

INFORMATION CLEARANCE FORM

Date Received for Clearance Process (MM/YY/DD) 07/18/2006

A. Information Category
[ ] Abstract [ ] Journal Article
[ ] Summary [ ] Internet
[ ] Visual Aid [ ] Software
[ ] Full Paper [ ] Report
[X] Other Environmental Doc

B. Document Number DOE/RL-2006-35, Revision 0 REISSUE

C. Title Hartford Facility Dangerous Waste Permit Application, Waste Encapsulation and Storage Facility, Removed ORO information 5/21/06

D. Internet Address

E. Required Information

1. Is document potentially Classified? [X] No [ ] Yes (MANDATORY)

Signature of J. Hyatt, Manager's Signature Required

If Yes N.A. Homan, ADC Signature Required [X] No [ ] Yes Classified

2. References in the Information are Applied Technology [ ] No [ ] Yes
Export Controlled Information [ ] No [ ] Yes

3. Does Information Contain the Following: (MANDATORY)

a. New or Novel (Patentable) Subject Matter? [X] No [ ] Yes

If "Yes", Disclosure No.:

b. Information Received in Confidence, Such as Proprietary and/or Inventions? [X] No [ ] Yes

c. Copyrights? [X] No [ ] Yes If "Yes", Attach Permission.

d. Trademarks? [X] No [ ] Yes If "Yes", Identify in Document.

4. Is Information requiring submission to OSTI? [ ] No [ ] Yes

5. Release Level? [ ] Public [ ] Limited

F. Complete for a Journal Article

1. Title of Journal

G. Complete for a Presentation

1. Title for Conference or Meeting

2. Group Sponsoring

3. Date of Conference 4. City/State

5. Will Information be Published in Proceedings? [ ] No [ ] Yes 6. Will Material be Handed Out? [ ] No [ ] Yes

H. Author/Requestor Responsible Manager

Joel E. Williams Jr. (Print and Sign)

Jeannette Hyatt (Print and Sign)

I. Reviewers Yes Print Signature Public Y/N (If N, complete J)

General Counsel [X] S. Cherry [X] N

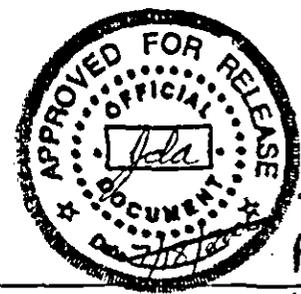
Office of External Affairs [ ] Y / N

DOE-RL [ ] Y / N

Other (ORO) [X] N.A. Homan [X] N
Other [X] J.P. Aardal [X] Y

J. If Information Includes Sensitive Information and is not to be released to the Public indicate category below. Information Clearance Approval

- [ ] Applied Technology [ ] Protected CRADA
[ ] Personal/Private [ ] Export Controlled
[ ] Proprietary [ ] Procurement-Sensitive
[ ] Business-Sensitive [ ] Patentable
[ ] Predecisional [X] Other (Specify) ORO
[ ] UCN



J. Aardal 01/11/2007 Public

K. If Additional Comments, Please Attach Separate Sheet

ADMINISTRATIVE DOCUMENT PROCESSING AND APPROVAL

**ORIGINAL**  
Sheet 1 of 1

**DOCUMENT TITLE:**  
HANFORD FACILITY DANGEROUS WASTE PERMIT APPLICATION,  
WASTE ENCAPSULATION AND STORAGE FACILITY

**OWNING ORGANIZATION/FACILITY:**  
LIQUID PROCESSING AND CAPSULE  
STORAGE

Document Number: DOE/RL-2006-035

Revision/Change Number: 0 *REISSUE*

**DOCUMENT TYPE** (Check Applicable)  
 Plan     Report     Study     Description Document     Other **ENVIROMENTAL DOCUMENT**

**DOCUMENT ACTION**     New     Revision     Cancellation

**RESPONSIBLE CONTACTS**

Name	Phone Number
Author: Joel F. Williams Jr	376-4782
Manager: J. E. Hyatt	376-7923

**DOCUMENT CONTROL**  
 Does document contain scientific or technical information intended for public use?     Yes     No  
 Does document contain controlled-use information?     Yes     No  
 ("Yes" requires information clearance review in accordance with HNF-PRO-184)

**DOCUMENT REVISION SUMMARY**

*NOTE: Provide a brief description or summary of the changes for the document listed.*  
 A certified permit application document is required to be submitted by August 30, 2006, in accordance with the State of Washington Department of Ecology Notice of Correction dated June 1, 2001 (revised June 2006).

**REVIEWERS**

Others	
Name (print)	Organization
J. L. Pennock	WM Plant Engineering
F. M. Simmons	Environmental Tech Support
R. W. Szelmezcza	Env. Compliance Officer

**APPROVAL SIGNATURES**

Author:	<i>[Signature]</i>	7/17/06
Name: (Print) Joel F. Williams Jr.		Date
Responsible Manager:	<i>[Signature]</i>	13 July 06
Name: (Print) J. E. Hyatt		Date
Other:		
Name: (Print)		Date

**RELEASE / ISSUE**

JUL 18 2006  
 DATE: *15*  
 STA: *15*  
 HANFORD  
 RELEASE  
 ID: *20*

DOE/RL-2006-35  
Revision 0  
Reissue

# Hanford Facility Dangerous Waste Permit Application, Waste Encapsulation and Storage Facility

Prepared for the U.S. Department of Energy  
Assistant Secretary for Environmental Management



United States  
Department of Energy  
P.O. Box 550  
Richland, Washington 99352

Approved for Public Release;  
Further Dissemination Unlimited

# Hanford Facility Dangerous Waste Permit Application, Waste Encapsulation and Storage Facility

Date Published  
August 2006

Prepared for the U.S. Department of Energy  
Assistant Secretary for Environmental Management



United States  
Department of Energy  
P.O. Box 550  
Richland, Washington 99352

*J. E. Arndt*  
Release Approval \_\_\_\_\_ Date 08/11/2007

Approved for Public Release:  
Further Dissemination Unlimited

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GLOSSARY

1		
2		
3		
4	AEA	<i>Atomic Energy Act of 1954</i>
5	ALARA	as low as reasonably achievable
6		
7	BED	Building Emergency Director
8		
9	CFR	Code of Federal Regulations
10		
11	DOE	U.S. Department of Energy
12	DOE-RL	U.S. Department of Energy, Richland Operations Office
13		
14	Ecology	Washington State Department of Ecology
15	EOC	Emergency Operations Center
16	ERP	emergency response procedures
17		
18	HF	Hanford Facility
19		
20	IC	Incident Commander
21	ICP	Incident Command Post
22	ICS	incident command system
23		
24	LDR	land disposal restriction
25		
26	MSDS	material safety data sheets
27		
28	PCB	polychlorinated biphenyl
29	POC	Patrol Operations Center
30		
31	TEDF	Treated Effluent Disposal Facility
32	Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
33	TSD	treatment, storage, and/or disposal
34		
35	WAC	Washington Administrative Code
36	WAP	waste analysis plan
37	WESF	Waste Encapsulation and Storage Facility

### METRIC CONVERSION CHART

Into metric units

Out of metric units

If you know	Multiply by	To get	If you know	Multiply by	To get
<b>Length</b>			<b>Length</b>		
inches	25.40	millimeters	millimeters	0.03937	inches
inches	2.54	centimeters	centimeters	0.393701	inches
feet	0.3048	meters	meters	3.28084	feet
yards	0.9144	meters	meters	1.0936	yards
miles (statute)	1.60934	kilometers	kilometers	0.62137	miles (statute)
<b>Area</b>			<b>Area</b>		
square inches	6.4516	square centimeters	square centimeters	0.155	square inches
square feet	0.09290304	square meters	square meters	10.7639	square feet
square yards	0.8361274	square meters	square meters	1.19599	square yards
square miles	2.59	square kilometers	square kilometers	0.386102	square miles
acres	0.404687	hectares	hectares	2.47104	acres
<b>Mass (weight)</b>			<b>Mass (weight)</b>		
ounces (avoir)	28.34952	grams	grams	0.035274	ounces (avoir)
pounds	0.45359237	kilograms	kilograms	2.204623	pounds (avoir)
tons (short)	0.9071847	tons (metric)	tons (metric)	1.1023	tons (short)
<b>Volume</b>			<b>Volume</b>		
ounces (U.S., liquid)	29.57353	milliliters	milliliters	0.033814	ounces (U.S., liquid)
quarts (U.S., liquid)	0.9463529	liters	liters	1.0567	quarts (U.S., liquid)
gallons (U.S., liquid)	3.7854	liters	liters	0.26417	gallons (U.S., liquid)
cubic feet	0.02831685	cubic meters	cubic meters	35.3147	cubic feet
cubic yards	0.7645549	cubic meters	cubic meters	1.308	cubic yards
<b>Temperature</b>			<b>Temperature</b>		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit
<b>Energy</b>			<b>Energy</b>		
kilowatt hour	3,412	British thermal unit	British thermal unit	0.000293	kilowatt hour
kilowatt	0.94782	British thermal unit per second	British thermal unit per second	1.055	kilowatt
<b>Force/Pressure</b>			<b>Force/Pressure</b>		
pounds (force) per square inch	6.894757	kilopascals	kilopascals	0.14504	pounds per square inch

06/2001

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE., Third Ed., 1993, Professional Publications, Inc., Belmont, California.

1.0

**CONTENTS**

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1 **HANFORD FACILITY DANGEROUS WASTE PERMIT APPLICATION,**  
2 **WASTE ENCAPSULATION AND STORAGE FACILITY**  
3  
4

5 **1.0 PART A PERMIT APPLICATION [A]**

6 The Part A covers the Waste Encapsulation and Storage Facility (WESF) that is located on the Hanford  
7 Facility in the 200 West Area. The regulatory history of WESF can be found in the Hanford Facility  
8 Administrative Record. The following is the latest revision to the Part A:  
9

- 10 • The Part A, Form 3, (Revision 3) was submitted on February 17, 2006. The Part A, Form 3, was  
11 revised to meet the new format in accordance with WAC 173-303-803. Dangerous waste number  
12 "WT01" (state-only – toxic) was deleted because only federal waste codes need to be identified in  
13 accordance with WAC 173-303-090. The Part A, Form 3, was approved by the Washington State  
14 Department of Ecology (Ecology) on February 17, 2006.  
15  
16

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 <b>WASHINGTON STATE DEPARTMENT OF ECOLOGY</b>		<b>Dangerous Waste Permit Application Part A Form</b>	
Date Received		Reviewed by: <i>Kathy Conway</i>	Date: 02/28/2006
Month Day Year		Approved by: <i>M.P. Davis</i>	Date: 03/13/2006
Please refer to instructions for completing this form.			
I. This form is submitted to: (place an "X" in the appropriate box)			
<input checked="" type="checkbox"/>	Request modification to a final status permit (commonly called a "Part B" permit)		
<input type="checkbox"/>	Request a change under Interim status		
<input type="checkbox"/>	Apply for a final status permit. This includes the application for the initial final status permit for a site or for a permit renewal (i.e., a new permit to replace an expiring permit).		
<input type="checkbox"/>	Establish Interim status because of the wastes newly regulated on:	(Date)	
List waste codes:			
II. EPA/State ID Number			
W	A	7	8
9	0	0	0
8	9	6	7
III. Name of Facility			
US Department of Energy - Hanford Facility			
IV. Facility Location (Physical address not P.O. Box or Route Number)			
A. Street			
825 Jadwin			
City or Town		State	ZIP Code
Richland		WA	99352
County Code (if known)	County Name		
0 0 5	Benton		
B. Land Type	C. Geographic Location	D. Facility Existence Date	
	Latitude (degrees, mins, secs)	Longitude (degrees, mins, secs)	Month Day Year
F	S E E T O P O	M A P	0 3 2 2 1 9 4 3
V. Facility Mailing Address			
Street or P.O. Box			
P.O. Box 550			
City or Town		State	ZIP Code
Richland		WA	99352

<b>VI. Facility contact (Person to be contacted regarding waste activities at facility)</b>												
Name (last)						(first)						
Klein						Keith						
Job Title						Phone Number (area code and number)						
Manager						(509) 376-7395*						
Contact Address												
Street or P.O. Box												
P.O. Box 550												
City or Town						State		ZIP Code				
Richland						WA		99352				
<b>VII. Facility Operator Information</b>												
A. Name						Phone Number (area code and number)						
Department of Energy * Owner/Operator Fluor Hanford** Co-Operator for Waste Encapsulation and Storage Facility						(509) 376-7395* (509) 375-3576 **						
Street or P.O. Box												
P.O. Box 550 *												
P.O. Box 1000 **												
City or Town						State		ZIP Code				
Richland						WA		99352				
B. Operator Type		F										
C. Does the name in VII.A reflect a proposed change in operator?						<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No				
If yes, provide the scheduled date for the change:						Month		Day		Year		
D. Is the name listed in VII.A. also the owner? If yes, skip to Section VIII.C.						<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No				
<b>VIII. Facility Owner Information</b>												
A. Name						Phone Number (area code and number)						
Keith A. Klein, Operator/Facility-Property Owner						(509) 376-7395*						
Street or P.O. Box												
P.O. Box 550												
City or Town						State		ZIP Code				
Richland						WA		99352				
B. Operator Type		F										
C. Does the name in VII.A reflect a proposed change in operator?						<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No				
If yes, provide the scheduled date for the change:						Month		Day		Year		
<b>IX. NAICS Codes (5/6 digit codes)</b>												
A. First						B. Second						
5	6	2	2	1		9	2	4	1	1	0	Administration of Air & Water Resource & Solid Waste Management Programs
C. Third						D. Fourth						
5	4	1	7	1	0	9	9	9	9	9	9	Research & Development in the Physical, Engineering, & Life Sciences Unclassified Establishments

X. Other Environmental Permits (see instructions)														
A. Permit Type		B. Permit Number										C. Description		
E		A	I	R	-	0	2	-	1	2	1	8	WAC 246-247, Radiation Protection -- Air Emissions	
E		E	P	A	-	1	9	9	9	-8	-	1	2	40 CFR 61, Subpart H, NESHAPS

**XI. Nature of Business (provide a brief description that includes both dangerous waste and non-dangerous waste areas and activities)**

WESF was constructed on the west end of B Plant in 1974 to encapsulate and store cesium chloride and strontium fluoride salts that had been separated from Hanford's high-level radioactive tank waste. WESF had stored the encapsulated salts since operations began in 1974 and initiated mixed waste management activities on July 14, 1997. The waste is stored in stainless steel capsules whose maximum outer height is approximately 53 centimeters (~21 inches) and maximum diameter is approximately 8 centimeters (~3 inches). WESF is a two-story, 20,000 square-foot building 157 feet long and 40 feet high. It is constructed of steel reinforced concrete. It is partitioned into seven hot cells, the hot cell service area, operating areas, building service areas, and the pool cell area.

The seven hot cells are labeled A through G and activities within the hot cells are performed remotely using manipulators. Waste and drum load out is performed in hot cell A. Hot cells B through E were used to convert strontium nitrate and cesium carbonate into strontium fluoride and cesium chloride salts. Only hot cells F and G will remain active for cesium/strontium capsule storage. The hot cell service area is located on the south side of the hot cells and is used for access into hot cells A and G. The operating areas and other building service areas associated with the hot cells provide areas for instrumentation monitoring, utility support, or manipulator repair as required.

The pool cell area consists of 12 pools lined with stainless steel. Pools 9, 10, and 11 are outside the TSD unit boundary. Pool cells 1 through 8 and 12 can be used for capsule storage and are filled with water to a depth of approximately 13 feet. Each pool is equipped with a monitoring system to detect any leakage from capsules. The water cools the cesium/strontium capsules and provides radiation shielding. Pool cell 12 is used to move capsules from hot cell G and from pool cell to pool cell.

The maximum process design capacity for miscellaneous storage in pool cells 1 through 8 and 12 is approximately 4,484 liters (~1,185 gallons) and for Process cells A through G is approximately 56 liters (~15 gallons). The total maximum process design capacity for miscellaneous storage in the pool cells and process cells is approximately 4,540 liters (~1,200 gallons).

**EXAMPLE FOR COMPLETING ITEMS XII and XIII (shown in lines numbered X-1, X-2, and X-3 below):** A facility has two storage tanks that hold 1200 gallons and 400 gallons respectively. There is also treatment in tanks at 20 gallons/hr. Finally, a one-quarter acre area that is two meters deep will undergo *in situ* vitrification.

Section XII. Process Codes and Design Capacities							Section XIII. Other Process Codes							
Line Number	A. Process Codes (enter code)			B. Process Design Capacity		C. Process Total Number of Units	Line Number	A. Process Codes (enter code)			B. Process Design Capacity		C. Process Total Number of Units	D. Process Description
				1. Amount	2. Unit of Measure (enter code)						1. Amount	2. Unit of Measure (enter code)		
X 1	S	0	2	1,600	G	002	X 1	T	0	4	700	C	001	In situ vitrification
X 2	T	0	3	20	E	001								
X 3	T	0	4	700	C	001								
1	S	9	9	4,540	L	001	1							
2							2							
3							3							
4							4							
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9							9							
1 0							1 0							
1 1							1 1							
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1 9							1 9							
2 0							2 0							
2 1							2 1							
2 2							2 2							
2 3							2 3							
2 4							2 4							
2 5							2 5							

**XIV. Description of Dangerous Wastes**

Example for completing this section: A facility will receive three non-listed wastes, then store and treat them on-site. Two wastes are corrosive only, with the facility receiving and storing the wastes in containers. There will be about 200 pounds per year of each of these two wastes, which will be neutralized in a tank. The other waste is corrosive and ignitable and will be neutralized then blended into hazardous waste fuel. There will be about 100 pounds per year of that waste, which will be received in bulk and put into tanks.

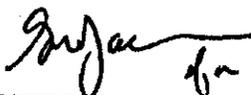
Line Number	A. Dangerous Waste No. (enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	D. Processes											
				(1) Process Codes (enter)					(2) Process Description [if a code is not entered in D (1)]						
X 1	D 0 0 2	400	P	S	0	1	T	0	1						
X 2	D 0 0 1	100	P	S	0	2	T	0	1						
X 3	D 0 0 2														Included with above
	1 D 0 0 5	5,000	K	S	9	9									Includes Debris
	2 D 0 0 6		K	S	9	9									Includes Debris
	3 D 0 0 7		K	S	9	9									Includes Debris
	4 D 0 0 8		K	S	9	9									Includes Debris
	5 D 0 1 1		K	S	9	9									Includes Debris
	6														
	7														
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	1 8														
	1 9														
	2 0														
	2 1														
	2 2														
	2 3														
	2 4														
	2 5														

**XV. Map**  
 Attach to this application a topographic map of the area extending to at least one (1) mile beyond property boundaries. The map must show the outline of the facility; the location of each of its existing and proposed intake and discharge structures; each of its dangerous waste treatment, storage, recycling, or disposal units; and each well where fluids are injected underground. Include all springs, rivers, and other surface water bodies in this map area, plus drinking water wells listed in public records or otherwise known to the applicant within 1/4 mile of the facility property boundary. The instructions provide additional information on meeting these requirements.

**XVI. Facility Drawing**  
 All existing facilities must include a scale drawing of the facility (refer to instructions for more detail).

**XVII. Photographs**  
 All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, recycling, and disposal areas; and sites of future storage, treatment, recycling, or disposal areas (refer to instructions for more detail).

**XVIII. Certifications**  
 I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

<b>Operator*</b> Name and Official Title (type or print) Keith A. Klein, Manager U.S. Department of Energy Richland Operations Office	<b>Signature</b> 	<b>Date Signed</b> 2/17/06
<b>Co-Operator**</b> Name and Official Title (type or print) Ronald G. Gallagher President and Chief Executive Officer Fluor Hanford	<b>Signature</b> 	<b>Date Signed</b> 1/31/06
<b>Co-Operator** - Address and Telephone Number</b> 2420 Stevens Center P.O. Box 1000 Richland, WA 99352 (509) 376-3576		
<b>Facility-Property Owner*</b> Name and Official Title (type or print) Keith A. Klein, Manager U.S. Department of Energy Richland Operations Office	<b>Signature</b> 	<b>Date Signed</b> 2/17/06

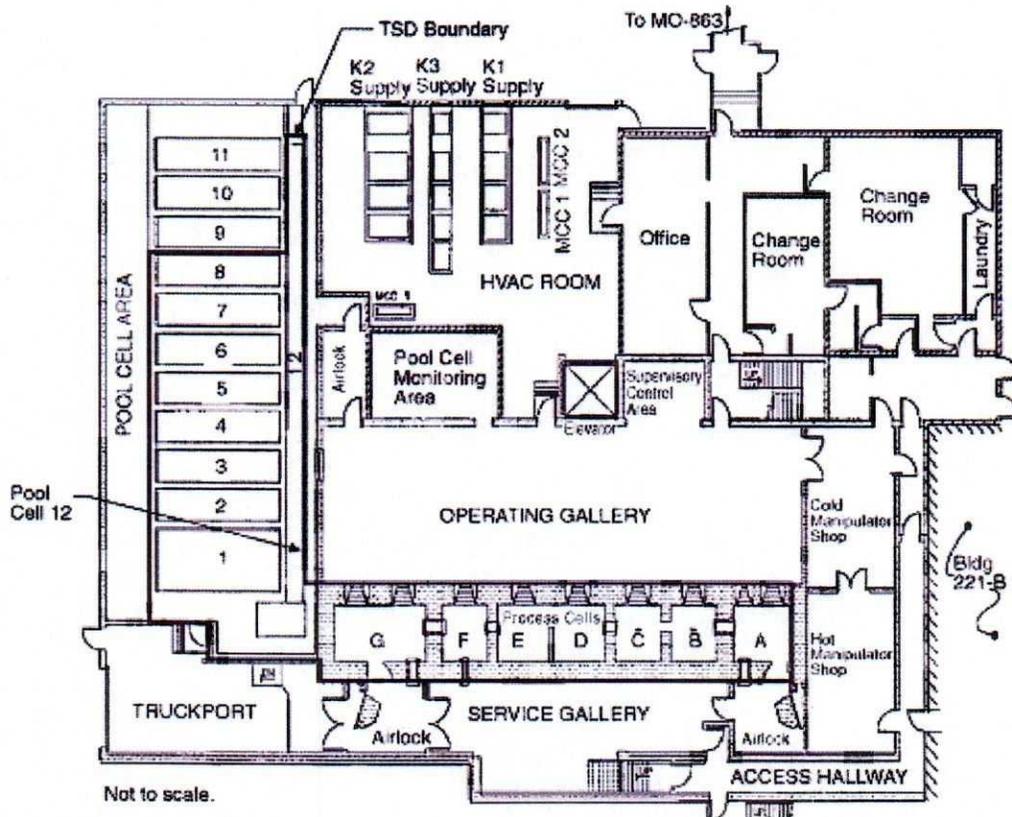
Comments

# Waste Encapsulation and Storage Facility



225-B Building

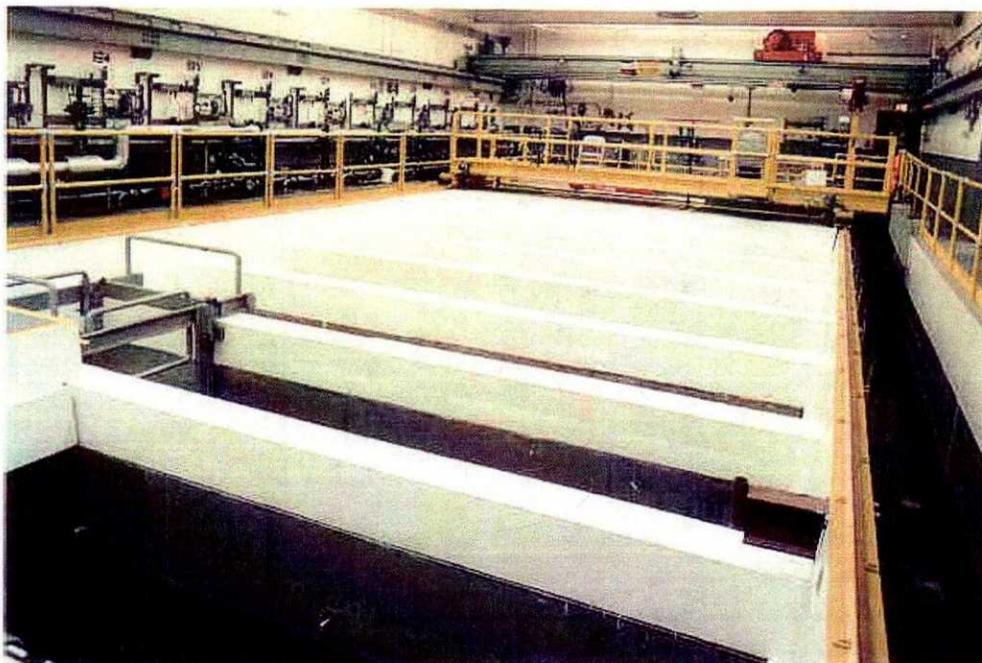
97110265-14CN  
PHOTO TAKEN 1997



Waste Encapsulation and Storage Facility Pool and Process Cells

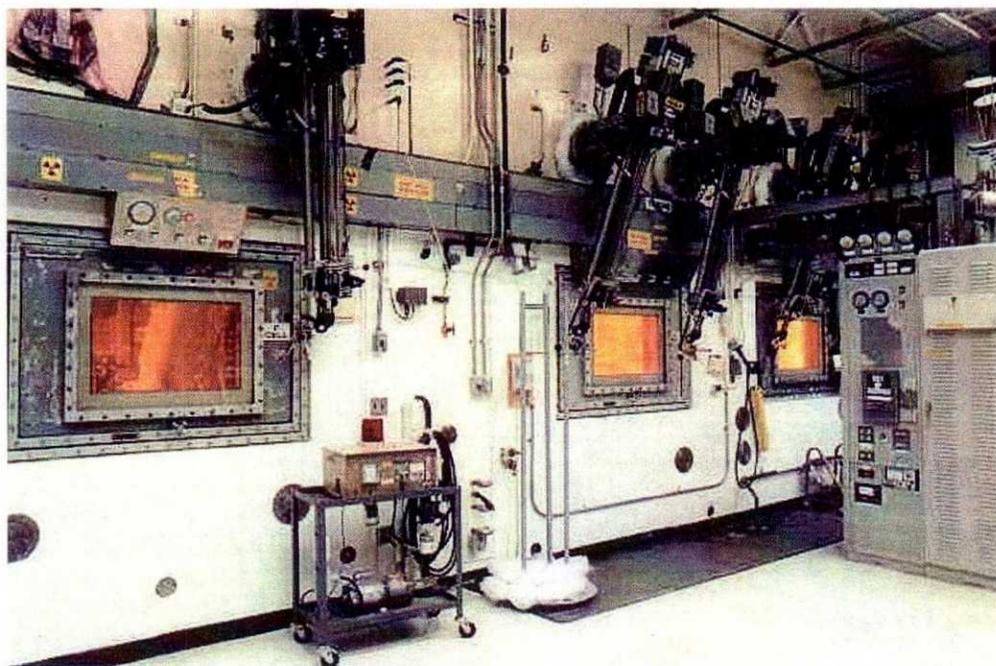
H97110237.2

## Waste Encapsulation and Storage Facility



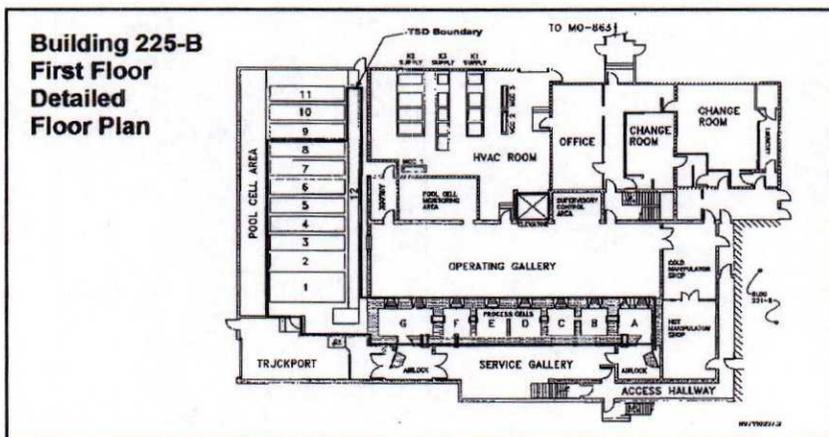
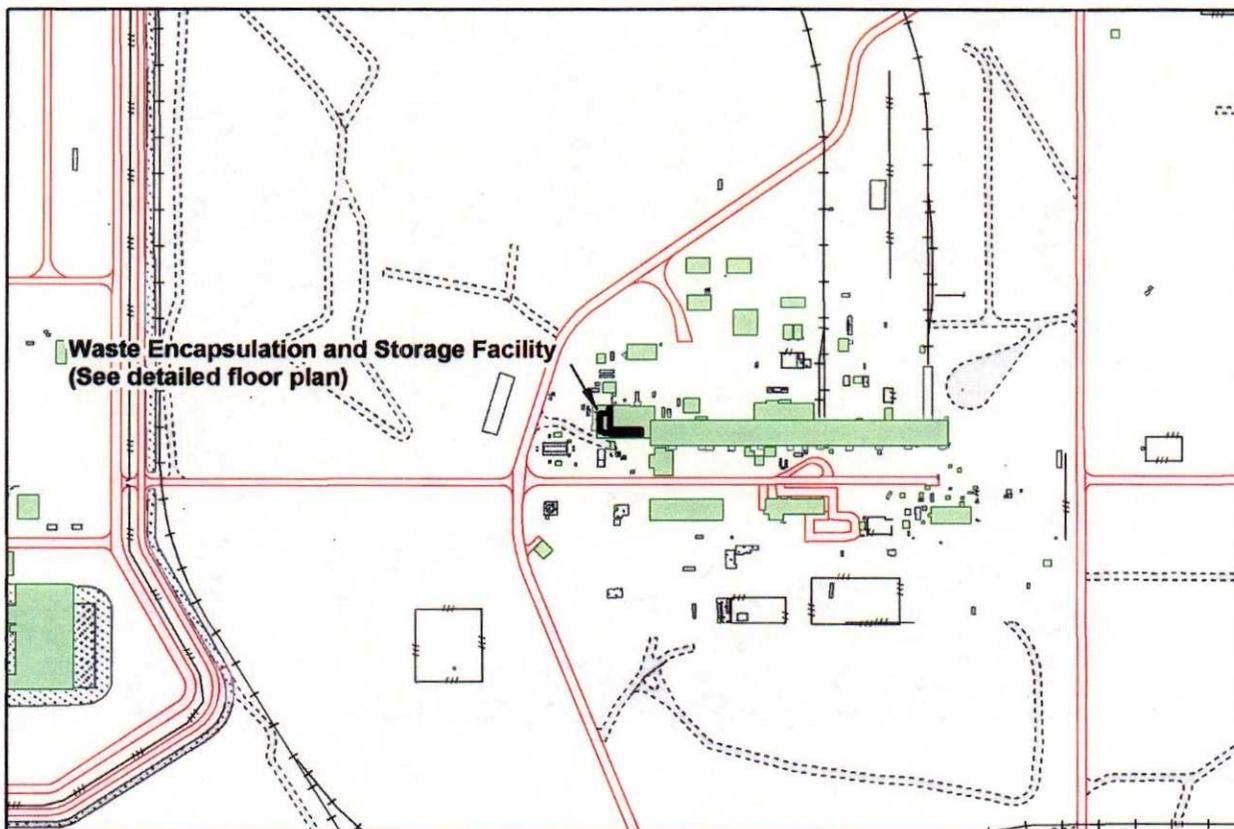
**Pool Cells**

97110265-8CN  
PHOTO TAKEN 1997



**Process Cells**

97110265-2CN  
PHOTO TAKEN 1997



**Waste Encapsulation and Storage Facility**

Prepared for:  
 US DEPARTMENT OF ENERGY  
 RICHLAND OPERATIONS OFFICE



Created and Published by: Central Mapping Services  
 Fluor Hanford, Richland, WA (509) 376-8759

INTENDED USE: REFERENCE ONLY

- TSD Unit Boundary
- DOE Operating Areas
- Hanford Facility
- Major Roads
- Service Roads
- Buildings and Mobiles
- Structures
- Concrete
- Railroads
- Fences



O:\Projects\RCRA\_TSD\050814\_2ndPriorityFacilityTopos2005\_Thompson\Maps\050921\_WasteEncapAndStorageFacility\_LineDwg\_85x11\_Rev1.mxd - 1/11/2006 @ 2:00:14 PM



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1                   **2.0 FACILITY DESCRIPTION AND GENERAL PROVISIONS [B AND E]**

2   This chapter briefly describes the WESF location and provides an overview of WESF operations,  
3   including the following:

- 4  
5   • General description  
6   • Topography  
7   • Traffic information.

8  
9   WESF is located in the 200 East Area on the west end of the B Plant Complex in the 225B Building on the  
10  Hanford Facility. A more detailed discussion of the waste types and known characteristics of WESF and  
11  the identification of the methods of storage are provided in Chapters 1.0, Part A; 3.0, Waste Analysis Plan;  
12  and 4.0, Process Description; respectively, in this unit-specific permit application.

13  
14  WESF was built to encapsulate and store cesium chloride and strontium fluoride salts that have been  
15  separated from Hanford Facility tank farm waste generated during chemical processing of defense fuel on  
16  the Hanford Facility. WESF has stored the encapsulated salts since operations began in 1974 and initiated  
17  mixed waste activities on July 14, 1997.

18  
19  The primary mission of WESF is the storage of encapsulated cesium and strontium capsules until transfer  
20  into a treatment facility or stored in a national repository.

21  
22  
23  **2.1 WASTE ENCAPSULATION AND STORAGE FACILITY UNIT DESCRIPTION**  
24  **[B-1 and B-1a]**

25  Descriptions of WESF structures that are located within the storage boundary are provided in the following  
26  sections.

27  
28  
29  **2.1.1 225B Building**

30  WESF consists of the 225B Building and several support buildings (i.e., offices, maintenance areas, and  
31  change rooms) and systems (i.e., fire system, water systems, and ventilation). The 225B Building is a  
32  1,858 square meter (20,000 square foot) building two-story structure that is 48 meters (157 feet) long by  
33  30 meters (97 feet) wide by 12 meters (40 feet) high at the outside dimensions and is constructed of  
34  steel-reinforced concrete. WESF is portioned into the pool cell area and hot cell area.

35  
36  
37  **2.1.2 Pool Cell Area**

38  The pool cell area is 10 meters (34 feet) wide by 22 meters (72 feet) long by 4 meters (13 feet) high and is  
39  located on the west side of the 225B Building (Figure 2-1). The pool cell area consists of 12 pools, and  
40  only Pool Cells 1 through 8 and 12 can be used for capsule storage. Pool Cells 9, 10, and 11 are outside  
41  the WESF unit boundary (refer to Chapter 1.0, Part A of this unit-specific permit application) and are not  
42  used for the storage of capsules.

1 **2.1.3 Hot Cell Area**

2 The hot cell area is 4 meters (14 feet) wide by 26 meters (84 feet) long by 5 meters (16 feet) high and is  
3 located on the south side of the 225B Building (Figure 2-2). The hot cell area consists of seven hot cells.  
4 Hot Cell A was used to remove low-level waste and Hot Cells B through E were used to convert strontium  
5 nitrate and cesium carbonate into strontium fluoride and cesium chloride salts. Only Hot Cells F and G  
6 will remain active for cesium/strontium capsule storage.  
7  
8

9 **2.2 TOPOGRAPHIC MAP [B-2]**

10 Refer to Chapter 1.0, Part A form in this unit-specific permit application for topographic map.  
11  
12

13 **2.3 WASTE ENCAPSULATION AND STORAGE FACILITY ROADWAYS [B-4]**

14 General traffic information for the Hanford Facility is presented in the *Hanford Facility Resource*  
15 *Conservation and Recovery Act Permit* (Permit) Attachment 33, Chapter 2.0, Section 2.4.  
16

17 Approximately 25 personnel are working at WESF and parking for personnel is provided. Existing paved  
18 roads will provide satisfactory all-weather access during operations.  
19  
20

21 **2.4 RELEASES FROM SOLID WASTE MANAGEMENT UNITS [E]**

22 Information concerning the solid waste management units can be found in Chapter 1.0, Part A topographic  
23 map in this unit-specific permit application.  
24  
25

26 **2.5 SEISMIC CONSIDERATION [B-3]**

27 WESF is located in seismic Zone 2B of the Uniform Building Code as discussed in the Permit  
28 Attachment 33, Chapter 2.0, Section 2.3. The pool cell and hot cell areas within WESF that are addressed  
29 in this unit-specific permit application meet the seismic criteria consideration, and are able to withstand  
30 and exceed the maximum horizontal acceleration requirements for an 0.12 gravity operation basis  
31 (HNF-SD-WM-DB-034, 1997).  
32

33 No active faults, or evidence of a fault that has had displacement during Holocene times, have been found  
34 at the Hanford Site (Permit Attachment 33, Chapter 2.0, Section 2.3).  
35  
36

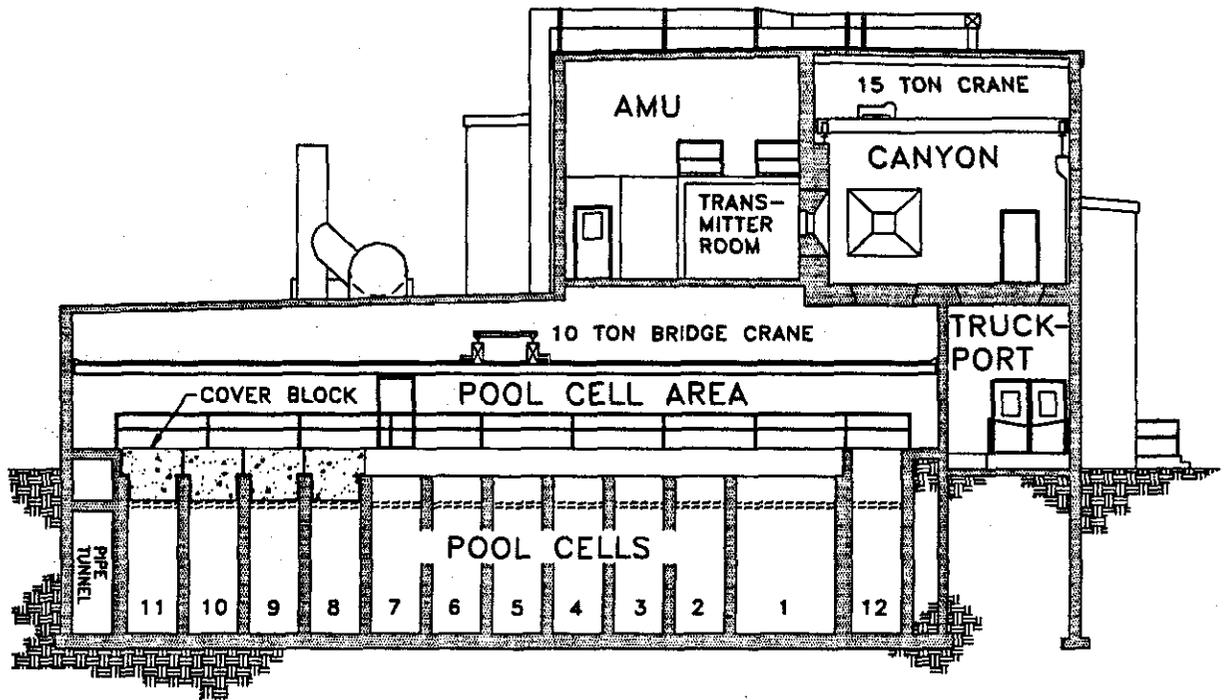


Figure 2-1. Pool Cell Area (Looking East).

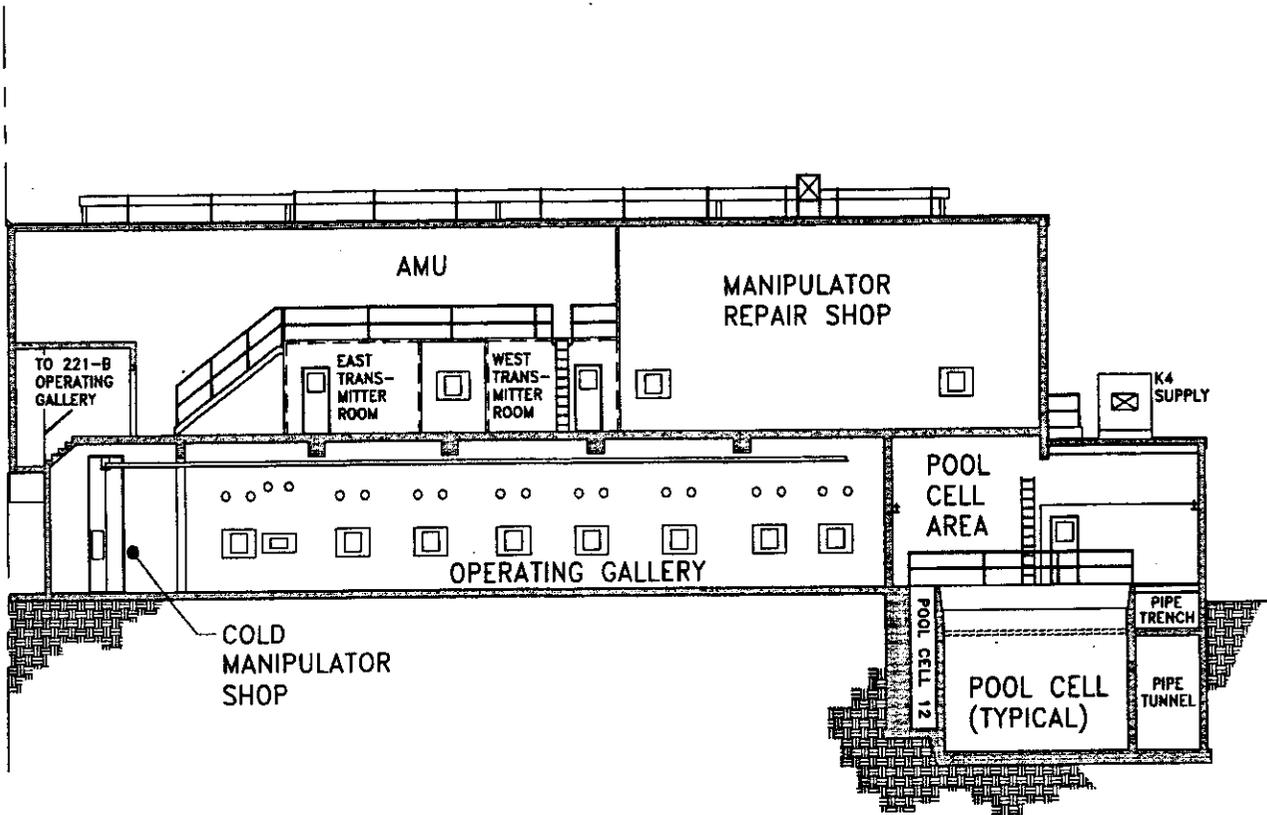


Figure 2-2. Hot Cell Area (Looking South).



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1 **3.0 WASTE ANALYSIS PLAN**

2 The purpose of this waste analysis plan (WAP) is to document waste analysis activities associated with  
3 the WESF to comply with *Washington Administrative Code* (WAC) 173-303-300(1), (2), (3), (4), (5), and  
4 (6). Descriptions required by WAC 173-303-300(5) are contained in the following sections of this  
5 chapter.  
6

7 Please note that source, special nuclear, and byproduct materials, as defined in the *Atomic Energy Act*  
8 (AEA) of 1954, are regulated at U.S. Department of Energy (DOE) facilities exclusively by DOE acting  
9 pursuant to its AEA authority. These materials are not subject to regulation by the State of Washington.  
10 All information contained herein and related to, or describing AEA-regulated materials and process in any  
11 manner, may not be used to create conditions or other restrictions set forth in any permit, license, order, or  
12 any other enforceable instrument. DOE asserts that pursuant to the AEA, it has sole and exclusive  
13 responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned  
14 nuclear facilities. Information contained herein on radionuclides is provided for process description  
15 purposes only.  
16

17 The primary mission of WESF is to store mixed waste capsules that contain dangerous waste and AEA  
18 material. The mixed waste capsules will be stored at WESF until transfer into a treatment facility or  
19 stored in a national repository.  
20

21 Only mixed waste packaged in capsules as identified in the *Hanford Federal Facility Agreement and*  
22 *Consent Order* (Tri-Party Agreement, Ecology et al. 2003) Milestone M-92-03 are stored at WESF. No  
23 waste has been received into WESF since the return of the capsules completing Tri-Party Agreement  
24 Milestone M-92-04 on September 28, 1998. There are no future plans to place additional waste into  
25 WESF.  
26

27  
28 **3.1 UNIT DESCRIPTION**

29 WESF is located in the 200 East Area on the Hanford Facility. WESF is operated as a miscellaneous  
30 storage unit in accordance with the provision of WAC 173-303-680.  
31  
32

33 **3.1.1 Description of Unit Processes and Activities**

34 WESF (225B Building) is a two-story building constructed of steel reinforced concrete, and is partitioned  
35 into the hot cell area, service areas and the pool cell area. The WESF unit boundary includes the hot  
36 cells and Pool Cells 1 through 8, and 12.  
37

38 The seven hot cells are labeled A through G and activities within the hot cells are performed remotely  
39 using manipulators. Only Hot Cells F and G are active at the present time for cesium/strontium capsule  
40 storage. Hot Cells A through E are not used. The pool cell area consists of 12 pools lined with stainless  
41 steel. Each pool is equipped with a monitoring system to detect any leakage from capsules. Pool Cells 1  
42 through 8 and 12 can be used for capsule storage and are filled with water to a depth of approximately  
43 4 meters (13 feet). The water provides cooling and shielding for the capsules.  
44

45 Only one mixed waste stream is managed at WESF, which consists of the cesium chloride and strontium  
46 fluoride salts that are stored within the capsules.  
47

48 Additional information is located in Chapter 1.0, Part A form in this unit-specific permit application.

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### 3.1.2 Capsule Description

The mixed waste is stored in capsules consisting of sealed stainless steel tubes that provide containment of the mixed waste. The maximum outer containment height is approximately 53 centimeters (~21 inches) with a maximum diameter of approximately 8 centimeters (~3 inches). Additional information on capsule design can be found in Chapter 4.0 of this unit-specific permit application.

### 3.1.3 Waste Prohibited for Storage

The following waste are prohibited from management in the WESF:

- Dangerous and/or mixed waste not identified in Chapter 1.0, Part A form of this unit-specific permit application
- Reactive waste defined in WAC 173-303-090(7)(a)
- Corrosive waste defined in WAC 173-303-090(6)(a)(i) and (ii)
- Ignitable waste defined in WAC 173-303-090(5)(a)
- Waste incompatible with the mixed waste in the capsules as defined in WAC 173-303-040 or the materials of construction of the capsules currently managed at WESF
- Polychlorinated biphenyl (PCB) waste.

## 3.2 CONFIRMATION PROCESS

WAC 173-303-300(3) and 300(6) require information be obtained, documented, and/or reported regarding waste accepted into WESF. All of the waste in storage at WESF originated at WESF. WESF will not receive and does not anticipate receiving additional waste from an onsite and/or offsite facility; therefore, no additional information or analysis is required to meet WAC 173-303-300(3) and 300(6).

Waste is designated by waste designation 'D' (WAC 173-303) using manufacturers product information, material safety data sheets (MSDS), and laboratory analysis. Waste also is characterized in accordance with the requirements of 40 CFR 261 and 761.

Designation for waste types that are stored at WESF:

<u>Number</u>	<u>Reference</u>
D004 through D008 and D011	WAC 173-303-090(8).

### 3.2.1 Pre-transfer Review

All of the waste in storage at WESF originated at WESF. WESF does not receive mixed waste from an onsite and/or offsite facility at this time; therefore, no pre-shipment review, waste profile documentation, and/or waste transfer approval is required. Any additional waste accepted into WESF will require a revision to this chapter and a modification of the sitewide permit.

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**3.2.2 Verification of Waste**

Only mixed waste packaged in capsules as identified in the Tri-Party Agreement Milestone M-92-03 are stored at WESF. No waste has been received into WESF since the return of the capsules to meet Tri-Party Agreement Milestone M-92-04. There are no plans to place additional waste into WESF.

**3.2.3 Waste Acceptance Criteria**

WESF will not receive and does not anticipate receiving additional waste from an onsite and/or offsite facility; therefore, no additional information or analysis is required to meet WAC 173-303-300(3) and 300(6).

**3.3 SELECTING WASTE ANALYSIS PARAMETERS**

The parameter for safe storage of the capsules is corrosion of the capsules from contact with impurities contained in the mixed waste salts. Studies were completed and confirmed that corrosion is not a factor in the safe storage of the capsules under current storage conditions (WMP-16937). The information from this study and the conclusion that corrosion is not a factor for storage of mixed waste capsules meets the intent of WAC 173-303-300(5a) and (b). WAC 173-303-610(4)(d) does not apply to WESF.

There are no future plans to place additional waste into WESF. Since waste currently in WESF have already been designated according to applicable WAC requirements, no additional waste is expected to be managed at WESF, no treatment will be conducted at WESF, and no waste analysis parameters need be identified at this time. Should circumstances change, and one of the enumerated activities become planned, the Permittee will seek appropriate modifications to this chapter and the sitewide permit through the permit modification process.

**3.4 SELECTING SAMPLING PROCESSES**

Periodic re-analysis of WESF mixed waste that is managed based on WAC 173-303-300(5)(d) is not planned because the capsules are sealed and no changes can be made to the mixed waste within the capsules. Therefore, no actions are necessary to demonstrate compliance with WAC 173-303-300(4)(a).

The capsules are sealed tubes whose constituents have been determined via the confirmation process in Section 3.2. No additional waste is planned or scheduled for storage at WESF. Therefore, no actions are necessary to demonstrate compliance with requirements of WAC 173-303-300(5c),(d), (e), and (g).

Since WESF exclusively manages mixed waste in miscellaneous units, WESF is exempt from the requirements of Subpart CC, air emissions standards for tanks, surface impoundments, and containers. An exemption to the air emission standards of Subpart CC in accordance with Section 40 CFR 264.1082 or with 40 CFR 265.1083 is not being requested; therefore, WAC 173-303-300(5)(i) does not apply.

1 **3.5 SELECTING A LABORATORY, LABORATORY TESTING, AND**  
2 **ANALYTICAL METHODS**

3 There are no plans to conduct analytical testing of waste currently managed by WESF, nor to manage  
4 additional waste at WESF or to treat waste at WESF. Therefore, there is no need to select laboratory  
5 testing methods or analytical methods.  
6  
7

8 **3.6 SELECTING WASTE RE-EVALUATION FREQUENCIES**

9 There are no plans to conduct analytical testing of waste currently managed at WESF. Therefore, there is  
10 no need to select a waste re-evaluation frequency.  
11  
12

13 **3.7 SPECIAL PROCEDURAL REQUIREMENTS**

14 Special procedural requirements [WAC 173-303-300(5)(f)] for WESF are described in Sections 3.7.1 and  
15 3.7.2.  
16  
17

18 **3.7.1 Procedures for Ignitable, Reactive, and Incompatible Waste**

19 Ignitable, reactive, and/or incompatible waste (refer to Section 3.1.3) is prohibited at WESF. No  
20 procedures relating to these waste types are necessary.  
21  
22

23 **3.7.2 Provisions for Complying with Federal and State Land Disposal Restriction Requirements**

24 Dangerous and/or mixed waste destined for disposal is subject to the land disposal restrictions (LDR) of  
25 WAC 173-303-140, which incorporates 40 CFR 268 by reference. WESF will not conduct any LDR  
26 treatment of waste in storage. Therefore, WESF is not required to comply with LDR requirements  
27 applicable to facilities that treat their waste in compliance with WAC 173-303-140. Storage of waste in  
28 WESF that does not comply with the LDR treatment standards of WAC 173-303-140 are addressed  
29 through the Hanford Site LDR report.  
30  
31

32 **3.8 RECORDKEEPING**

33 Recordkeeping requirements that are applicable to this chapter are described in DOE/RL-91-28,  
34 Chapter 12.0, Section 2.3, and as follows:  
35

- 36 • Confirmation process records described in Section 3.2 of this chapter will be maintained in  
37 accordance with Permit Condition II.I.1.b.
- 38
- 39 • LDR records will be maintained in accordance with WAC 173-303-380(1)(o) in the WESF  
40 unit-specific portion of the Hanford Facility Operating Record.  
41  
42



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28 **4.0 PROCESS INFORMATION [D]**

2 This chapter discusses the processes used to store waste at WESF. Only one waste stream is managed at  
3 WESF, which consists of the cesium chloride and strontium fluoride salts that are stored within capsules.  
4 The two areas that could store capsules are the pool cells and hot cells.

5  
6 Please note that source, special nuclear, and byproduct materials, as defined in the AEA, are regulated at  
7 DOE facilities exclusively by DOE acting pursuant to its AEA authority. These materials are not subject  
8 to regulation by the State of Washington. All information contained herein and related to, or describing  
9 AEA-regulated materials and process in any manner, may not be used to create conditions or other  
10 restrictions set forth in any permit, license, order, or any other enforceable instrument. DOE asserts that  
11 pursuant to the AEA, it has sole and exclusive responsibility and authority to regulate source, special  
12 nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on  
13 radionuclides is provided for process description purposes only.

14  
15 WESF will be permitted as a miscellaneous storage unit under WAC 173-303-680. The design of the  
16 stainless steel capsules precludes the mixed waste from contact with the pool cell water and monitoring  
17 equipment is installed to detect leakage of the mixed waste from the storage capsules. There is no potential  
18 for incidental rain water to enter into the pool cells or hot cells. The hot cells currently have an active  
19 managed fire suppression system. No unintended water is allowed within the pool cell and hot cell  
20 operating areas including fire suppression water.

21  
22 WESF pool cells and hot cells have been designed and built to isolate and maintain confinement of the  
23 mixed waste during normal storage conditions and in the event of a natural or man-made accident over the  
24 design life of WESF. A physical description of WESF is provided in Chapter 2.0 in this permit  
25 application.

26  
27  
28 **4.1 STORAGE UNIT DESCRIPTION**

29 This section discusses WESF processes that will be involved in the storage operations. All of the mixed  
30 waste in storage at WESF originated at WESF. WESF does not receive mixed waste from an onsite and/or  
31 offsite facility.

32  
33 The pool cell area consists of 12 pools lined with stainless steel. Only Pool Cells 1 through 8 and 12 can  
34 be used for capsule storage. The mixed waste capsules are currently stored in Pool Cells 1, 3 through 7,  
35 and 12. The pool cells are filled with water to a depth of approximately 4 meters (13 feet) to provide  
36 cooling and shielding for the capsules. The hot cell area consists of seven hot cells labeled A through G.  
37 The hot cells are constructed of reinforced concrete for shielding and have viewing windows. Activities  
38 within the hot cells are performed remotely using manipulators. Only Hot Cells F and G are active for  
39 mixed waste capsule storage. Capsules are not normally stored in Hot Cells F or G but could be placed in  
40 either cell for storage or evaluation.

41  
42  
43 **4.1.1 Description of Capsules**

44 The mixed waste salt forms of cesium chloride and strontium fluoride are stored in three types of capsules  
45 at WESF: mixed waste capsules of cesium salts, Type W overpack mixed waste capsules, and mixed waste  
46 capsules of strontium salts. The cesium salts are stored in both the mixed waste cesium capsules and  
47 Type W overpack capsules.

1  
2 **4.1.1.1 Cesium Capsules**

3 The standard mixed waste cesium capsule consists of a double capsule configuration with one capsule  
4 placed inside another as shown in Figure 4-1. Both the cesium inner and outer capsules and end caps are  
5 made of 316L stainless steel. The inner capsule dimensions are 5.7 centimeters (2.25 inches) in diameter  
6 by 50.1 centimeters (19.725 inches) long. The outer capsule is 6.7 centimeters (2.625 inches) in diameter  
7 by 52.8 centimeters (20.725 inches) long. There are a total of 1,312 standard mixed waste cesium capsules  
8 in storage.

9  
10 **4.1.1.2 Type W Capsules**

11 The Type W overpack mixed waste cesium capsule (Figure 4-2) is a 316L stainless steel capsule used to  
12 contain standard mixed waste cesium capsules that had swollen as a result of thermal cycling, cesium  
13 chloride that had been reconfigured into pencils or pellets for use as irradiators, or the contents of capsules  
14 that had been cut up for examination purposes. The Type W overpack capsule is 8.3 centimeters  
15 (3.25 inches) in diameter by 55.4 centimeters (21.8 inches) long.

16  
17 **4.1.1.3 Strontium Capsules**

18 Two types of material are used to encapsulate the strontium fluoride. Like the standard cesium capsule, the  
19 strontium capsule consists of a capsule within a capsule as shown in Figure 4-3. The inner capsule is  
20 Hastelloy C-276™. The outer capsule for the majority of strontium capsules is 316L stainless steel and the  
21 remaining capsules have a Hastelloy C-276™ outer capsule. The inner capsule is 5.7 centimeters  
22 (2.25 inches) in diameter by 48.4 centimeters (19.05 inches) long. The outer capsule is 6.7 centimeters  
23 (2.625 inches) in diameter by 55.4 centimeters (21.8 inches) long.

24  
25  
26 **4.1.2 Capsule Management Practices**

27 Pool Cells 1 and 3 through 7 are the primary pool cells used for capsule storage and each of these pools  
28 contains one small (13-by-13 grid) and two large (18-by-21 grid) capsule storage racks. Capsules are  
29 placed vertically in the storage racks and are stored in approximately 4 meters (13 feet) of water for  
30 shielding and cooling.

31  
32 One or more capsules may be moved from the pool cells to the hot cells for inspection or storage. Using  
33 long handled tongs, the capsule can be moved under water from its storage pool location into Pool Cell 12  
34 through a transfer port located approximately 1 meter (3 feet) above the pool cell floor. The capsule can  
35 then be temporarily stored on the floor or in a rack in Pool Cell 12 or be immediately moved to the hot  
36 cells. Capsules are transferred individually to and from Hot Cell G through a transfer chute. The capsule  
37 transfer chute is equipped with a trolley device for lowering and raising the capsule. Once in Hot Cell G,  
38 the capsules can be transferred into Hot Cell F using manipulators.

39  
40  
41 **4.1.2.1 Removal of Mixed Waste Storage Capsules**

42 Removal of mixed waste capsules stored within WESF will not be conducted routinely. It is planned that  
43 the mixed waste capsules will remain in WESF for storage until a final disposition option becomes  
44 available (refer to Chapter 2.0 in this unit-specific permit application).

---

™ Hastelloy C-276 is a trademark of Haynes International, Inc., Kokomo, Indiana.

1  
2 **4.1.2.2 Pool Cell Water**

3 Deionized water from the WESF deionized water system is added to the pool cells periodically to maintain  
4 water level due to evaporation.

5  
6  
7 **4.1.3 Capsule Labeling**

8 The WESF capsules will not be labeled with traditional hazardous waste labels but will meet the intent of  
9 WAC 173-303-320 with an alternative to standard labeling requirements. A unique alphanumeric  
10 identifier has been etched into each capsule. The etched identifier ensures the number is always legible,  
11 cannot be removed or damaged by heat or radiation, and does not degrade over time. This identifier will  
12 be cross-referenced to detailed information for each mixed waste capsule. Signs are posted at the  
13 personnel entrances to the areas storing mixed waste, identifying any potential hazards in the area to satisfy  
14 WAC 173-303-320 and WAC 173-303-630.

15  
16  
17 **4.1.4 Containment Requirements for Storing Capsules**

18 The design of the pool cell and hot cell areas that are directly involved with the handling and storage of  
19 mixed waste are built to keep exposures to these as low as reasonably achievable (ALARA). The pool cell  
20 and hot cell areas are built to isolate and maintain confinement of the mixed waste during normal storage  
21 conditions and in the event of a natural or man-made accident.

22  
23 WESF does not store any capsules with free liquids, waste that exhibit ignitability or reactivity, or waste  
24 designated F020 through F023, F026, or F027 (refer to Section 4.0 of this unit-specific chapter).

25  
26  
27 **4.2 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND**  
28 **INCOMPATIBLE WASTE IN WESF**

29 WESF does not store ignitable, reactive, or waste incompatible with the mixed waste in accordance with  
30 the waste analysis plan (Chapter 3.0 of this unit-specific permit application). The WESF capsules do not  
31 contain or generate materials that are explosive, pyrophoric, or chemically reactive. The capsule materials  
32 preclude chemical, electrochemical, or other reactions (such as internal corrosion). The WESF capsules  
33 will not exhibit the characteristics of ignitability or reactivity as defined in WAC 173-303-040 and  
34 WAC 173-303-090(5).

35  
36  
37 **4.3 ANALYSIS OF MISCELLANEOUS UNIT REGULATORY REQUIREMENTS**  
38 **PURSUANT TO WAC 173-303-680**

39 WAC 173-303-680 requires "a miscellaneous unit must be located, designed, constructed, operated,  
40 maintained and closed in a manner that will ensure protection of the human health and the environment.  
41 Permits for miscellaneous units are to contain such terms and provisions as necessary to protect the human  
42 health and the environment....." Waste management process descriptions provided above describe all  
43 essential elements of waste management practices necessary to support the required demonstrations and to  
44 develop the necessary permit conditions, including requirements of WAC 173-303-680(3).

45

1 WAC 173-303-680(2)(a) through (c) requires consideration of the potential release or migration of waste  
2 or waste constituents to groundwater, surface water, and air. Since mixed waste managed at WESF are in  
3 sealed capsules with little or any potential for release outside of the outer capsule, explicit consideration of  
4 these WAC sections are not necessary. WESF is not seeking to be permitted as a disposal unit, so  
5 consideration of postclosure care requirements of WAC 173-303-680(4) is also not necessary.  
6  
7

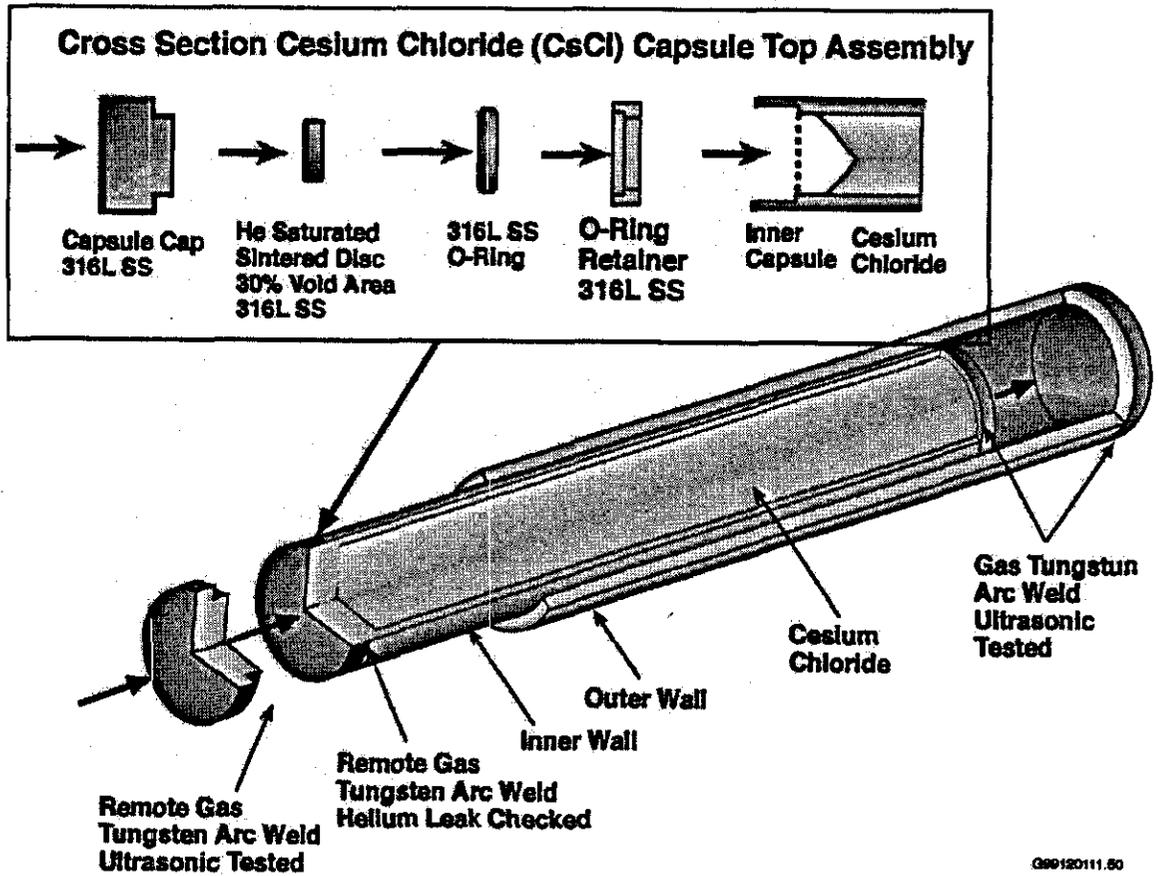
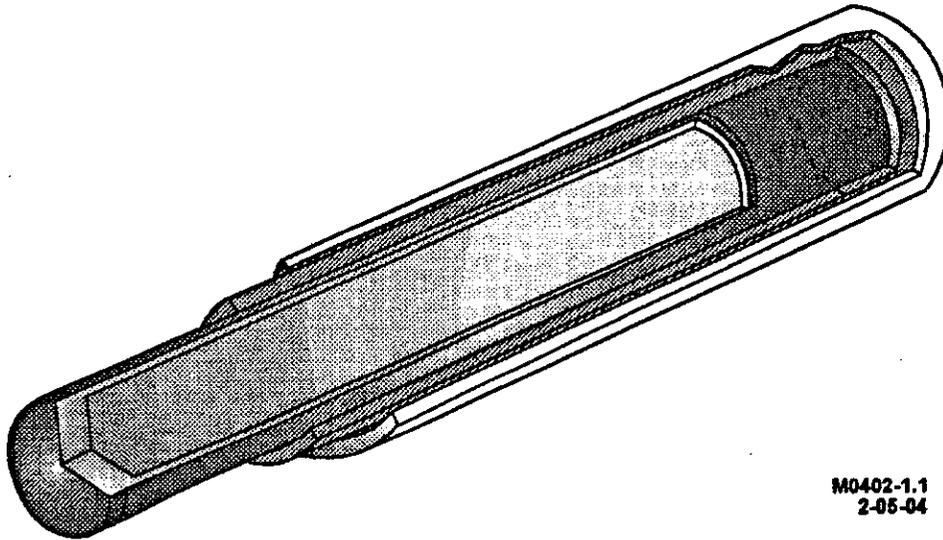


Figure 4-1. Cesium Capsule.



M0402-1.1  
2-05-04

Figure 4-2. Type W Overpack Capsule (Typical).

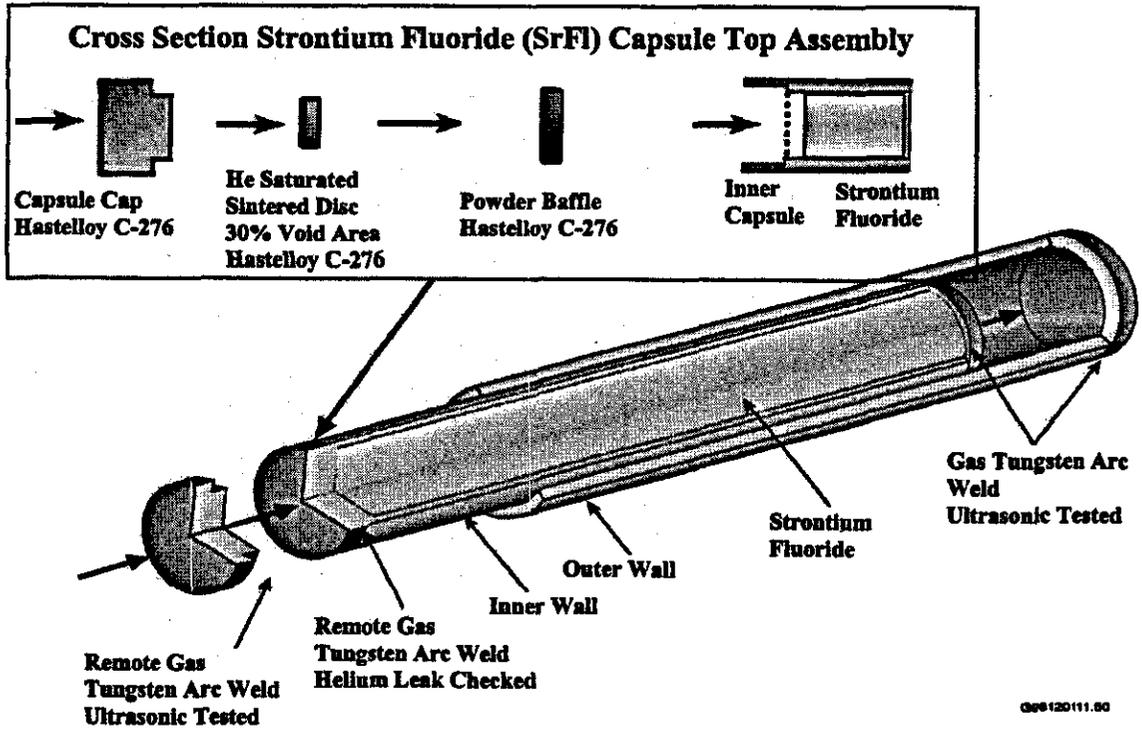


Figure 4-3. Strontium Capsule.

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**5.0 GROUNDWATER MONITORING FOR LAND-BASED UNITS [D-10]**

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WESF is not operated as a dangerous or mixed waste surface impoundment, waste pile, land treatment unit, or landfill as defined in WAC 173-303-645. Therefore, groundwater monitoring is not required. Further, as a miscellaneous unit, WESF is not authorized to treat, store, or dispose of dangerous waste on the land, so groundwater monitoring is not required for WESF. Hazardous material spills must be cleaned up immediately as stipulated in the contingency plan (Chapter 7.0 of this unit-specific permit application). The "Contingency Plan" and closure plans for the storage pools and the hot cells are based on closure by removal or decontamination, so postclosure groundwater monitoring requirements do not apply.

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36  
37  
38 Table 6-1. WAC 173-303-320(2) Inspection Schedule. .... T6-1  
39

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- 1
- 2 • Date and time of inspection
- 3 • Printed name and the hand written signature of the inspector
- 4 • Notation of the observations made
- 5 • Date and nature of any repairs or remedial actions taken.
- 6

7 The inspection checklists will consist of a listing of items to be assessed during each inspection. A  
8 'yes/no' response will be made for each listed item. Any deficiencies identified and recorded during the  
9 inspection will be reported to WESF management. WESF management will review and determine  
10 corrective actions to be taken.

#### 11 **6.2.1.1 Types of Potential Problems [F-2a(1), (2), (4), and (5)]**

13 Types of problems looked for during an inspection are provided in Table 6-1. All of the waste in storage  
14 at WESF originated at WESF. WESF does not receive mixed waste from an onsite and/or offsite facility.  
15 Because the mixed waste is in a solid form within a stainless steel capsule, spills are not probable.  
16 Therefore, spills are not considered among the types of problems that should be addressed through  
17 inspections.

#### 18 **6.2.1.2 Inspection Schedule [F-2a(3)]**

19 The mixed waste capsules are sealed. Frequent inspection of individual mixed waste capsules that require  
20 removal of capsules from storage racks is not feasible because of ALARA concerns and the storage  
21 configuration as described in Chapter 4.0 of this permit application.

22 The solid form of mixed waste is sealed in the stainless steel capsules; this makes a leak unlikely.  
23 Therefore, frequent capsule inspection is not necessary and removal of the capsules only introduces  
24 additional risk for potential capsule damage. Refer to Table 6-1 for proposed inspection frequencies.  
25  
26  
27

#### 28 **6.2.2 Schedule for Remedial Action for Problems Revealed [F-2c]**

29 In accordance with WAC 173-303-330(3) the WESF operating organization will remedy any problems  
30 revealed by the inspection on a schedule that prevents hazards to human health and the environment.  
31 Where a hazard is imminent or already has occurred, immediate action will be taken. Immediate actions  
32 will be implemented based on the contingency plan (Chapter 7.0 of this permit application),  
33  
34  
35

#### 36 **6.2.3 Specific Process or Waste Type Inspection Requirements [F-2d]**

37 Due to the design of the capsules and storage restrictions, the capsules can not be routinely inspected by  
38 direct visual means. Inspections of other types of equipment that provide confidence to detect leakage of  
39 the capsules are provided in Table 6-1.  
40  
41

### 42 **6.3 PREPAREDNESS AND PREVENTION REQUIREMENTS [F-3, F-3a, F-3b]**

43 The following sections describe the preparedness and prevention measures to be taken at WESF.  
44  
45

1 **6.3.1 Equipment Requirements [F-3a]**

2 The following sections describe the internal and external communications systems and the emergency  
3 equipment required that can be activated by the WESF BED. Hanford Facility-wide equipment is  
4 identified in Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02).

5  
6

7 **6.3.2 Internal Communication [F-3a(1)]**

8 At WESF, telephones capable of public address are used for internal communication and are located  
9 throughout the facility.

10

11 Personnel at WESF will have voice communication or equivalent (e.g., hand signals) during work  
12 assignments to maintain external communications with shift supervisors. Supervision will contact the  
13 Hanford Facility emergency telephone number (911) (373-3800 for cellular telephones) if assistance is  
14 needed.

15

16 The onsite internal communication systems provide immediate emergency instruction to personnel. The  
17 onsite internal communication system includes telephones, various alarms systems, PAX system, and  
18 two-way radios.

19

20

21 **6.3.3 External Communications [F-3a(2)]**

22 WESF is equipped with devices for summoning emergency assistance from the Hanford Fire Department  
23 and/or emergency response teams as necessary. External communication is made via fire alarms, a  
24 telephone communication system, or two-way radios (hand-held and vehicle-mounted radios) as  
25 described in Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02). A  
26 telephone communication system and two-way radios can be used to access a supervisor, who contacts  
27 the Hanford Site emergency network if assistance is needed. Refer to Chapter 7.0, Section 7.4.3 of this  
28 permit application for communication equipment requirements.

29

30

31 **6.3.4 Emergency Equipment [F-3a(3)]**

32 Emergency equipment will be available for use at WESF as required by WAC 173-303-340(1). A list of  
33 equipment is included in the contingency plan (Chapter 7.0 in this permit application).

34

35

36 **6.3.5 Water for Fire Control [F-3a(4)]**

37 The pool cell area does not use water for fire control. The hot cell area currently has a manually activated  
38 fire suppression system. Incidental combustibles within WESF are administratively controlled to  
39 minimize fire hazards in these areas of the facility.

40

41

42 **6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [F-4]**

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

44

45

1 **6.4.1 Unloading Operations [F-4a]**

2 All of the waste in storage at WESF originated at WESF. WESF does not receive mixed waste from an  
3 onsite and/or offsite facility; therefore, no unloading operations inspections are required. Any additional  
4 waste accepted into WESF will require a modification of this chapter and sitewide permit.  
5

6  
7 **6.4.2 Run-Off [F-4b]**

8 Because the mixed waste capsules are stored in pool cells within the 225B Building and pool level is  
9 controlled as described in Chapter 4.0 in this permit application, run-on is not considered a relevant  
10 factor in evaluating the protectiveness of waste storage activities at WESF. However, normal building  
11 design and construction practices at WESF do address precipitation control. The WESF roof, walls, and  
12 foundation prevent precipitation run-on from entering the pool cell and hot cell areas; therefore, no  
13 precipitation can contact the waste. Because no precipitation can enter the building to contact the waste,  
14 no run-off is expected.  
15

16  
17 **6.4.3 Water Supplies [F-4c]**

18 Pool cell levels are monitored. Deionized water is supplied to the pool cell area for filling the pool cells  
19 as required. The pool cell area has a sanitary water supply and the hot cell area has deionized water and  
20 raw water for fire suppression. The rest of WESF has water supplied for the support areas within the  
21 225B Building.  
22

23  
24 **6.4.4 Equipment and Power Failure [F-4d]**

25 Loss of electrical power does not constitute an emergency situation and would not result in a release of  
26 mixed waste. WESF will not be occupied during power outages except for personnel providing a  
27 response action. Rechargeable battery-powered lighting units will provide emergency illumination.  
28 Emergency communication equipment will be available to summon emergency assistance in the event of  
29 a power loss.  
30

31  
32 **6.4.5 Personal Protection Equipment [F-4e]**

33 Personnel will be trained in the use of applicable personal protection equipment. Examples of frequently  
34 used personal protection equipment include clothing (i.e., cloth coveralls, cloth and rubber shoe cover,  
35 cloth and rubber gloves and cloth caps), hard hats, safety shoes, and safety glasses (if required).  
36

37 In addition, various types of respiratory protection devices will be available if required. Personnel will  
38 be directed to use a particular type of respiratory device, depending on the specific respiratory hazard  
39 that might exist. Chapter 7.0 in this permit application identifies appropriate respiratory protective  
40 equipment.  
41  
42

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

3 WESF does not store ignitable waste, reactive waste, or waste found incompatible with the mixed waste  
4 capsules (refer to Chapter 3.0 in this permit application).

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Table 6-1. WAC 173-303-320(2) Inspection Schedule.

Requirement description	Inspection frequency	Types of potential problems
Data from leak detection equipment monitors leakage of the capsules (not pool cell water)	Monthly	Observe annunciator panel in WESF operation gallery to determine if lights are operating.
Security devices: "Danger Waste storage – major risk: toxic" signs	Weekly	Signs are posted and legible.
Safety and emergency equipment: emergency lighting	Monthly	Equipment is present and functional.
Annual inspection of 225B Building	Annually	Walk around outside of building and identify any structural damage.

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## 7.0 CONTINGENCY PLAN [G]

### OFFICIAL USE ONLY

#### CONTACT:

Greta Davis, State of Washington Department of Ecology  
3100 Port of Benton, Richland, WA 99354  
509-372-7894

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Table 8-1. Immobilized High-Level Waste Interim Storage Unit Training Matrix. .... T8-1

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1 **8.0 PERSONNEL TRAINING [H]**

2 This chapter discusses personnel training requirements based on WAC 173-303 and HF RCRA Permit  
3 [Dangerous Waste (DW) Portion]. In accordance with WAC 173-303-806(4)(a)(xii), the *Hanford*  
4 *Facility Dangerous Waste Part B Permit Application* must contain two items: (1) "an outline of both the  
5 introductory and continuing training programs by owners or to prepare persons to operate or maintained  
6 the TSD facility in a safe manner as required to demonstrate compliance with WAC 173-303-330" and  
7 (2) "a brief description of how training will be designed to meet actual job tasks in accordance with the  
8 requirements in WAC 173-303-330(1)(d)." The HF RCRA Permit (DW Portions), Condition II.C  
9 (Personnel Training) contains training requirements applicable to Hanford Facility personnel and  
10 non-Facility personnel.

11  
12 Compliance with these requirements at WESF is contained in the HF RCRA Permit, DOE/RL-91-28,  
13 Chapter 8.0 and Chapter 8.0 of this permit application. Chapter 8.0 of this permit application  
14 supplements DOE/RL-91-28, Chapter 8.0.  
15  
16

17 **8.1 OUTLINE OF INTRODUCTORY AND CONTINUING TRAINING PROGRAMS**

18 The introductory and continuing training programs are designed to prepare personnel to manage and  
19 maintain the TSD unit in a safe, effective, and environmentally sound manner. In addition to preparing  
20 personnel to manage and maintain TSD units under normal conditions, the training programs ensure that  
21 personnel are prepared to respond in a prompt and effective manner should abnormal or emergency  
22 conditions occur. Emergency response training is consistent with the description of actions contained in  
23 Chapter 7.0, Contingency Plan, in this permit application. The introductory and continuing training  
24 programs contain the following objectives:

- 25  
26 • Instruct Hanford Facility personnel to perform their duties in a way that ensures Hanford Facility  
27 compliance with WAC 173-303  
28  
29 • Instruct Hanford Facility personnel on the dangerous waste management procedures (including  
30 implementation of the contingency plan) relevant to the job titles/positions in which they are  
31 employed  
32  
33 • Ensure Hanford Facility personnel can respond effectively to emergencies.  
34  
35

36 **8.1.1 Introductory Training**

37 Introductory training includes general Hanford Facility training and TSD unit-specific training. General  
38 Hanford Facility training is described in DOE/RL-91-28, Section 8.1, and is provided in accordance with  
39 the Permit Condition II.C.2. TSD unit-specific training is provided to Hanford Facility personnel  
40 allowing those personnel to work unescorted, and in some cases is required for escorted access. Hanford  
41 Facility personnel cannot perform a task for which they are not trained properly, except to gain required  
42 experience while under the direct supervision of a supervisor or coworker who is properly trained.  
43 Hanford Facility waste management personnel must be trained within 6 months after their employment at  
44 or assignment to the Hanford Facility, or to a new job title/position on the Hanford Facility, whichever is  
45 later.

46  
47 General Hanford Facility training: A description is provided in DOE/RL-91-28, Section 8.1.  
48

1 Contingency Plan training: Hanford Facility personnel receive training on applicable portions of the  
2 *Hanford Emergency Management Plan* Permit Attachment 4 in General Hanford Facility training. In  
3 addition, Hanford Facility personnel receive training on content of the description of actions contained in  
4 contingency plan documentation in Chapter 7.0 of this permit application to be able to effectively respond  
5 to emergencies.

6  
7 Emergency Coordinator training: Hanford Facility personnel who perform emergency coordinator duties  
8 in WAC 173-303-360 (e.g., Building Emergency Director) in the Hanford Incident Command System  
9 receive training on implementation of the contingency plan and fulfilling the position within the Hanford  
10 Incident Command System. These Hanford Facility personnel also must become thoroughly familiar  
11 with applicable contingency plan documentation, operations, activities, location, and properties of all  
12 waste handled, location of all records, and the unit/building layout.

13  
14 Operations training: Dangerous waste management operations training (e.g., waste designation training,  
15 shippers training) is determined on a unit-by-unit basis and considers the type of waste management unit  
16 (e.g., container management unit) and the type of activities performed at the waste management unit (e.g.,  
17 sampling). For example, training provided for management of dangerous waste in containers is different  
18 than the training provided for management of dangerous waste in a tank system. Common training  
19 required for compliance within similar waste management units can be provided in general training and  
20 supplemented at the TSD unit. Training provided for TSD unit-specific operations is identified in the  
21 training plan documentation based on: (1) whether a general training course exists, (2) whether the  
22 training needs to ensure waste management unit compliance with WAC 173-303, and (3) training  
23 commitments agreed to with Ecology.

## 24 25 26 **8.1.2 Continuing Training**

27 Continuing training meets the requirements for WAC 173-303-330(1)(b) and includes general Hanford  
28 Facility training and TSD unit-specific training.

29  
30 General Hanford Facility training: Annual refresher training is provided for General Hanford Facility  
31 training. A description is provided in DOE/RL-91-28, Section 8.1.

32  
33 Contingency Plan training: Annual refresher training is provided for contingency plan training (refer to  
34 description in Chapter 8.0, Section 8.1.1 of this permit application).

35  
36 Emergency Coordinator training: Annual refresher training is provided for Emergency Coordinator  
37 training (refer to description in Chapter 8.0, Section 8.1.1 of this permit application).

38  
39 Operations training: Refresher training occurs on many frequencies (i.e., annual, every other year, every  
40 3 years) for operations training. When justified, some training will not contain a refresher course and will  
41 be identified as a one-time only training course. The TSD unit-specific training plan documentation  
42 specifies the frequency for each training course. Refer to description in Chapter 8.0, Section 8.1.1 in this  
43 permit application.

## 44 45 46 **8.2 DESCRIPTION OF TRAINING DESIGN**

47 Proper design of a training program ensures personnel who perform duties on the Hanford Facility related  
48 to WAC 173-303-330(1)(d) are trained to perform their duties in compliance with WAC 173-303. Actual  
49 job tasks, referred to as duties, are used to determine training requirements. The first step taken to ensure  
50 Hanford Facility personnel have received the proper training is to determine and document the waste

1 management duties by job title/position. The second step compares waste management duties to general  
2 waste management unit training curriculum. If general waste management unit training curriculum does  
3 not address the waste management duties, the training curriculum is supplemented and/or on-the-job  
4 training is provided. The third step summarizes the content of a training course necessary to ensure that  
5 the training provided to each job title/position addresses associated waste management duties. The last  
6 step is to assign training curriculum to Hanford Facility personnel based on the previous evaluation. The  
7 training plan documentation contains this process.

8  
9 Waste management duties include those specified in Chapter 8.0, Section 8.1 of this permit application as  
10 well as those contained in WAC 173-303-330(1)(d). Training elements of WAC 173-303-330(1)(d)  
11 applicable to the WESF operations include the following:

- 12
- 13 • Procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment
- 14 • Communications or alarm systems
- 15 • Response to fires or explosions
- 16 • Shutdown of operations.
- 17

18 Hanford Facility personnel who perform these duties receive training pertaining to their duties. The  
19 training plan documentation described in Chapter 8.0, Section 8.3 of this permit application contains  
20 specific information regarding the types of training Hanford Facility personnel receive based on the  
21 outline in Chapter 8.0, Section 8.1 of this permit application.

### 22 23 24 **8.3 DESCRIPTION OF TRAINING PLAN**

25 In accordance with Permit Condition II.C.3, the unit-specific portion of the *Hanford Facility Dangerous*  
26 *Waste Permit Application* must contain a description of the training plan. Training plan documentation is  
27 maintained outside of a Hanford Facility dangerous waste Part B permit application and the Permit.  
28 Therefore, changes made to training plan documentation are not subject to the HF RCRA Permit  
29 modification process. However, the training plan documentation is prepared to comply with  
30 WAC 173-303-330(2).

31  
32 Documentation prepared to meet the training plan consists of hard copy and/or electronic media as  
33 provided by Permit Condition II.C.1. The training plan documentation consists of one or more  
34 documents and/or a training database with all the components identified in the core document.

35  
36 A description of how training plan documentation meets the three items in WAC 173-303-330(2) is as  
37 follows.

- 38
- 39 1. -330(2)(a): "The job title, job description, and name of the employee filling each job. The job  
40 description must include requisite skills, education, other qualifications, and duties for each position."

41  
42 Description: The specific Hanford Facility personnel job title/position is correlated to the waste  
43 management duties. Waste management duties relating to WAC 173-303 are correlated to training  
44 courses to ensure training is properly assigned.

45  
46 Only names of Hanford Facility personnel who carry out job duties relating to TSD unit waste  
47 management operations at WESF are maintained. Names are maintained within the training plan  
48 documentation. A list of Hanford Facility personnel assigned to WESF is available on request.

49  
50 Information on requisite skills, education, and other qualifications for job titles/positions is addressed  
51 by providing a reference where this information is maintained (e.g., Human Resources). Specific

1 information concerning job title, requisite skills, education, and other qualifications for personnel can  
2 be provided on request.

- 3  
4 2. -330(2)(b): "A written description of the type and amount of both introductory and continuing  
5 training required for each position."

6  
7 Description: In addition to the outline provided in Section 8.1 of this permit application, training  
8 courses developed to comply with the introductory and continuing training programs are identified  
9 and described in the training plan documentation. The type and amount of training is specified in the  
10 training plan documentation as shown in Table 8-1.

- 11  
12 3. -330(2)(c): "Records documenting that personnel have received and completed the training required  
13 by this section. The Department may require, on a case-by-case basis, that training records include  
14 employee initials or signature to verify that training was received."

15  
16 Description: Training records are maintained consistent with DOE/RL-91-28, Section 8.3.

Table 8-1. Waste Encapsulation and Storage Facility Training Matrix.

Hanford Facility RCRA Permit, Attachment 33, Chapter 8.0 Training Category	Training Category*				
	General Hanford Facility training	Contingency Plan training	Emergency Coordinator training	Operations training	
WESF DWTP implementing plan	Orientation Program	Emergency Response (contingency plan)	Emergency Coordinator Training	General Waste Management	Miscellaneous Storage Unit Management
Job title/position					
Nuclear Chemical Operator	X	X		X	X
Shift Operations Supervisor (SOS)	X	X	X	X	X
Operations Manager	X	X	X	X	
Environmental Compliance Officer	X			X	
Non-Resident Waste Services Provider	X			X	

\* Refer to the WESF Dangerous Waste Training Plan for a complete description of coursework in each training category.

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**CONTENTS**

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2 9.0 EXPOSURE INFORMATION REPORT ..... 9-1  
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## 9.0 EXPOSURE INFORMATION REPORT

2 WESF does not store, treat, or dispose of hazardous waste in a surface impoundment or landfill as  
3 defined in 40 CFR 270.10. Therefore, exposure information report requirements under RCRA,  
4 Section 3019, are not applicable.  
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10.0 WASTE MINIMIZATION [D-9]..... 10-1

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## 10.0 WASTE MINIMIZATION [D-9]

2 To fulfill the requirements of 40 CFR 264.73(b)(9), WAC 173-303-380(1)(q), and Hanford Facility  
3 RCRA Permit Condition ILZ a certification that WESF has a waste minimization and pollution  
4 prevention program in place will be entered annually into the WESF operating record (refer to  
5 Chapter 12.0, Reporting and Recordkeeping of this permit application).  
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1 **11.0 CLOSURE AND FINANCIAL ASSURANCE [I AND I-1]**

2 This chapter presents the closure plan for WESF. Closure of WESF will comply with WAC 173-303-610  
3 regulations for TSD units. As a miscellaneous storage unit managing mixed waste in sealed capsules, the  
4 WESF is not anticipated to become contaminated by the dangerous component of the mixed waste.  
5

6 This chapter describes the performance standards that will be met and closure activities that will be  
7 conducted to achieve clean closure for the WESF pool cell and hot cell areas.  
8

9 Please note that source, special nuclear, and byproduct materials, as defined in the AEA, are regulated at  
10 DOE facilities exclusively by DOE acting pursuant to its AEA authority. These materials are not subject  
11 to regulation by the State of Washington. All information contained herein and related to, or describing  
12 AEA-regulated materials and process in any manner, may not be used to create conditions or other  
13 restrictions set forth in any permit, license, order, or any other enforceable instrument. DOE asserts that  
14 pursuant to the AEA, it has sole and exclusive responsibility and authority to regulate source, special  
15 nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on  
16 radionuclides is provided for process description purposes only.  
17

18 WESF is operated as a clean, well-maintained unit. Detailed records are maintained of the materials stored  
19 at WESF. For closure, the unit will be divided into two components: (1) the WESF pool cell area,  
20 consisting of Pool Cells 1 through 8, and 12 (Pool Cells 9, 10, and 11 are outside the TSD unit boundary);  
21 and, (2) WESF hot cell area. For the pool cell and hot cell areas, the closure approach will be closure by  
22 removal or decontamination ("clean close"). Consistent with the criteria that must be met to clean close a  
23 TSD unit, no waste will be closed in place and therefore no post-closure activities will be necessary. Clean  
24 closure will be based on process knowledge indicating that there have been no releases of material from the  
25 capsules during permitted storage.  
26  
27

28 **11.1 CLOSURE PLAN [I-1]**

29 The following sections address closure performance standards and activities.  
30  
31

32 **11.1.1 Closure Performance Standard [I-1a]**

33 This plan has been developed to close the pool cells and hot cells in a manner that meets the closure  
34 performance standards of WAC 173-303-610(2). Clean closure is based on confirmation of no spills or  
35 leaks of mixed waste from the cesium and strontium capsules.  
36

37 The clean closure performance standards are removal of all mixed waste capsules and demonstration, using  
38 process knowledge, that no releases of mixed waste from the capsules have occurred. No new mixed waste  
39 streams or mixed waste volume will be generated during the process since the wastes are in sealed  
40 capsules.  
41

42 With no identified releases of mixed waste, no soil contamination could occur and therefore no soil  
43 remediation is required.  
44

45 If monitoring or inspection of cesium and strontium capsules or of pool cell water indicates a release of  
46 mixed waste from one or more capsules, the Permittee will seek modification of the sitewide permit to

1 appropriately modify this closure plan. This permit modification request will be in accordance with  
2 WAC 173-303-610(3)(b).

3  
4  
5 **11.1.2 Closure Activities [I-1b]**

6 Closure of the WESF pool cells and hot cells will ensure that the pool cell and hot cell areas are not  
7 contaminated with mixed waste or waste residues (contamination is not expected).

8  
9 Closure activities will entail the following.

- 10  
11 • Remove inventory of cesium and strontium capsules from the pool cell and hot cell areas and transfer  
12 of the capsules when a final disposition option becomes available.  
13  
14 • Verify that the water in the pools is not contaminated with mixed waste or mixed waste residues.  
15  
16 • Transfer pool water to the Treated Effluent Disposal Facility (TEDF) or other treatment and/or  
17 disposal facility with necessary authorization and capability to treat pool water at time of closure, if  
18 necessary.  
19  
20 • Hot cell area unit operating records will be reviewed to confirm that no spills/releases have occurred  
21 from any cesium or strontium capsules while in storage.  
22  
23 • Obtain an independent professional engineer certification that closure activities were completed in  
24 accordance with the approved closure plan.  
25  
26

27 **11.1.3 Maximum Extent of Operation [I-1b(1) and I-1c]**

28 The closure plan is limited to the TSD area for Pool Cells 1 through 8 and 12 and Hot Cells F and G in the  
29 225B Building. The waste is stored in capsules in Pool Cells 1, 3 through 7 and 12. The capsules are  
30 stainless steel with maximum outer height of approximately 53 centimeters (~21 inches) and maximum  
31 diameter of approximately 8 centimeters (~3 inches). Some of the cesium capsules are overpacked. There  
32 are a total of 1,936 capsules of which 601 are strontium fluoride and 1,335 are cesium chloride. The  
33 mixed waste constituents are barium, cadmium, chromium, lead, and silver.  
34  
35

36 **11.1.4 Remove Waste Inventory [I-1b(2)]**

37 The capsules will be removed from the pool cell and hot cell areas at the time of closure, no waste will  
38 remain at (in) WESF. The capsules will be relocated to a permitted TSD unit or to a national repository.  
39

40 The capsules are stored in 4 meters (13 feet) of shielding water in Pool Cells 1 and 3 through 7. To move  
41 a capsule into G Cell, it is first moved through transfer ports into Pool Cell 12. The transfer ports connect  
42 Pool Cells 1 through 8 to Pool Cell 12. A transfer port has a ball valve that can be opened and closed to  
43 transfer capsules or water between each of the pool cells and Pool Cell 12. The transfer port is located  
44 approximately 1 meter (3 feet) above the pool cell floor. Once in Pool Cell 12, the capsule is moved down  
45 Pool Cell 12 with tongs towards Hot Cell G and placed on a capsule transfer cart equipped with a trolley  
46 device for raising the capsules into Hot Cell G. Capsules are transferred individually to Hot Cell G  
47 through the capsule transfer chute between Hot Cell G and Pool Cell 12.  
48

1 Capsules will be shipped from WESF in casks approved by DOE and/or the Nuclear Regulatory  
2 Commission. The cask provides shielding and confinement as well as impact, puncture, and thermal  
3 protections during transport.  
4

5 **11.1.4.1 Verify Performance Standard [I-1b(4)]**

6 Verification of no releases to the pool cell and hot cell areas will be determined by evaluation of the  
7 operation records, logbooks, and personnel interviews to verify if there have been any leaking capsules. If,  
8 based on the findings during these reviews a determination has been made that no releases have occurred,  
9 the pool cell and hot cell areas will have met the performance standards.  
10

11 **11.1.4.2 Review Records**

12 WESF records of the operating life of this TSD unit (WESF became active in July 1997) will be reviewed  
13 to ensure that there is no documentation indicating a leak of a capsule while in the pool cells. The records  
14 to be reviewed include the following:  
15

- 16 • Analytical results from monitoring activities
  - 17 • Visual examinations of the capsules conducted throughout the storage period.
- 18  
19

20 **11.2 SCHEDULE FOR CLOSURE [I-1F]**

21 Closure activities will begin after a determination is made on disposition of the cesium and strontium  
22 capsules. At that time, a schedule for closure will be proposed and submitted in accordance with Permit  
23 Condition II.J.3.  
24  
25

26 **11.3 CERTIFICATION OF CLOSURE**

27 The independent registered professional engineer certification of closure will certify that the unit has been  
28 closed in accordance with the specifications in the final approved closure plan to include any approved  
29 permit modifications. The independent registered professional engineer will provide a signed statement  
30 that meets the applicable requirements of WAC 173-303-610(6), certifying that the closure activities were  
31 performed in accordance with the specifications in the approved closure plan. The independent registered  
32 professional engineer certification is to confirm that the activities took place and the unit closed in  
33 accordance with the approved closure plan. A copy of the independent registered professional engineer  
34 certification will be transmitted to Ecology by registered mail within sixty (60) days following completion  
35 of WESF closure activities and placed in the Administrative Record.  
36

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1

## 12.0 REPORTING AND RECORDKEEPING

2 Reports and records applicable to WESF are summarized in the Permit, Attachment 33, Chapter 12.0,  
3 Table 12.1.  
4

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14.0 PART B CERTIFICATION [K]

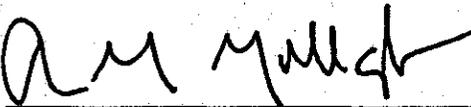
2 The following certification, required by WAC 173-303-810(13), for all applications and reports  
3 submitted to Ecology is hereby included:

4  
5 I certify under penalty of law that this document and all attachments were prepared under my direction or  
6 supervision in accordance with a system designed to assure that qualified personnel properly gather and  
7 evaluate the information submitted. Based on my inquiry of the person or persons who manage the  
8 system, or those persons directly responsible for gathering the information, the information submitted is,  
9 to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are  
10 significant penalties for submitting false information, including the possibility of fine and imprisonment  
11 for knowing violations.  
12  
13  
14  
15  
16

17 

18 \_\_\_\_\_  
19 Owner/Operator  
20 Keith A. Klein, Manager  
21 U.S. Department of Energy,  
22 Richland Operations Office  
23

24 8/28/06  
25 Date

26  
27 

28 \_\_\_\_\_  
29 Co-operator  
30 Ronald G. Gallagher  
31 President and Chief Executive Officer  
32 Fluor Hanford  
33

34 8/04/06  
35 Date

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## 15.0 REFERENCES

DOE/RL-91-28, latest revision, *Hanford Facility Dangerous Waste Permit Application, General Information Portion*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-94-02, latest revision, *Hanford Management Emergency Plan*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, 2006, *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8, for the Treatment, Storage, and Disposal of Dangerous Waste*, Permit Number WA7890008967, Washington State Department of Ecology, Nuclear Waste Program, Olympia, Washington, updated periodically.

Ecology, EPA, and DOE-RL, 2003, *Hanford Federal Facility Agreement and Consent Order*, Washington State Department of Ecology, U.S. Environmental Protection Agency, U.S. Department of Energy, Richland Operations Office, Olympia, Washington, amended periodically.

HNF-SD-WM-DB-034, 1997, *Engineering Report for Natural Phenomena Hazards Survey for the Waste Encapsulation and Storage Facility*, Fluor Hanford, Richland, Washington.

WMP-16937, 2003, *Corrosion Report for Capsule Dry Storage Project*, Fluor Hanford, Richland, Washington.

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Jane Hedges, Program Manager  
Nuclear Waste Program  
Washington State Department of Ecology  
P.O. Box 47600  
Olympia, Washington 98504-7600

Washington State Department of Ecology

F. W. Bond

H0-57

K. A. Conaway

H0-57

G. P. Davis

H0-57

S. Harris, Environmental Compliance  
Confederated Tribes of the Umatilla Indian Reservation  
Hanford Operations Office  
750 Swift Boulevard, Suite 12  
Richland, Washington 99352

G. Bohnee  
Nez Perce Tribe  
P.O. Box 365  
Lapwai, Idaho 83540

R. Jim, Manager  
Environmental Restoration/Waste Management Program Yakama Nation  
P.O. Box 151  
Toppenish, Washington 98948

D. A. Dunning  
Oregon Office of Energy  
625 Marrian Street N.E., Suite 1  
Salem, Oregon 97301-3742

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**STATE ENVIRONMENTAL POLICY ACT  
ENVIRONMENTAL CHECKLIST**

**FOR THE**

**HANFORD FACILITY  
WASTE ENCAPSULATION AND STORAGE FACILITY**

**REVISION 1**

**AUGUST 2006**

**WASHINGTON ADMINISTRATIVE CODE  
ENVIRONMENTAL CHECKLIST  
[WAC 197-11-960]**



1 **8. List any environmental information you know about that has been prepared, or will be**  
2 **prepared, directly related to this proposal.**

3 This revised SEPA Environmental Checklist is being submitted to Ecology concurrently with the final,  
4 certified Part B Permit Application for WESF. Revision 0 of the SEPA Environmental Checklist  
5 (July 1997) was submitted with the Notice of Intent to submit the Part A permit application for  
6 miscellaneous storage at WESF.

7  
8 NEPA documentation pertaining to WESF includes the following.

- 9  
10 • DOE/EIS-0113, *Final Environmental Impact Statement; Disposal of Hanford Defense High-Level,*  
11 *Transuranic and Tank Wastes*, December 1987.  
12  
13 • DOE/EIS-0189F, *Final Environmental Impact Statement for the Tank Waste Remediation System,*  
14 *Richland, Washington*, August 1996.  
15  
16 • DOE/EA-0942, *Environmental Assessment; Return of Isotope Capsules to the Waste Encapsulation*  
17 *and Storage Facility, Hanford Site, Richland, Washington*, March 1992.

18  
19 General information concerning the Hanford Facility environment can be found in the *Hanford Site*  
20 *National Environmental Policy Act (NEPA) Characterization*, PNNL-6415 (latest revision). This  
21 document is updated annually by Pacific Northwest National Laboratory (PNNL), and provides current  
22 information concerning climate and meteorology, ecology, history and archeology, socioeconomic, land  
23 use and noise levels, and geology and hydrology. These baseline data for the Hanford Site and past  
24 activities are useful for evaluating proposed activities and their potential environmental impacts.

25  
26 **9. Do you know whether applications are pending for government approvals of other proposals**  
27 **directly affecting the property covered by your proposal? If yes, explain.**

28 No other permits are pending at this time.

29  
30 **10. List any government approvals or permits that will be needed for your proposal, if known.**

31 Ecology is the lead agency authorized to approve the RCRA Part B Permit Application for WESF. No  
32 other permits are known to be required at this time.

33  
34 **11. Give brief, complete description of your proposal, including the proposed uses and the size of**  
35 **the project and site. There are several questions later in this checklist that ask you to describe**  
36 **certain aspects of your proposal. You do not need to repeat those answers on this page.**

37 WESF (225B Building) is located adjacent to the west end of B Plant (221-B Building) in the 200 East  
38 Area of the Hanford Site. WESF is a two-story structure 48 meters long by 30 meters wide by 12 meters  
39 high at the outside dimensions. The first floor surface area is 1,300 square meters and the second floor is  
40 600 square meters. The ground elevation is about 213 meters above sea level and is approximately  
41 79 meters above the groundwater table.

42  
43 The construction of WESF started in 1971 and was completed in 1973. The original mission of WESF  
44 was to process, encapsulate, and store the waste generated during the chemical reprocessing of defense  
45 fuel on the Hanford Site, thus ensuring isolation of hazardous radioisotopes from the environment.  
46 Processing and encapsulation of the cesium and strontium feed materials were completed in 1985.

1 WESF operations include decontamination of equipment and capsules, and surveillance of stored  
2 capsules. Capsules are expected to be stored at WESF at least until the year 2018.

3  
4 The current WESF mission is to store the cesium-137 and strontium-90 capsules in a safe manner and in  
5 compliance with all applicable rules and regulations. Two areas within WESF will store capsules that  
6 will be managed as waste: (1) Pool Cells 1 through 8 and 12, located within the west side of the  
7 225B Building, which provides underwater storage for radiological protection from the cesium-137 and  
8 strontium-90 capsules; and (2) all hot cells. All hot cells are included for permitting purposes; Hot  
9 Cells F and G currently are planned cells for providing interim dry storage of capsules.

10  
11 Pool Cell 1 is 2.7 meters wide, 6.6 meters long and 5.5 meters deep. Pool Cells 2 through 8 are  
12 1.3 meters wide, 6.6 meters long, and 5.5 meters deep. Pool Cell 12 is 1 meter wide by 19.8 meters long  
13 by 4.7 meters deep. The south end of Pool Cell 12 contains a cask pit 1.3 meters wide by 2.3 meters long  
14 by 5.5 meters deep. Pool Cells 2 through 8 are connected to Pool Cell 12 by transfer ports. A transfer  
15 port is a ball valve that can be opened and closed to transfer capsules or water between each of the pool  
16 cells and Pool Cell 12. The transfer port is located approximately 1 meter above the pool cell floor. All  
17 pool cells have liners constructed of 16 gauge type 304L stainless steel at the sides and 14 gauge type  
18 304L stainless steel flooring. Inactive (not storing capsules) Pool Cells 9 through 11 are not equipped for  
19 storage of capsules and each have three 76-centimeter-thick concrete cover blocks installed. Although all  
20 pool cells except Pool Cell 12 are designed for cover block installation, cover blocks currently are not  
21 placed on active (storing capsules) pool cells to prevent potential damage to the capsules due to a cover  
22 block drop.

23  
24 Hot Cells F and G are located in the south end of the 225B Building and were used for past chemical  
25 reprocessing and encapsulation of the cesium-137 and strontium-90 capsules. The maximum inside  
26 dimensions of cell F are 2.4 meters wide by 2.4 meters long by 4 meters high. The rear portion of the cell  
27 floor is elevated 56 centimeters and is 50 centimeters deep. The floor and lower portion of Hot Cell F  
28 walls are lined with stainless steel. The unlined portions originally were coated with white radiation- and  
29 corrosion-resistant paint. Hot Cell F contains some of the equipment used for decontamination of the  
30 inner capsules.

31  
32 The wall between Hot Cell F and Hot Cell G is 89-centimeters thick and is constructed from high-density  
33 (3,770 kilograms per cubic meter) reinforced structural concrete. The maximum inside dimensions of  
34 Hot Cell G are 4.8 meters wide by 2.4 meters long by 4.1 meters high. The floor and walls of Hot Cell G  
35 are coated with white radiation- and corrosion-resistant paint.

36  
37 The scope of WESF mission currently is focused on maintenance activities and storage and surveillance  
38 of capsules. Additionally, capsule inspection and decontamination could be conducted, if necessary.

39  
40 **12. Location of the proposal. Give sufficient information for a person to understand the precise**  
41 **location of your proposed project, including a street address, if any, and section, township,**  
42 **and range, if known. If a proposal would occur over a range of area, provide the range or**  
43 **boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic**  
44 **map, if reasonably available. While you should submit any plans required by the agency, you**  
45 **are not required to duplicate maps or detailed plans submitted with any permit applications**  
46 **related to this checklist.**

47 WESF is located north of the city of Richland, Washington, in the 200 East Area of the Hanford Site.  
48

- 1 Topographic maps and site plans are included in the *Hanford Facility Dangerous Waste Permit*
- 2 *Application, Waste Encapsulation and Storage Facility* submittal.
- 3

**TO BE COMPLETED BY APPLICANT**

**EVALUATIONS FOR  
AGENCY USE ONLY**

1 **B. ENVIRONMENTAL ELEMENTS**

2 **1. Earth**

3 **a. General description of the site (circle one): Flat, rolling, hilly,**  
4 **steep slopes, mountainous, other \_\_\_\_\_.**

5 Flat.

6  
7 **b. What is the steepest slope on the site (approximate percent**  
8 **slope)?**

9 The approximate slope of the land is less than 2 percent.

10

11 **c. What general types of soils are found on the site? (for example,**  
12 **clay, sandy gravel, peat, muck)? If you know the classification**  
13 **of agricultural soils, specify them and note any prime farmland.**

14 Soil types consist mainly of eolian and fluvial sands and gravel.  
15 More detailed information concerning specific soil classifications  
16 can be found in the *Hanford Site National Environmental Policy Act*  
17 *(NEPA) Characterization*, PNNL-6415 (latest revision). Farming is  
18 not permitted on the Hanford Facility.

19

20 **d. Are there surface indications or history of unstable soils in the**  
21 **immediate vicinity? If so, describe.**

22 No.

23

24 **e. Describe the purpose, type, and approximate quantities of any**  
25 **filling or grading proposed. Indicate source of fill.**

26 No filling or grading is required.

27

28 **f. Could erosion occur as a result of clearing, construction, or use?**  
29 **If so, generally describe.**

30 No.

31

32 **g. About what percent of the site will be covered with impervious**  
33 **surfaces after project construction (for example, asphalt or**  
34 **buildings)?**

35 None. No construction is anticipated.

36

**TO BE COMPLETED BY APPLICANT**

**EVALUATIONS FOR  
AGENCY USE ONLY**

1       **h. Proposed measures to reduce or control erosion, or other**  
2       **impacts to the earth, if any:**

3       None.

4

5       **2. Air**

6       **a. What types of emissions to the air would result from the**  
7       **proposal (i.e., dust, automobile, odors, industrial wood smoke)**  
8       **during construction and when the project is completed? If any,**  
9       **generally describe and give approximate quantities, if known.**

10       Minor amounts of exhaust would be generated by vehicles used by  
11       personnel to gain access to WESF.

12

13       An airborne release could occur as a result of upset conditions  
14       during capsule storage operations. Such a release would not be  
15       expected to exceed immediately dangerous to life and health  
16       concentrations outside the immediate area of the spill/release  
17       because of the small quantity of material that is available for release.

18

19       **b. Are there any off-site sources of emissions or odors that may**  
20       **affect your proposal? If so, generally describe.**

21       No.

22

23       **c. Proposed measures to reduce or control emissions or other**  
24       **impacts to the air, if any?**

25       Good engineering practices would be followed, and actions would  
26       comply with onsite procedures designed to protect the environment  
27       and personnel safety and health. Administrative control practices  
28       and high-efficiency particulate air filters would continue to limit air  
29       emissions as well as protect worker health.

30

31       **3. Water**

32       **a. Surface**

33       **1) Is there any surface water body on or in the immediate**  
34       **vicinity of the site (including year-round and seasonal**  
35       **streams, saltwater, lakes, ponds, wetlands)? If yes, describe**  
36       **type and provide names. If appropriate, state what stream**  
37       **or river it flows into.**

38       No. WESF is approximately 5 kilometers from the Columbia  
39       River. However, WESF is a nonland-based facility as defined in

**TO BE COMPLETED BY APPLICANT**

**EVALUATIONS FOR  
AGENCY USE ONLY**

1 WAC 173-303-282(3)(i). The WAC 173-303-282(6)(c)(i)(B)(I)  
2 requires nonland-based facilities be located at least 152 meters  
3 from any perennial water body. WAC 173-303-282-(6)(d)(i)  
4 requires nonland-based facilities be located at least 152 meters  
5 from any wetlands, designated critical habitats, habitats  
6 designated by the Washington Department of Wildlife as habitat  
7 essential to the maintenance or recovery of any state listed  
8 threatened or endangered wildlife species, natural areas that are  
9 acquired or voluntarily registered or dedicated by the owner, or  
10 state or federally designated wildlife refuges, preserves, or bald  
11 eagle protection areas. WESF is over 152 meters from any of  
12 these areas.

- 13  
14 **2) Will the project require any work over, in, or adjacent to**  
15 **(within 200 feet) the described waters? If yes, please describe**  
16 **and attach available plans.**

17 No.

- 18  
19 **3) Estimate the amount of fill and dredge material that would**  
20 **be placed in or removed from surface water or wetlands and**  
21 **indicate the area of the site that would be affected. Indicate**  
22 **the source of fill material.**

23 None.

- 24  
25 **4) Will the proposal require surface water withdrawals or**  
26 **diversions? Give general description, purpose, and**  
27 **approximate quantities if known.**

28 The water supply for the 200 Areas is pumped from the  
29 Columbia River. WESF operations use relatively little of this  
30 overall withdrawal. The estimated amounts are insignificant  
31 compared to normal daily water use in the 200 Areas.  
32

- 33 **5) Does the proposal lie within a 100-year floodplain? If so,**  
34 **note location on the site plan.**

35 No. WESF is not within the 100-year or 500-year floodplain  
36 [*Hanford Site National Environmental Policy Act (NEPA)*  
37 *Characterization, PNNL-6415 (latest revision)*].  
38

- 39 **6) Does the proposal involve any discharges of waste materials**  
40 **to surface waters? If so, describe the type of waste and**  
41 **anticipated volume of discharge.**

42 No.

**TO BE COMPLETED BY APPLICANT**

**EVALUATIONS FOR  
AGENCY USE ONLY**

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**b. Ground**

- 1) **Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.**

No.

- 2) **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

None.

**c. Water Run-off (including storm water)**

- 1) **Describe the source of run-off (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

The Hanford Facility receives only 15.2 to 17.8 centimeters of annual precipitation. Precipitation runs off the existing buildings and seeps into the soil on and near the buildings. The precipitation does not reach the groundwater or surface waters.

Precipitation would not come into contact with any of the liquid waste treated and/or stored.

- 2) **Could waste materials enter ground or surface waters? If so, generally describe.**

Engineering controls during operational activities will prevent dangerous waste from entering the groundwater.

**d. Proposed measures to reduce or control surface, ground, and run-off water impacts, if any:**

Measures would involve general engineering controls, including routine inspections.

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**EVALUATIONS FOR  
AGENCY USE ONLY**

1 **4. Plants**

2 **a. Check or circle the types of vegetation found on the site.**

- 3  deciduous tree: alder, maple, aspen, other  
4  evergreen tree: fir, cedar, pine, other  
5  shrubs  
6  grass  
7  pasture  
8  crop or grain  
9  wet soil plants: cattail, buttercup, bulrush, skunk cabbage,  
10 other  
11  water plants: water lily, eelgrass, milfoil, other  
12  other types of vegetation  
13

14 The most common vegetation community in the 200 East Area is  
15 sagebrush/cheatgrass or Sandberg's bluegrass. Native vegetation in  
16 the immediate vicinity of WESF has been eradicated.  
17

18 **b. What kind and amount of vegetation will be removed or**  
19 **altered?**

20 None.  
21

22 **c. List threatened or endangered species known to be on or near**  
23 **the site.**

24 The Hanford Facility contains some federal and state listed  
25 threatened and endangered plant and animal species. Additional  
26 information on species can be found in *Hanford Site National*  
27 *Environmental Policy Act (NEPA) Characterization, PNNL-6415*  
28 (latest revision).  
29

30 **d. Proposed landscaping, use of native plants, or other measures to**  
31 **preserve or enhance vegetation on the site, if any:**

32 None.  
33

34 **5. Animals**

35 **a. Indicate (by underlining) any birds and animals which have**  
36 **been observed on or near the site or are known to be on or near**  
37 **the site:**

38 birds: Raptors (burrowing owls, ferruginous, redtail, and Swainson's  
39 hawks) eagles, songbirds,  
40 mammals: deer, elk, coyotes, rabbits, rodents.

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**EVALUATIONS FOR  
AGENCY USE ONLY**

1  
2 Additional information on animals can be found in *Hanford Site*  
3 *National Environmental Policy Act (NEPA) Characterization,*  
4 *PNNL-6415* (latest revision).  
5

6  
7 **b. List any threatened or endangered species known to be on or**  
8 **near the site.**

9 One federal and state listed threatened or endangered specie has  
10 been identified on the 1,517 square kilometer Hanford Site along the  
11 Columbia River: the bald eagle. In addition, the state listed white  
12 pelican, sandhill crane, and ferruginous hawk also occur on or  
13 migrate through the Hanford Site.  
14

15 **c. Is the site part of a migration route? If so, explain.**

16 The Hanford Site is a part of the broad Pacific Flyway. However,  
17 WESF is not known as a permanent haven for migratory birds.  
18

19 **d. Proposed measures to preserve or enhance wildlife, if any:**

20 This project contains no specific measures to preserve or enhance  
21 wildlife.  
22

23 **6. Energy and Natural Resources**

24 **a. What kinds of energy (electric, natural gas, oil, wood stove,**  
25 **solar) will be used to meet the completed project's energy needs?**  
26 **Describe whether it will be used for heating, manufacturing, etc.**

27 Diesel fuel, gasoline, and oil are used for operations equipment.  
28

29 **b. Would your project affect the potential use of solar energy by**  
30 **adjacent properties? If so, generally describe.**

31 No.  
32

33 **c. What kinds of energy conservation features are included in the**  
34 **plans of this proposal? List other proposed measures to reduce**  
35 **or control energy impacts, if any:**

36 None.  
37

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**EVALUATIONS FOR  
AGENCY USE ONLY**

1 **7. Environmental Health**

- 2 **a. Are there any environmental health hazards, including exposure**  
3 **to toxic chemicals, risk of fire and explosion, spill, or hazardous**  
4 **waste that could occur as a result of this proposal? If so,**  
5 **describe.**

6 Possible environmental health hazards to personnel could arise from  
7 activities at WESF. The hazard could come from exposure to  
8 radioactive and/or chemical materials. Stringent administrative  
9 controls and engineered barriers will be used to minimize the  
10 probability of even a minor incident and/or accident. A radioactive  
11 and/or chemical spill, release, fire, or explosion could occur only as  
12 a result of a simultaneous breakdown in multiple barriers or a  
13 catastrophic natural forces event.  
14

15 **1) Describe special emergency services that might be required.**

16 Hanford Site security, fire response, and ambulance services are  
17 on call at all times in the event of an onsite emergency. Hanford  
18 Site emergency services personnel are trained specially to  
19 manage a variety of circumstances involving chemical and/or  
20 mixed waste constituents and situations.  
21

22 **2) Proposed measures to reduce or control environmental**  
23 **health hazards, if any:**

24 All personnel are trained to follow proper procedures during  
25 WESF operations to minimize potential exposure. For example,  
26 chemical and radiological safety hazards would be mitigated by  
27 preventing direct contact with the residual chemical  
28 constituents; and protective clothing, appropriate training, and  
29 respiratory protection used by onsite personnel as necessary. As  
30 low as reasonably achievable (ALARA) principles would be  
31 applied during operations.  
32

33 **b. Noise**

34 **1) What type of noise exists in the area which may affect your**  
35 **project (for example: traffic, equipment, operation, other)?**

36 While there is a minor amount of traffic, operation, and  
37 equipment noise in the vicinity, there would be minimal affect to  
38 personnel at WESF.  
39

40 **2) What types and levels of noise would be created by or**  
41 **associated with the project on a short-term or a long-term**

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**EVALUATIONS FOR  
AGENCY USE ONLY**

1           **basis (for example: traffic, construction, operation, other)?**  
2           **Indicate what hours noise would come from the site.**

3           Minor amounts of noise from traffic and equipment are expected  
4           during operations.

5  
6           **3) Proposed measures to reduce or control noise impacts, if**  
7           **any:**

8           The pool cell area is posted as a hearing protection area (noise  
9           from recirculation pumps.

10

11   **8. Land and Shoreline Use**

12           **a. What is the current use of the site and adjacent properties?**

13           The Hanford Facility is a single RCRA facility identified by the  
14           U.S. Environmental Protection Agency (EPA)/State Identification  
15           Number WA7890008967 that consists of over 70 TSD units  
16           conducting dangerous waste management activities. These TSD  
17           units are included in the *Hanford Facility Dangerous Waste Part A*  
18           *Permit Application* (DOE/RL-88-21). The Hanford Facility consists  
19           of all contiguous land, and structures, other appurtenances, and  
20           improvements on the land, used for recycling, reusing, reclaiming,  
21           transferring, storing, treating, or disposing of dangerous waste,  
22           which, for the purposes of the RCRA, are owned by the  
23           U.S. Government and operated by the DOE-RL (excluding lands  
24           north and east of the Columbia River, river islands, lands owned or  
25           used by the Bonneville Power Administration, lands leased to  
26           Energy Northwest, and lands owned by or leased to Washington  
27           State).

28

29           **b. Has the site been used for agriculture? If so, describe.**

30           No portion of the 200 Areas has been used for agricultural purposes  
31           since 1943.

32

33           **c. Describe any structures on the site.**

34           WESF is located in the 200 East Area and includes numerous  
35           buildings and structures (refer to Section A.11).

36

37           **d. Will any structures be demolished? If so, what?**

38           None.

39

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**EVALUATIONS FOR  
AGENCY USE ONLY**

1 **e. What is the current zoning classification of the site?**

2 The Hanford Site is currently included in Public Lands designation  
3 in the Benton County Comprehensive Plan (June 22, 1998) (internet  
4 address: <http://206.61.210.104/pl/compplan/forward.htm>). The Plan  
5 is being revised, and will address the Hanford Site as a separate  
6 geographic component, or "Sub-Area" with its own Land Use Plan  
7 (under development as Chapter 13 in the aforementioned Benton  
8 County Comprehensive Plan).

9  
10 **f. What is the current comprehensive plan designation of the site?**

11 The Hanford Comprehensive Land-Use Plan Environmental Impact  
12 Statement Record of Decision (64 FR 61615, November 12, 1999)  
13 stated that the Central Plateau (200 Areas) geographic area is  
14 designated Industrial-Exclusive.

15  
16  
17 **g. If applicable, what is the current shoreline master program  
18 designation of the site?**

19 Does not apply.

20  
21 **h. Has any part of the site been classified as an "environmentally  
22 sensitive" area? If so, specify.**

23 No part of WESF has been classified as "environmentally sensitive."  
24

25 **i. Approximately how many people would reside or work in the  
26 completed project?**

27 No people reside at WESF. Approximately 25 people are involved  
28 in day-to-day operations of WESF.  
29

30 **j. Approximately how many people would the completed project  
31 displace?**

32 None.

33  
34 **k. Proposed measures to avoid or reduce displacement impacts, if  
35 any:**

36 Does not apply.  
37

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**EVALUATIONS FOR  
AGENCY USE ONLY**

1        **l. Proposed measures to ensure the proposal is compatible with**  
2        **existing and projected land uses and plans, if any:**

3            Does not apply (refer to Section B.8.f.).  
4

5        **9. Housing**

6        **a. Approximately how many units would be provided, if any?**  
7        **Indicate whether high, middle, or low-income housing.**

8            None.  
9

10       **b. Approximately how many units, if any, would be eliminated?**  
11       **Indicate whether high, middle, or low-income housing.**

12           None.  
13

14       **c. Proposed measures to reduce or control housing impacts, if any:**

15           Does not apply.  
16

17       **10. Aesthetics**

18       **a. What is the tallest height of any proposed structure(s), not**  
19       **including antennas; what is the principal exterior building**  
20       **material(s) proposed?**

21           No new structures are being proposed. The unit is located in an  
22           existing building, which is approximately 12 meters high.  
23

24       **b. What views in the immediate vicinity would be altered or**  
25       **obstructed?**

26           None.  
27

28       **c. Proposed measures to reduce or control aesthetic impacts, if**  
29       **any:**

30           None.  
31

32       **11. Light and Glare**

33       **a. What type of light or glare will the proposal produce? What**  
34       **time of day would it mainly occur?**

35           Nighttime lighting provides a continuous operations environment  
36           and necessary security requirements.

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**EVALUATIONS FOR  
AGENCY USE ONLY**

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**b. Could light or glare from the finished project be a safety hazard or interfere with views?**

No.

**c. What existing off-site sources of light or glare may affect your proposal?**

None.

**d. Proposed measures to reduce or control light and glare impacts, if any:**

None.

**12. Recreation**

**a. What designated and informal recreational opportunities are in the immediate vicinity?**

None.

**b. Would the proposed project displace any existing recreational uses? If so, describe.**

No.

**c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any?**

None.

**13. Historic and Cultural Preservation**

**a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.**

No places or objects listed on, or proposed for national, state, or local preservation registers are known to be next to WESF. WESF has been determined to be eligible for the National Register of Historic Places as a contributing property in the Manhattan Project/Cold War Historic District. Additional information

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**EVALUATIONS FOR  
AGENCY USE ONLY**

1 concerning Hanford Site cultural resources can be found in  
2 PNNL-6415 (latest revision).

- 3  
4 **b. Generally describe any landmarks or evidence of historic,**  
5 **archaeological, scientific, or cultural importance known to be on**  
6 **or next to the site.**

7 See response to B.13.A. There are no known archaeological or  
8 Native American religious sites in the WESF area.

- 9  
10 **c. Proposed measures to reduce or control impacts, if any:**

11 See response to B.13.A.

12  
13 **14. Transportation**

- 14 **a. Identify public streets and highways serving the site, and**  
15 **describe proposed access to the existing street system. Show on**  
16 **site plans, if any.**

17 Does not apply.

- 18  
19 **b. Is site currently served by public transit? If not, what is the**  
20 **approximate distance to the nearest transit stop?**

21 WESF is not accessible to the public and is not served by public  
22 transit. It is approximately 40 kilometers to the city of Richland  
23 with the nearest transit stop.

- 24  
25 **c. How many parking spaces would the completed project have?**  
26 **How many would the project eliminate?**

27 Not applicable.

- 28  
29 **d. Will the proposal require any new roads or streets, or**  
30 **improvements to existing roads or streets, not including**  
31 **driveways? If so, generally describe (indicate whether public or**  
32 **private).**

33 No.

- 34  
35 **e. Will the project use (or occur in the immediate vicinity of)**  
36 **water, rail, or air transportation? If so, generally describe.**

37 No.

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**EVALUATIONS FOR  
AGENCY USE ONLY**

1 **f. How many vehicular trips per day would be generated by the**  
2 **completed project? If known, indicate when peak volumes**  
3 **would occur.**

4 The number of vehicular trips would remain at the present rate.  
5

6 **g. Proposed measures to reduce or control transportation impacts,**  
7 **if any:**

8 None.  
9

10 **15. Public Services**

11 **a. Would the project result in an increased need for public services**  
12 **(for example: fire protection, police protection, health care,**  
13 **schools, other)? If so, generally describe.**

14 No.  
15

16 **b. Proposed measures to reduce or control direct impacts on public**  
17 **services, if any:**

18 Does not apply.  
19

20 **16. Utilities**

21 **a. Circle utilities currently available at the site: electricity, natural**  
22 **gas, water, refuse service, telephone, sanitary sewer, septic**  
23 **system, other:**

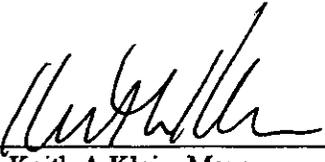
24 Electricity, telephone, sewer, water, and refuse collection are  
25 available at WESF.  
26

27 **b. Describe the utilities that are proposed for the project, the utility**  
28 **providing the service, and the general construction activities on**  
29 **the site or in the immediate vicinity which might be needed.**

30 No new utilities are proposed for WESF.

1 **SIGNATURES**

2  
3 The above answers are true and complete to the best of my knowledge. I understand that the lead agency  
4 is relying on them to make its decision.

5  
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7  
8  
9 

*Aug 28, 2006*

10 Mr. Keith A Klein, Manager  
11 U.S. Department of Energy  
12 Richland Operations Office

Date