significant deviation from normal operation that requires categorization and reporting as  
18 noted above. PNNL management is required to evaluate an event to determine the depth of investigation and level  
19 of reporting required.

20  
21 Reporting of emergencies, unusual occurrences, and off-normal occurrences takes place as described under  
22 Section 7.8.2.

23  
24 The BED is responsible for investigating each event in his/her area(s) of responsibility and submitting the  
25 appropriate report.

### 26 27 **7.9 CONTINGENCY PLAN LOCATION**

28  
29 Copies of the 305-B contingency plan are maintained at the following locations:

- 30
- 31
- 32 • The 305-B Storage Unit
- 33 • Hanford Fire Department (300 Area Fire Station)
- 34 • 300 Area ECC Offices
- 35 • The DOE-RL/EACT command post, Federal Building, Richland
- 36 • All local police and fire departments, hospitals, and state and local response teams that may be called  
37 upon to provide emergency services.
- 38