



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

0074129

OCT 12 2007

07-SED-0390

Ms. Greta P. Davis
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Blvd.
Richland, Washington 99354

Dear Ms. Davis:

TRANSMITTAL OF THE 224-T TRANSURANIC WASTE STORAGE AND ASSAY FACILITY PART A FORM, CLOSURE PLAN, AND STATE ENVIRONMENTAL POLICY ACT CHECKLIST (TSD: S-2-2)

This letter transmits the 224-T Transuranic Waste Storage and Assay Facility Part A Form, Revision 7, Closure Plan, and State Environmental Policy Act Checklist to support incorporation of the 224-T Transuranic Waste Storage and Assay Facility into the Hanford Facility Resource Conservation and Recovery Act Permit, Part V.

A draft of the Part A Form was provided to the State of Washington, Department of Ecology staff electronically for review and comment. Comments received were addressed and incorporated. The Closure Plan completed public involvement in Calendar Year 2004 with the Engineering Evaluation/Cost Analysis for the 224-T Plutonium Concentration Facility (refer to the Administrative Record Accession #D3683669). The U.S. Department of Energy, Richland Operations Office is requesting approval of the Part A Form, Revision 7.

If you have any questions, please contact me, or your staff may contact Rob G. Hastings, Acting Assistant Manager for Safety and Engineering, on (509) 376-9824.

Sincerely,


David A. Brockman
Manager

SED:ACM

Enclosures

cc: See page 2

RECEIVED
OCT 16 2007
EDMC

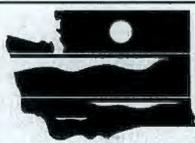
Ms. Greta P. Davis
07-SED-0390

-2-

OCT 12 2007

cc w/o encl:
F. W. Bond, Ecology
J. A. Hedges, Ecology
J. L. Nuzum, FHI

cc w/encl: *4-0-1*
Administrative Record, HF RCRA Permit, TSD: S-2-2 H6-08
Environmental Portal, LMSI
Ecology NWP Library
HF Operating Record (S. A. Thompson, FHI)



WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

**Dangerous Waste Permit Application
Part A Form**

Date Received			Reviewed by:			Date:		
Month	Day	Year	Approved by:			Date:		

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

VI. Facility contact (Person to be contacted regarding waste activities at facility)												
Name (last)						(first)						
Brockman						David						
Job Title						Phone Number (area code and number)						
Manager						(509) 376-6880						
Contact Address												
Street or P.O. Box												
P.O. Box 550												
City or Town						State		ZIP Code				
Richland						WA		99352				
VII. Facility Operator Information												
A. Name						Phone Number (area code and number)						
Department of Energy Owner/Operator Fluor Hanford Co-Operator for 224-T TRUSAF*						(509) 376-6880 (509) 376-3576 *						
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						
VIII. Facility Owner Information												
A. Name						Phone Number (area code and number)						
David A. Brockman, Operator/Facility-Property Owner						(509) 376-6880						
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		
IX. NAICS Codes (5/6 digit codes)												
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

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	0	1	416,395	L	001	1							
2							2							
3							3							
4							4							
5							5							
6							6							
7							7							
8							8							
9							9							
1 0							1 0							
1 1							1 1							
1 2							1 2							
1 3							1 3							
1 4							1 4							
1 5							1 5							
1 6							1 6							
1 7							1 7							
1 8							1 8							
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 1	227	K	S	0	1				Includes Debris
2	D 0 0 2		K	S	0	1				Includes Debris
3	D 0 0 3		K	S	0	1				Includes Debris
4	D 0 0 4		K	S	0	1				Includes Debris
5	D 0 0 5		K	S	0	1				Includes Debris
6	D 0 0 6		K	S	0	1				Includes Debris
7	D 0 0 7		K	S	0	1				Includes Debris
8	D 0 0 8	454	K	S	0	1				Includes Debris
9	D 0 0 9	227	K	S	0	1				Includes Debris
10	D 0 1 0		K	S	0	1				Includes Debris
11	D 0 1 1		K	S	0	1				Includes Debris
12	D 0 1 2		K	S	0	1				Includes Debris
13	D 0 1 3		K	S	0	1				Includes Debris
14	D 0 1 4		K	S	0	1				Includes Debris
15	D 0 1 5		K	S	0	1				Includes Debris
16	D 0 1 6		K	S	0	1				Includes Debris
17	D 0 1 7		K	S	0	1				Includes Debris
18	D 0 1 8		K	S	0	1				Includes Debris
19	D 0 1 9		K	S	0	1				Includes Debris
20	D 0 2 0		K	S	0	1				Includes Debris
21	D 0 2 1		K	S	0	1				Includes Debris
22	D 0 2 2		K	S	0	1				Includes Debris
23	D 0 2 3		K	S	0	1				Includes Debris
24	D 0 2 4		K	S	0	1				Includes Debris
25	D 0 2 5		K	S	0	1				Includes Debris

EPA/State ID Number	W	A	7	8	9	0	0	0	8	9	6	7
---------------------	---	---	---	---	---	---	---	---	---	---	---	---

Continuation of Section XIV. Description of Dangerous Waste

Line Number	A. Dangerous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	D. Process							(2) Process Description [If a code is not entered in D (1)]		
	(1) Process Codes (enter)															
366	P	0	7	8		K	S	0	1							Includes Debris
367	P	0	8	1		K	S	0	1							Includes Debris
368	P	0	8	2		K	S	0	1							Includes Debris
369	P	0	8	4		K	S	0	1							Includes Debris
370	P	0	8	5		K	S	0	1							Includes Debris
371	P	0	8	7		K	S	0	1							Includes Debris
372	P	0	8	8		K	S	0	1							Includes Debris
373	P	0	8	9		K	S	0	1							Includes Debris
374	P	0	9	2		K	S	0	1							Includes Debris
375	P	0	9	3		K	S	0	1							Includes Debris
376	P	0	9	4		K	S	0	1							Includes Debris
377	P	0	9	5		K	S	0	1							Includes Debris
378	P	0	9	6		K	S	0	1							Includes Debris
379	P	0	9	7		K	S	0	1							Includes Debris
380	P	0	9	8		K	S	0	1							Includes Debris
381	P	0	9	9		K	S	0	1							Includes Debris
382	P	1	0	1		K	S	0	1							Includes Debris
383	P	1	0	2		K	S	0	1							Includes Debris
384	P	1	0	3		K	S	0	1							Includes Debris
385	P	1	0	4		K	S	0	1							Includes Debris
386	P	1	0	5		K	S	0	1							Includes Debris
387	P	1	0	6		K	S	0	1							Includes Debris
388	P	1	0	8		K	S	0	1							Includes Debris
389	P	1	0	9		K	S	0	1							Includes Debris
390	P	1	1	0		K	S	0	1							Includes Debris
391	P	1	1	1		K	S	0	1							Includes Debris
392	P	1	1	2		K	S	0	1							Includes Debris
393	P	1	1	3		K	S	0	1							Includes Debris
394	P	1	1	4		K	S	0	1							Includes Debris
395	P	1	1	5		K	S	0	1							Includes Debris
396	P	1	1	6		K	S	0	1							Includes Debris
397	P	1	1	7		K	S	0	1							Includes Debris
398	P	1	1	8		K	S	0	1							Includes Debris
399	P	1	1	9		K	S	0	1							Includes Debris

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 ¼ mile of the facility property boundary. The instructions provide additional information on meeting these requirements.

XVI. Facility Drawing

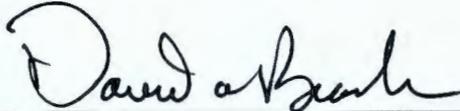
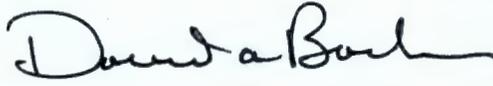
All existing facilities must include a scale drawing of the facility (refer to Instructions for more detail).

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

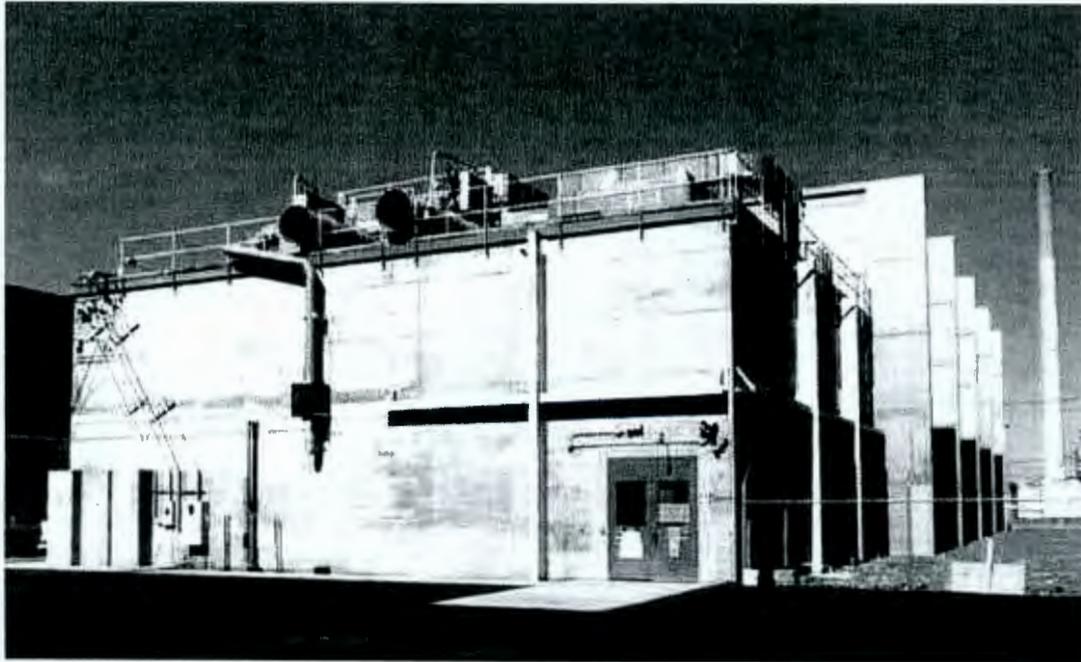
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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.

<p>Operator Name and Official Title (type or print) David A. Brockman, Manager U.S. Department of Energy Richland Operations Office</p>	<p>Signature </p>	<p>Date Signed 10/12/07</p>
<p>Co-Operator* Name and Official Title (type or print) Cornelius M. Murphy President and Chief Executive Officer Fluor Hanford</p>	<p>Signature </p>	<p>Date Signed 8/15/07</p>
<p>Co-Operator* – Address and Telephone Number 2420 Stevens Center P.O. Box 1000 Richland, WA 99352 (509) 376-3576</p>		
<p>Facility-Property Owner Name and Official Title (type or print) David A. Brockman, Manager U.S. Department of Energy Richland Operations Office</p>	<p>Signature </p>	<p>Date Signed 10/12/07</p>

Comments

[Empty comment box]

224-T Transuranic Waste Storage and Assay Facility



224-T TRUSAF

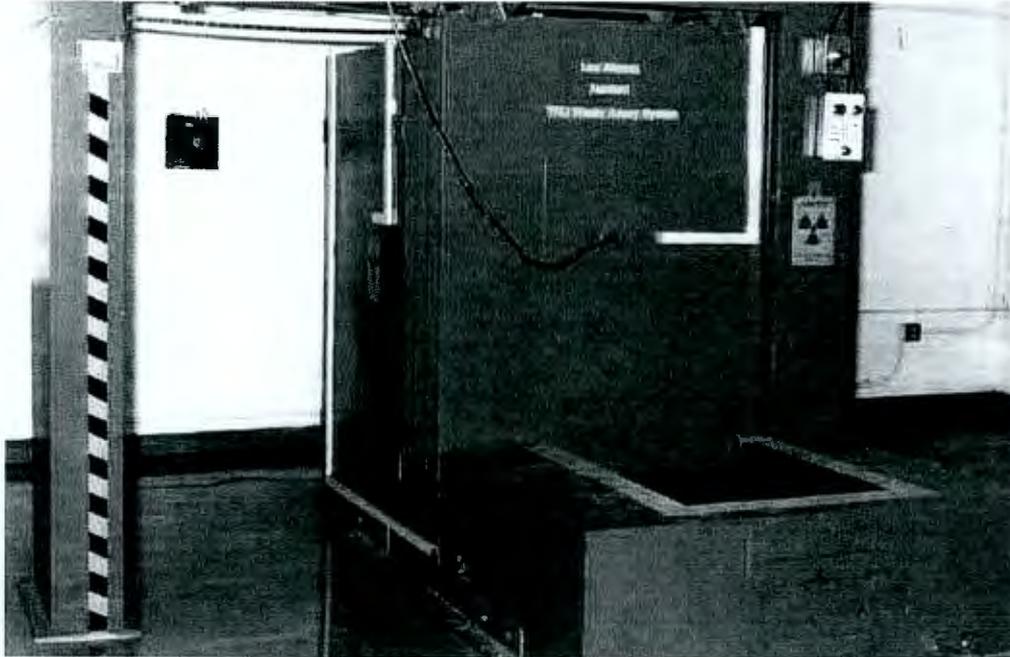
95030798-31CN
PHOTO TAKEN 1995



224-T TRUSAF

95030798-15CN
PHOTO TAKEN 1995

224-T Transuranic Waste Storage and Assay Facility



Transuranic Waste Assayer

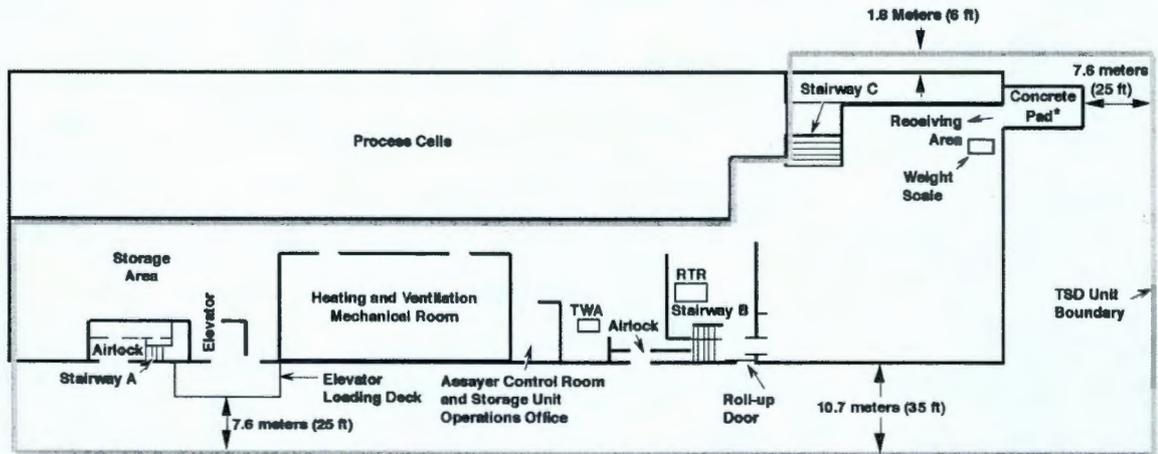
95030798-1CN
PHOTO TAKEN 1995



Real-Time Radiography X-Ray System

95030798-4CN
PHOTO TAKEN 1995

224-T Transuranic Waste Storage and Assay Facility



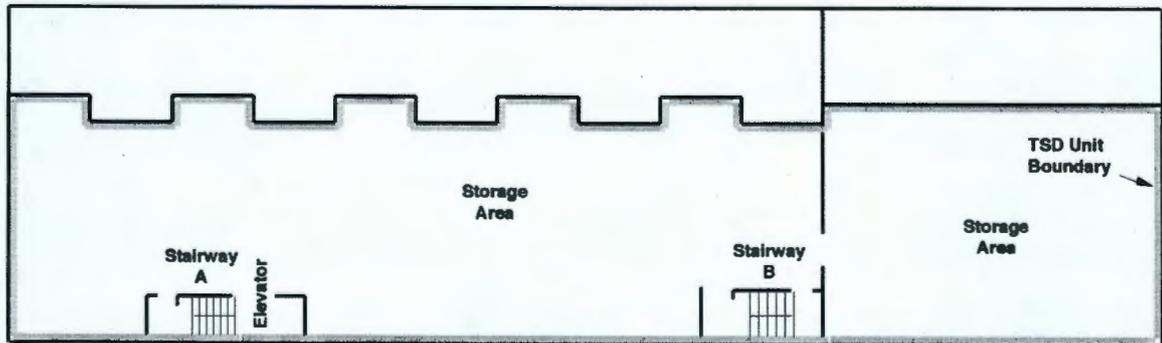
TWA = transuranic waste assayer.

H8604015.3

RTR = real-time radiography x-ray system.

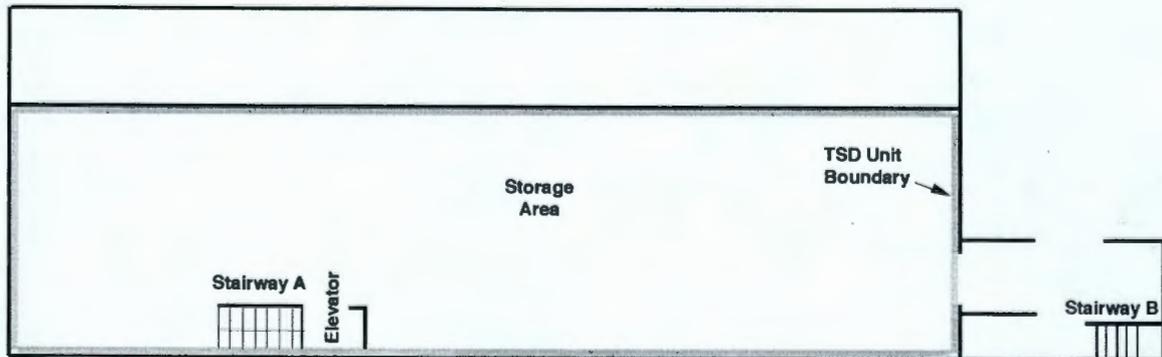
* Primary loading and unloading pad.

1st Floor



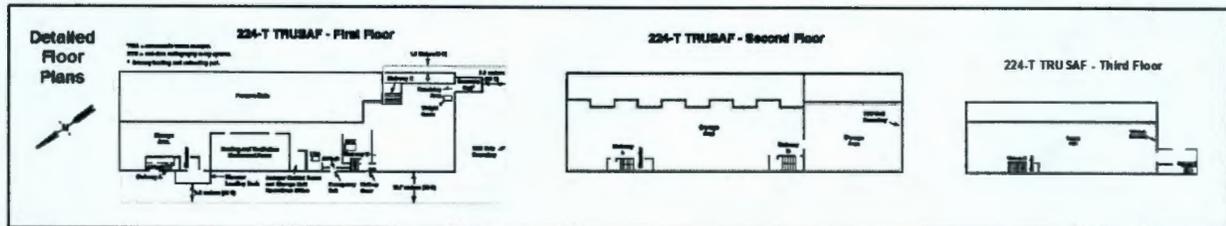
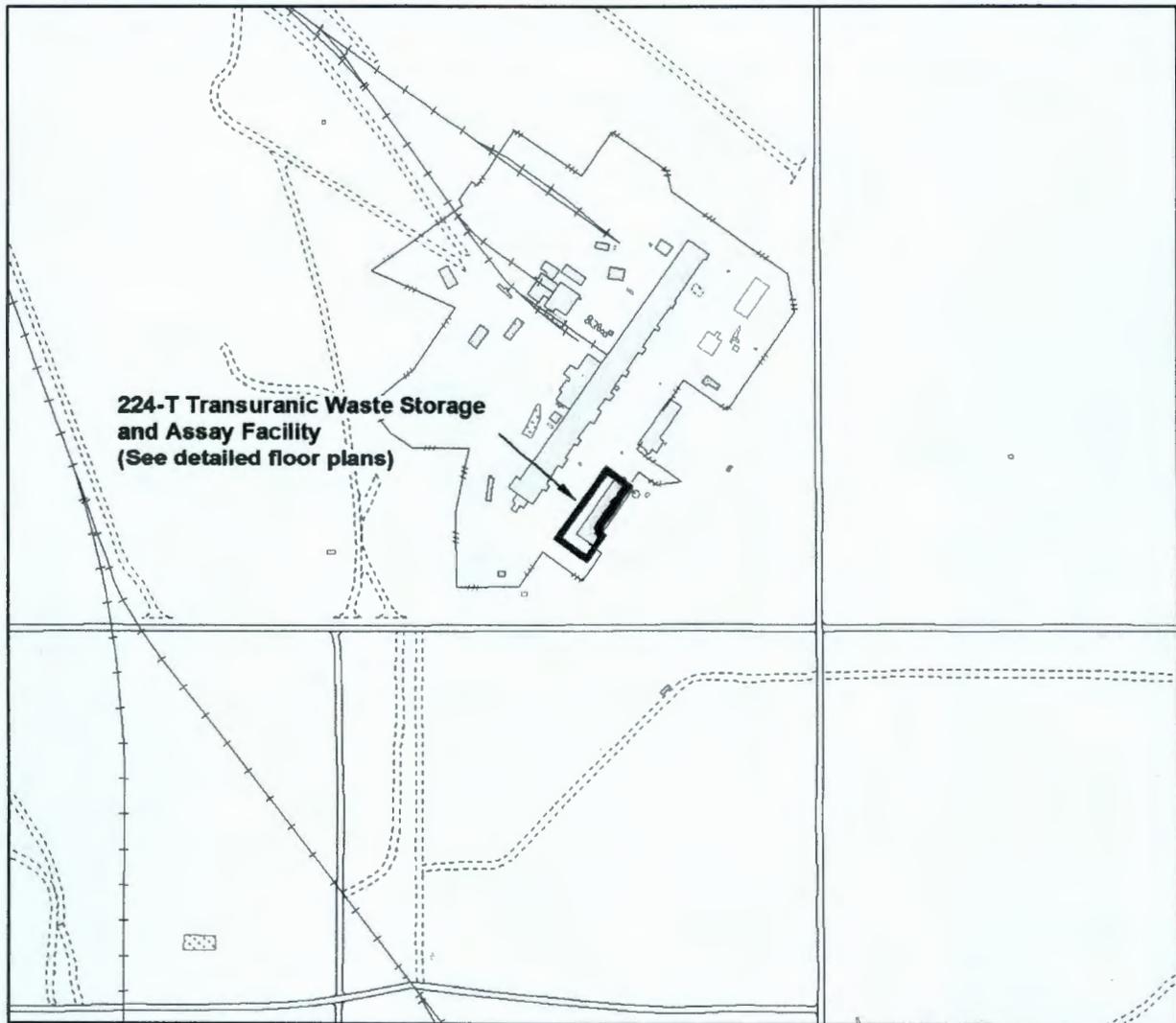
H8504015.2

2nd Floor



H8504015.1

3rd Floor



224-T Transuranic Waste Storage and Assay Facility

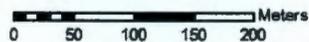
Prepared for:
 US DEPARTMENT OF ENERGY
 RICHLAND OPERATIONS OFFICE



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

INTENDED USE: REFERENCE ONLY

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



O:\Projects\RCRA_TSD\050614_2ndPriorityFacilityTopos2005_Thompson\Maps\051011_224TTRUSAF_LineDwg_85x11_Rev1.mxd - 11/3/2005 @ 4:32:42 PM

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**STATE ENVIRONMENTAL POLICY ACT
Environmental Checklist**

224-T Transuranic Waste Storage and Assay Facility

Revision 0

September 2007

Washington Administrative Code
Environmental Checklist
[WAC 197-11-960]

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1 **A. BACKGROUND**

2 **A.1. Project Name**

3 This *State Environmental Policy Act (SEPA) of 1971* Environmental Checklist is being submitted for the
4 closure of the 224-T Transuranic Waste Storage and Assay Facility (224-T TRUSAF). The
5 224-T TRUSAF stored transuranic waste, transuranic mixed waste, mixed waste, and other properly
6 characterized and packaged low-level waste. Dangerous wastes were removed from 224-T TRUSAF and
7 the unit is no longer being operated as a TSD unit.

8 **A.2. Applicant Name**

9 U.S. Department of Energy, Richland Operations Office (DOE-RL)

10 **A.3. Applicant Address and Phone Number**

11 U.S. Department of Energy
12 Richland Operations Office
13 P.O. Box 550
14 Richland, Washington 99352
15 Contact:

16 David A. Brockman, Manager
17 Richland Operations Office
18 (509) 376-7395

19 **A.4. Date Checklist Prepared**

20 September 2007

21 **A.5. Agency Requesting Checklist**

22 Washington State Department of Ecology (Ecology)
23 P.O. Box 47600
24 Olympia, Washington 98504-7600

25 **A.6. Timing or Schedule**

26 This SEPA Environmental Checklist is submitted concurrently with the 224-T TRUSAF Part A Form,
27 and RCRA 224-T TRUSAF Closure Plan.

28 **A.7. Future Proposals**

29 Yes. The 224-T Plutonium Concentration Facility remediation, which will include the 224-T TRUSAF
30 TSD unit, will be conducted as a Comprehensive Environmental Response, Compensation, and Liability
31 Act (CERCLA) removal action. The response action will be conducted as described in the joint
32 Department of Energy/U.S. Environmental Protection Agency (EPA) policy, *Policy on Decommissioning*
33 *Department of Energy Facilities under CERCLA*, for decommissioning surplus DOE facilities consistent
34 with the requirements of the CERCLA.

35 Closure activities will be integrated with the implementation of the Action Memorandum for the
36 Non-Time Critical Removal Action for the 224-T Plutonium Concentration Facility (DOE-RL-2004-68),
37 Revision 0 (Action Memo) based on the Engineering Evaluation/Cost Analysis (EE/CA) for
38 224-T Plutonium Concentration Facility (DOE/RL-2003-62) Revision 1. The Action memo establishes

1 that the 224-T facility will be decontaminated and decommissioned with the material being disposed of
2 in ERDF.

3 **A.8. Environmental Information**

- 4 • DOE/EIS-0286F, *Final Hanford Site Solid (Radioactive and Hazardous) Waste Program*
5 *Environmental Impact Statement, Richland, Washington* (December 2003).
- 6 • Closure activities will be integrated with the implementation of the Action memo for
7 224-T Plutonium Concentration Facility. The Action memo establishes that the 224-T facility be
8 decontamination and decommissioned with the material being disposed of in ERDF.
- 9 • General information concerning the Hanford Facility environment can be found in the *Hanford Site*
10 *National Environmental Policy Act (NEPA) Characterization*, PNNL-6415, Revision 17,
11 September 2005. This document provides information concerning climate and meteorology, ecology,
12 history and archeology, socioeconomic, land use and noise levels, and geology and hydrology. These
13 baseline data for the Hanford Site and past activities are useful for evaluating proposed activities and
14 their potential environmental impacts.

15 **A.9. Pending Approvals**

16 No other applications are pending.

17 **A.10. Permit Information**

18 Ecology is the lead regulatory agency authorized to approve the closure plan in the Hanford Facility
19 RCRA Permit (Part V, Closure Unit 10, 224-T TRUSAF) - pursuant to the requirements of
20 WAC 173-303.

21 No other permits are known to be required at this time.

22 **A.11. Project Description**

23 The 224-T Transuranic Waste Storage and Assay Facility (224-T TRUSAF) treatment, storage, and/or
24 disposal unit is part of the 224-T Plutonium Concentration Facility. The 224-T Plutonium Concentration
25 Facility is adjacent to T Plant in the 200 West Area. The 224-T TRUSAF stored transuranic waste,
26 transuranic mixed waste, mixed waste, and other properly characterized and packaged low-level waste.
27 Dangerous wastes were removed from 224-T TRUSAF and the unit is no longer being operated as a TSD
28 unit.

29 A more detailed discussion of the waste types and known characteristics of the waste are provided in the
30 Sections 3.0 and 4.0, respectively of the RCRA closure plan planned for incorporation into the Hanford
31 Facility RCRA Permit, Part V, Closure Unit 10, 224-T TRUSAF.

32 The 224-T TRUSAF consisted of the following areas:

- 33 • Administration office
- 34 • Real Time Radiography room
- 35 • Transuranic waste assayer room
- 36 • Assay control room and storage unit operations office
- 37 • Elevator and stairways
- 38 • Heating and ventilation mechanical room
- 39 • Waste storage and holding areas
- 40 • Incoming waste receiving area

- 1 • Storage modules
- 2 ○ Acids
- 3 ○ Caustics
- 4 ○ Mixed waste
- 5 ○ Nonhazardous

6 The strategy for closure of the 224-T TRUSAF is clean closure. The waste inventory has been relocated
7 to the Central Waste Complex or to another permitted TSD unit. Based on the clean nature of the
8 224-T TRUSAF and the proposed CERCLA removal action for the entire 224-T Plutonium
9 Concentration Facility of decontamination and decommissioning with the material being disposed of in
10 ERDF, sampling will not be performed. Certification of clean closure by an independent registered
11 professional engineer will demonstrate that clean closure performance standards have been met.

12 Future land use determinations will be made following clean closure of the 224-T TRUSAF and
13 disposition of the entire 224-T Plutonium Concentration Facility. The current proposal for the
14 224-T Plutonium Concentration Facility is a 'slab-on grade', which consists of the following primary
15 elements:

- 16 • Remove the nonradiological and radiological hazardous substances from the facility
- 17 • Remove equipment and associated piping
- 18 • Decontaminate/stabilize contamination
- 19 • Demolish structure to grade
- 20 • Dispose of waste generated during these operations
- 21 • Stabilize the area

22 **A.12. Location**

23 The 224-T TRUSAF is located in the 200 West Area of the Hanford Facility, west of Dayton Avenue and
24 south of 23rd Street. The 224-T TRUSAF is located in the SW ¼, NW ¼, Section 1, T12N, R25E. Less
25 than 5 hectares have been allocated for the 224-T TRUSAF. A map is included in RCRA
26 224-T TRUSAF Part A Form.

27 **B. ENVIRONMENTAL ELEMENTS**

28 **B.1. Earth**

29 **B.1.a. General site description**

30 Flat

31 **B.1.b. Percent slope**

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

33 **B.1.c. Soil types**

34 Soil types consist mainly of eolian and fluvial sands and gravel. More detailed information concerning
35 specific soil classifications can be found in PNNL-6415, Revision 17. Farming is not permitted on the
36 Hanford Facility.

37 **B.1.d. Unstable soils**

38 No

1 **B.1.e. Purpose of fill, excavation, or grading**

2 Minimal excavation for slab-on-grade is anticipated. Excavated material will be stockpiled for use as
3 backfill. This material also will be used, as required, for finish grading to blend with the existing flat
4 topography.

5 **B.1.f. Erosion indicators**

6 No

7 **B.1.g. Impervious surfaces**

8 Does not apply

9 **B.1.h. Erosion control**

10 None

11 **B.2. Air**

12 **B.2.a. Air emission types**

13 Routine closure activities would generate dust. Vehicles used by personnel during 224-T TRUSAF
14 closure would generate minor amounts of exhaust.

15 An airborne release could occur as a result of upset conditions internally or externally. Such a release
16 would not exceed immediately dangerous to life and health concentrations outside the immediate area of
17 the spill/release because of the small quantity of material that is available for release.

18 **B.2.b. Off-site sources of air emissions and odors**

19 No

20 **B.2.c. Measures to reduce or control air emissions**

21 Good engineering practices would be followed, and actions would comply with onsite procedures
22 designed to protect the environment and personnel safety and health. Examples include application of
23 water during closure activities for dust suppression.

24 **B.3. Water**

25 **B.3.a. Surface Water**

26 **B.3.a.1. Water body on or near the site**

27 The Columbia River is in the vicinity of the 224-T TRUSAF. However, the 224-T TRUSAF is not a
28 land-based facility as defined in WAC 173-303-282(3)(h) and is over 7 kilometers from the Columbia
29 River.

30 **B.3.a.2. Work in, on, or near the water**

31 224-T TRUSAF closure would not require any activity in or near the described waters and drainage.

32 **B.3.a.3. Water body fill or dredge**

33 There would be no dredging or filling from or to surface water or wetlands.

1 **B.3.a.4. Surface water withdrawals and diversions**

2 The water supply for the 200 West Area is pumped from the Columbia River. The 224-T TRUSAF
3 activities would use relatively little of this overall withdrawal. The estimated amounts are small
4 compared to normal daily water use in the 200 West Area.

5 **B.3.a.5. Floodplain**

6 The 224-T TRUSAF is not within the 100-year or 500-year floodplain (PNNL-6415, Revision 17).

7 **B.3.a.6. Discharge of waste**

8 No

9 **B.3.b. Ground Water**

10 **B.3.b.1. Ground water withdraws and discharges**

11 No groundwater would be withdrawn in support of this project, and water would not be discharged to the
12 aquifer.

13 **B.3.b.2. Waste discharges to ground**

14 Does not apply

15 **B.3.c. Water runoff**

16 **B.3.c.1. Runoff source and flow**

17 The Hanford Facility receives only 15.2 to 17.8 centimeters of annual precipitation. Precipitation runs
18 off the existing buildings, parking areas, and the waste storage pad and seeps into the soil near these
19 areas. This precipitation does not reach the groundwater or surface waters.

20 **B.3.c.2. Waste or contamination of runoff**

21 Waste materials would not enter ground or surface waters. All waste materials would be contained.

22 **B.3.d. Mitigation of water impacts**

23 No surface, ground, or run-off water impacts are expected.

24 **B.4. Plants**

25 **B.4.a. Types of vegetation**

26 There is no vegetation on the 224-T TRUSAF site.

27 **B.4.b. Vegetation removal**

28 Does not apply

29 **B.4.c. Threatened and endangered species**

30 No threatened or endangered species are on the 224-T TRUSAF site. The Hanford Facility contains
31 some federal and state listed threatened and endangered plant and animal species. Additional
32 information on species can be found in PNNL-6415, Revision 17.

1 **B.4.d. Vegetation mitigation**

2 Does not apply

3 **B.5. Animals**

4 **B.5.a. Types of animals**

5 Birds: Raptors (burrowing owls, ferruginous, redtail, and Swainson's hawks), eagles, and songbirds

6 Mammals: Deer, elk, coyotes, and rabbits

7 Additional information on animals can be found in PNNL-6415, Revision 17.

8 **B.5.b. Threatened and endangered species**

9 The Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act protect the American bald
10 eagle (the U. S. Department of the Interior took the American bald eagle off the Federal List of
11 Endangered and Threatened Wildlife and Plants on June 28, 2007). The state listed white pelican,
12 sandhill crane, and ferruginous hawk occur on or migrate through the Hanford Site.

13 **B.5.c. Animal migration routes**

14 The Hanford Site is a part of the broad Pacific Flyway.

15 **B.5.d. Wildlife mitigation**

16 This project contains no specific measures to preserve or enhance wildlife.

17 **B.6. Energy and Natural Resources**

18 **B.6.a. Types of energy**

19 Electricity will be used at 224-T TRUSAF during closure. Diesel fuel will be used for equipment during
20 closure activities.

21 **B.6.b. Solar power interference**

22 No

23 **B.6.c. Mitigation**

24 Energy consumption is anticipated to be small, and energy conservation features readily are not
25 applicable to 224-T TRUSAF.

26 **B.7. Environmental Health**

27 **B.7.a. Environmental health hazards**

28 Possible environmental health hazards to personnel could arise from activities at 224-T TRUSAF. The
29 hazard could come from exposure to demolition waste. Stringent administrative controls and engineered
30 barriers will be used to minimize the probability of even a minor incident and/or accident. A chemical
31 spill, release, fire, or explosion could occur only as a result of a simultaneous breakdown in multiple
32 barriers or a catastrophic natural forces event.

1 **B.7.b. Emergency services**

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

5 **B.7.b.1. Mitigation**

6 All personnel are trained to follow proper procedures during operations to minimize potential exposure.
7 The 224-T TRUSAF has systems for radiation monitoring, fire protection, and alarm capability.

8 Chemical and radiological safety hazards would be mitigated by preventing direct contact with the
9 residual chemical constituents; and protective clothing, appropriate training, and respiratory protection
10 used by onsite personnel as necessary. As low as reasonably achievable (ALARA) principles are applied
11 during construction and operations.

12 **B.7.c. Noise**

13 **B.7.c.1. Noise in the area**

14 While there is a minor amount of traffic, operation, and equipment noise in the vicinity, it is not expected
15 to affect personnel at 224-T TRUSAF.

16 **B.7.c.2. Noise from the proposal**

17 Minor amounts of noise from traffic and equipment are expected during day shift hours for closure
18 activities.

19 **B.7.c.3. Mitigation for noise**

20 In the unlikely event that Occupational Safety and Health Administration noise standards would be
21 exceeded, appropriate measures to protect personnel would be employed.

22 **B.8. Land and Shoreline Use**

23 **B.8.a. Current uses**

24 The Hanford Facility is a single RCRA facility identified by the U.S. Environmental Protection Agency
25 (EPA)/State Identification Number WA7890008967 that consists of over 70 TSD units conducting
26 dangerous waste management activities. The Hanford Facility consists of all contiguous land and
27 structures, other appurtenances, and improvements on the land, used for recycling, reusing, reclaiming,
28 transferring, storing, treating, or disposing of dangerous waste, which, for the purposes of RCRA, are
29 owned by the U.S. Government and operated by the DOE-RL (excluding lands north and east of the
30 Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands
31 leased to Energy Northwest, and lands owned by or leased to Washington State).

32 **B.8.b. Agriculture uses**

33 No portion of the 200 West Area has been used for agricultural purposes since 1943.

34 **B.8.c. Structures**

35 Existing structures at 224-T TRUSAF are described in the RCRA closure plan for 224-T TRUSAF.

1 **B.8.d. Demolition**

2 The current proposal for clean closure of the 224-T TRUSAF and disposition of the entire
3 224-T Plutonium Concentration Facility involves demolish structures to grade.

4 **B.8.e. Zoning**

5 The Hanford Site is currently included in Public Land's designation in the Benton County
6 Comprehensive Plan (June 22, 1998) (Internet address: http://www.co.benton.wa.us/comp_plan.htm).
7 The Plan is being revised, and will address the Hanford Site as a separate geographic component, or
8 'Sub-Area' with its' own Land Use Plan (under development as Chapter 13 in the aforementioned Benton
9 County Comprehensive Plan).

10 **B.8.f. Comprehensive plan designation**

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

14 **B.8.g. Shoreline master program designation**

15 Does not apply

16 **B.8.h. Environmentally sensitive area**

17 No

18 **B.8.i. Persons living or working onsite**

19 None

20 **B.8.j. People displaced by the proposal**

21 None

22 **B.8.k. Mitigation of displacement**

23 Does not apply

24 **B.8.l. Consistency with plans and land use designations**

25 Does not apply (refer to Section 8.f.)

26 **B.9. Housing**

27 **B.9.a. Number of units and income level rating**

28 None

29 **B.9.b. Residential units eliminated**

30 None

31 **B.9.c. Housing mitigation**

32 Does not apply

1 **B.10. Aesthetics**

2 **B.10.a. Building height and exteriors**

3 The 224-T TRUSAF structure has an eave height of approximately 6.1 meters and is constructed of metal
4 and concrete.

5 **B.10.b. Views**

6 The 224-T TRUSAF would be demolished, removing the structure from view.

7 **B.10.c. Mitigation for aesthetics**

8 None

9 **B.11. Light and Glare**

10 **B.11.a. Types of light and glare**

11 None

12 **B.11.b. Safety and views**

13 No

14 **B.11.c. Off-site sources of light and glare**

15 None

16 **B.11.d. Mitigation for light and glare**

17 None

18 **B.12. Recreation**

19 **B.12.a. Recreational opportunities**

20 None

21 **B.12.b. Displaced recreational uses**

22 No

23 **B.12.c. Recreational mitigation**

24 None

25 **B.13. Historic and Cultural Preservation**

26 **B.13.a. Historic register**

27 No places or objects listed on, or proposed for national, state, or local preservation registers are known to
28 be at 224-T TRUSAF. Additional information concerning Hanford Site cultural resources can be found
29 in PNNL-6415, Revision 17.

1 **B.13.b. Cultural site**

2 The DOE-RL has concluded that the T Plant, adjacent to the 224-T TRUSAF, is a contributing property
3 within the Hanford Site Manhattan Project and Cold War Era Historic District recommended for
4 individual documentation as stipulated in Appendix C, Table 1 of the Programmatic Agreement for
5 Maintenance, Deactivation, Alteration, and Demolition of the Built Environmental on the Hanford Site,
6 Washington (DOE/RL-96-77).

7 **B.13.c. Mitigation for historic or cultural resource**

8 All closure activities at 224-T TRUSAF are evaluated to ensure additional impacts are addressed.

9 **B.14. Transportation**

10 **B.14.a. Public streets and highways**

11 Does not apply

12 **B.14.b. Public transit**

13 The 224-T TRUSAF is not accessible to the public and is not served by public transit.

14 **B.14.c. Parking spaces**

15 None

16 **B.14.d. New roads and street improvements**

17 No

18 **B.14.e. Water, rail, air transportation**

19 No

20 **B.14.f. Trips per day**

21 None

22 **B.14.g. Transportation mitigation**

23 None

24 **B.15. Public Services**

25 **B.15.a. Public service demand**

26 No

27 **B.15.b. Mitigation**

28 Does not apply

1 **B.16. Utilities**

2 **B.16.a. Utilities**

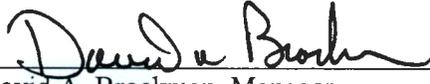
3 Electricity, potable water, refuse service, telephone, and a sanitary sewer system are available in the
4 200 West Area.

5 **B.16.b. Utility needs**

6 Existing utilities would be used to support 224-T TRUSAF closure activities.

1 **SIGNATURES**

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



Mr. David A. Brockman, Manager
U.S. Department of Energy
Richland Operations Office

10/12/07
Date

4

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224-T Transuranic Waste Storage and Assay Facility Closure Plan

1.0 FACILITY DESCRIPTION

The 224-T Transuranic Waste Storage and Assay Facility (224-T TRUSAF) treatment, storage, and/or disposal unit is part of the 224-T Plutonium Concentration Facility. The 224-T Plutonium Concentration Facility is adjacent to T Plant in the 200 West Area. The 224-T TRUSAF stored transuranic waste, transuranic mixed waste, mixed waste, and other properly characterized and packaged low-level waste. Dangerous wastes were removed from 224-T TRUSAF and the unit is no longer being operated as a TSD unit. Because dangerous waste does not include the source, special nuclear, and by-product material components of mixed waste, radionuclides are not within the scope of this documentation. The information on radionuclides is provided only for general knowledge.

The 224-T Plutonium Concentration Facility remediation, which will include the 224-T TRUSAF TSD unit, will be conducted as a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal action. The response action will be conducted as described in the joint Department of Energy/U.S. Environmental Protection Agency (EPA) policy, Policy on Decommissioning Department of Energy Facilities under CERCLA, for decommissioning surplus DOE facilities consistent with the requirements of the CERCLA.

1.1 FACILITY OPERATIONS

On receipt of the transuranic mixed waste or mixed waste, the 224-T TRUSAF operations personnel performed an inspection (exterior only) of the waste container(s) and associated documentation, a neutron assay of the waste container to determine fissile isotope content, and/or an examination with a real-time radiography (RTR) system to confirm the absence of prohibited items (e.g., free liquids). If the waste container(s) and accompanying documentation were acceptable, the 224-T TRUSAF operations personnel stored the waste.

The 224-T Plutonium Concentration Facility, constructed in the early 1940's entirely of reinforced concrete, was used as a chemical processing unit for purifying liquid plutonium nitrate by the lanthanum fluoride process. The 224-T Plutonium Concentration Facility remained idle for several years after new processes made the lanthanum fluoride process obsolete. In 1975, the mission of the 224-T Plutonium Concentration Facility changed to that of storing plutonium solutions and solid plutonium scrap. To meet the requirements for this new mission and the criteria for storing plutonium, the 224-T Plutonium Concentration Facility underwent major structural upgrades and modifications. The modifications included reinforcing the facility for tornado and seismic loads and sealing off the areas previously used for chemical separations from personnel entry. The three floors of the building contain six radiologically contaminated process cells, which were sealed from the rest of the building in 1975. The six process cells (cells A through F) are not included in this closure plan documentation. In 1985, the storage of transuranic waste, transuranic mixed waste, mixed waste, and low-level waste commenced, and the portion of the 224-T Plutonium Concentration Facility being operated was redesignated as the 224-T TRUSAF. This closure plan documentation covers only the RCRA regulated portion of the 224-T Plutonium Concentration Facility referred to as 224-T TRUSAF. The entire building will be remediated as a decontamination and decommissioning activity as part of a CERCLA removal action.

The configuration of 224-T TRUSAF, which is approximately 60 meters long by 18.3 meters wide, allowed for approximately 1,068 square meters of storage space.

The three floors of the 224-T TRUSAF are connected by stairway A at the north end of the building, by stairway B at the south end of the building, and by an elevator adjacent to stairway A. There also is a concrete elevator loading deck off the elevator on the outside of the building. The roof contains the

1 ventilation exhaust equipment and a penthouse. The penthouse contains the elevator mechanical
2 equipment.

3 The first floor contained storage modules, and includes a restroom, an administration office, a heating and
4 ventilation mechanical room, an elevator, a transuranic waste assayer room, and a RTR. The storage
5 modules on the first floor were in open areas and were marked with tape or paint on the floor. The second
6 and third floors also contained open storage modules marked on the floor with tape or paint.

7 The floors of the 224-T TRUSAF were sealed with an epoxy sealant to meet secondary containment
8 requirements. The fire protection system consisted of a dry-pipe fire system. Each floor had emergency
9 exits and fire alarm pull boxes.

10 The 224-T TRUSAF consisted of the following areas:

- 11 • Administration office
- 12 • RTR room
- 13 • Transuranic waste assayer room
- 14 • Assay control room and storage unit operations office
- 15 • Elevator and stairways
- 16 • Heating and ventilation mechanical room
- 17 • Waste storage and holding areas
- 18 • Incoming waste receiving area
- 19 • Storage modules
 - 20 ○ Acids
 - 21 ○ Caustics
 - 22 ○ Mixed waste
 - 23 ○ Nonhazardous

24 **1.1.1 Real-Time Radiography Room**

25 Real-time radiography was operated from a desk and control terminal. Only one container at a time was
26 staged in this area for x-raying. In the RTR room, a roll-up door was used for building services. The
27 entrance had a 5.08-centimeter high curb with a 0.3-meter long ramp leading down to floor level. The
28 room contains no floor drains. Three personnel entrances to the RTR room were available, all with a
29 5.08-centimeter curb and a 0.3-meter-long ramp.

30 **1.1.2 Transuranic Waste Assayer Room**

31 Only one container at a time was staged in the transuranic waste assayer room. The transuranic waste
32 assayer room contains the first floor emergency exit. All floor drains in the transuranic waste assayer
33 room are sealed.

34 **1.1.3 Assay Control Room and Storage Unit Operations Office**

35 The assay control room and storage unit operations office served as the operations center. The
36 transuranic waste assayer was operated from this office. There are no floor drains in the assay control
37 room and storage unit operations office.

38 **1.1.4 Elevator and Stairways**

39 The elevator and stairways are located on the west side of the storage building service all three floors of
40 the 224-T TRUSAF. The elevator was used for transporting waste to the upper floors for storage, for
41 moving large or heavy equipment, and for out loading waste. Main floor entrances to the elevator are
42 equipped with a 5.08-centimeter curb and a 0.3-meter-long ramp down to floor level. The elevator is not
43 equipped with curbs.

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1 1.1.5 Heating and Ventilation Mechanical Room

2 The heating and ventilation equipment in the mechanical room, on the west-central side of the first floor,
3 provided a constant negative pressure with respect to the atmosphere. The heating and ventilation system
4 is currently deactivated. The two entrances from the hallway into the heating and ventilation mechanical
5 room have 5.08-centimeter curbs with 15.24-centimeter-long ramps down to floor level.

6 1.1.6 Waste Storage Modules

7 Waste storage modules on all three floors were open-array storage modules, delineated by markings taped
8 or painted on the floor to prevent inadvertent commingling of incompatible waste forms. Incompatible
9 dangerous waste was separated by placement on different floors or in different rooms on the second floor.
10 Transuranic mixed waste was stored based on both transuranic element content and dangerous waste
11 constituents. All floor drains in these areas were sealed with nonshrinking concrete and covered with
12 epoxy sealant.

13 1.1.6.1 Receiving Area

14 The receiving area was located in the southeast corner of the first floor. A double metal door was
15 provided for entrance to the receiving area to allow the movement of a forklift. A concrete pad outside of
16 the door was used for unloading waste. The ceiling is two floors high in the extreme southeast portion of
17 the receiving area. A portion of the ceiling is only one floor high and contains a 1-ton crane used for
18 container-over packing operations.

19 1.1.6.2 Temporary Staging Area

20 The temporary staging area, located at the southeast end, was used until offloading operations were
21 complete.

22 1.1.6.3 First Floor Storage Modules

23 The first floor storage modules were used for short-term storage before examination and transfer of waste
24 to other locations (i.e., upper floor storage, return to generators and/or generating units, Low-Level Burial
25 Grounds), etc. All transuranic mixed waste was separated into compatible modules, two containers high,
26 two containers wide, and as long as necessary to accommodate the amount of the waste.

27 1.1.6.4 Second Floor Storage Modules

28 The majority of the second floor was reserved for transuranic waste. Transuranic mixed waste also was
29 stored on the second floor. Transuranic mixed waste containers were stored in open-array modules, two
30 containers wide, and two containers high. Incompatible mixed waste was separated by being placed in
31 different rooms on the second floor.

32 1.1.6.5 Third Floor Storage Modules

33 The third floor storage area contained two types of waste storage modules. Modules 3-1 were for
34 transuranic mixed waste. Modules 3-2 were for transuranic waste. No incompatible transuranic mixed
35 waste was stored on the third floor.

36 1.2 SECURITY INFORMATION

37 Security information for the Hanford Facility is discussed in Permit Attachment 33, §6.1 Security.

38 The 224-T TRUSAF is posted with signs stating *DANGER-UNAUTHORIZED PERSONNEL KEEP OUT*
39 or an equivalent legend, in black and red letters on a white background. These signs are in English,

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1 legible from a distance of 7.6 meters, and visible from all angles of approach. In addition to these signs,
2 the fences around the 200 West Area are posted with signs, printed in English, warning against
3 unauthorized entry. The signs also are visible from all angles of approach. The 224-T TRUSAF also has
4 its own perimeter fencing that remains locked during nonroutine working hours. The perimeter fence has
5 postings to keep unauthorized personnel out, in addition to an access control point trailer (MO-289)
6 within the fenced area.

7 **2.0 CLOSURE STRATEGY AND PERFORMANCE STANDARDS**

8 The 224-T TRUSAF was a clean and well-maintained TSD unit and will be clean closed. Therefore, post
9 closure activities are not anticipated. Closure of the 224-T TRUSAF will be accomplished by integrating
10 the closure activities with the proposed CERCLA removal action for the entire 224-T Plutonium
11 Concentration Facility. Because the entire building will be disposed of in the Environmental Restoration
12 Disposal Facility (ERDF), sampling activities will not be necessary.

13 **2.1 MINIMIZE THE NEED FOR FURTHER MAINTENANCE**

14 Closure of the 224-T TRUSAF by the eventual disposal of the building decontamination and
15 decommissioning materials in ERDF will minimize the need for further maintenance specific to the
16 244-T TRUSAF.

17 **2.2 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT**

18 The 224-T TRUSAF will be closed by the eventual disposal of the building into ERDF, which will
19 provide protection for human health and the environment.

20 **2.3 RETURN LAND TO THE APPEARANCE AND USE OF SURROUNDINGS**

21 Future land use determinations will be made following clean closure of the 224-T TRUSAF and
22 disposition of the entire 224-T Plutonium Concentration Facility. The current proposal for the
23 224-T Plutonium Concentration Facility is a 'slab-on grade', which consists of the following primary
24 elements:

- 25 • Remove the nonradiological and radiological hazardous substances from the facility
- 26 • Remove equipment and associated piping
- 27 • Decontaminate/stabilize contamination
- 28 • Demolish structure to grade
- 29 • Dispose of waste generated during these operations
- 30 • Stabilize the area

31 **3.0 CLOSURE ACTIVITIES**

32 The strategy for closure of the 224-T TRUSAF is clean closure. The waste inventory has been relocated
33 to the Central Waste Complex or to another permitted TSD unit. Based on the clean nature of the
34 224-T TRUSAF and the proposed CERCLA removal action for the entire 224-T Plutonium Concentration
35 Facility of decontamination and decommissioning with the material being disposed of in ERDF, sampling
36 will not be performed. Certification of clean closure by an independent registered professional engineer
37 will demonstrate that clean closure performance standards have been met.

38 **3.1 REMOVAL OF DANGEROUS WASTE INVENTORY**

39 The waste inventory has been removed and relocated to the CWC or to another permitted TSD unit.

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1 **3.2 CLOSURE ACTIVITIES**

2 Closure activities will be integrated with the implementation of the Engineering Evaluation/Cost Analysis
3 (EE/CA) for 224-T Plutonium Concentration Facility. The EE/CA proposes that the 224-T facility be
4 decontamination and decommissioned with the material being disposed of in ERDF.

5 **3.2.1 Constituents of Concern for Closure**

6 Sampling for dangerous waste constituents is not anticipated at this time.

7 **3.2.2 Field Logbook**

8 All field activities will be recorded in a field logbook. All entries will be made in ink, signed, and dated.

9 **3.2.3 Reporting**

10 After completion of closure activities, certification will be produced to verify clean closure.

11 **3.2.4 Personnel Training**

12 All personnel involved with the closure activities at the 224-T TRUSAF will receive training concerning
13 the handling of mixed waste.

14 **3.3 SCHEDULE OF CLOSURE**

15 The schedule of closure will be integrated with the 224-T Plutonium Concentration Facility CERCLA
16 removal action.

17 **3.4 AMENDMENT OF PLAN**

18 Amendments to the closure plan, if required, will be prepared as described in WAC 173-303-610(3)(b).

19 **3.5 CERTIFICATION OF CLOSURE**

20 Certification of closure will be prepared as discussed in WAC 173-303-610(6).

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WA7890008967, Part V, Closure Unit 10
224-T Transuranic Waste Storage and Assay Facility

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