

1248767

[0065960H]

CWR-PFP-00013
Revision 0

Miscellaneous CERCLA Demolitions and Removals

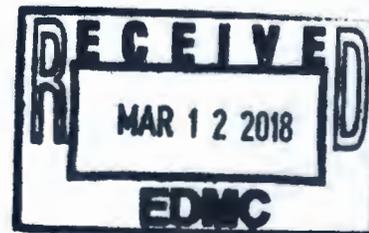
As Left Characterization

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

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788



P.O. Box 1600
Richland, Washington 99352



Approved for Public Release;
Further Dissemination Unlimited

Miscellaneous CERCLA Demolitions and Removals

As Left Characterization

Document Type: RPT Program/Project: PFP Closure

R. W. Bloom
CH2M HILL Plateau Remediation Company

Date Published
May 2017

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

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788


P.O. Box 1600
Richland, Washington 99352

APPROVED
By Julia Raymer at 7:10 am, Jun 29, 2017

Release Approval

Date

TRADEMARK DISCLAIMER

Reference herein to any specific commercial product, process, or service by tradename, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy.

Printed in the United States of America

RECORD OF REVISION		
Document Number CWR-PFP-00013		Title: Miscellaneous Pre-2014 CERCLA Demolitions and Removals
Change Control Record		
Revision	Description of Change – Replace, Add, and Delete Pages	Month/Year
0	Initial release of document describing demolition and or removal of the following structures: 2734ZF, 2734ZG, MO420, 2734ZJ, 2778Z, 2736ZD, 2736ZE, 2736ZF, 2736ZG, 2736ZH, 2736ZI, 2736ZJ, 2736ZK, 2736ZL, 2736ZM, 2736ZN, 2736ZO, 2736ZP, 2736ZQ, 2736ZR, 2736ZS, 2736ZT, 2736ZU, 2711-B1, 2711-B2, and 2721Z-2.	June/2017

/

This page intentionally left blank.

Contents

1	Introduction.....	1
2	Description of Structures.....	1
2.1	2734ZF and 2734ZG Gas Bottle Storage.....	2
2.2	MO420 – Mobile Office Trailer at Pit 6.....	3
2.3	268Z Mobile Box Assay Unit	3
2.4	2734ZJ Liquid Nitrogen Storage Pad and Tank.....	4
2.5	2778Z Guard Shack.....	5
2.6	Interim Storage Vaults and Casks	5
2.7	2736ZD – Vault/Experimental Breeder Reactor II Cask.....	6
2.8	2711-B1/B2 Breathing Air Trailers.....	7
2.9	2721Z-2 (TK-701-12B) Underground Fuel Tank for Generators	8
3	Preparation and Demolition.....	9
3.1	Predemolition Characterization.....	9
3.2	Cold and Dark Process	9
4	As-Left Condition.....	9
4.1	As-Left Description.....	9
4.1.1	Key Documentation and Drawings.....	9
4.1.2	Industrial Safety Hazards.....	9
4.1.3	Site Characterization.....	9
4.2	Endpoint Objectives	11
4.3	Administrative Endpoints.....	11
4.4	Endpoint Documentation.....	14
5	References	14

Figures

Figure 1.	2734ZF and 2734ZG Gas Bottle Storage.....	3
Figure 2.	Mobile Office Trailer at Pit 6	3
Figure 3.	Mobile Box Assay Unit	4
Figure 4.	Mobile Box Assay Unit Leaving PFP.....	4
Figure 5.	Liquid Nitrogen Tank	4
Figure 6.	Guard Shack on Display at PFP 2017.....	5
Figure 7.	Interim Storage Vaults and Casks.....	5
Figure 8.	Interim Storage Vaults in Transit to ERDF	6
Figure 9.	2736ZD Experimental Breeder Reactor II Cask.....	6
Figure 10.	Breathing Air Trailers.....	7
Figure 11.	Breathing Air Trailers Removed.....	7
Figure 12.	Underground Fuel Tank before Removal	8

Figure 13. Underground Fuel Tank Removed 8
Figure 14. Remaining Slab Locations 10

Tables

Table 1. Miscellaneous Structures 1
Table 2. Clean Slab-on-Grade Objectives 11
Table 3. Administrative Endpoint Review..... 12

Terms

CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
ERDF	Environmental Restoration Disposal Facility
FHA	fire hazards analysis
ISC	interim storage cask
ISV	interim storage vault
PFP	Plutonium Finishing Plant
S&M	surveillance and maintenance

This page intentionally left blank.

1 Introduction

The purpose of this report and addendum is to provide information relative to the disposition of miscellaneous structures previously located at the Plutonium Finishing Plant (PFP) that will support the following activities:

- Document that the applicable actions required by HNF-22401, *Plutonium Finishing Plant (PFP) Complex End Point Criteria* (also referred to by document number NMS-16404), have been met.
- Prepare an overall turnover package documenting the as-left condition of the PFP site that will be transitioned to surveillance and maintenance (S&M).
- Develop a removal action report for the PFP *Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)* removal action.
- Provide reference information for follow-on activities associated with the site.

This report addresses the as-left condition at PFP associated with the miscellaneous structures removals that occurred prior to 2014 and compiles information relating to endpoint compliance consistent with HNF-22401.

Some of the various minor structures or mobile units that were part of the PFP Complex, located in the 200 West Area of the Hanford Site in southeastern Washington State and dispositional under the CERCLA removal action, were demolished in place or directly shipped to the Environmental Restoration Disposal Facility (ERDF) for disposal. Other items were removed and relocated both on and off the Hanford Site for reuse. Work was performed in accordance with DOE/RL-2005-13, *Action Memorandum for the Plutonium Finishing Plant Above-Grade Structures Non-Time Critical Removal Action*. Work prior to August 2014 was implemented in accordance with DOE/RL-2005-15, *Removal Action Work Plan for Plutonium Finishing Plant Above-Grade Structures Ancillary Facility Demolition*. Work performed after July 2014 was implemented in accordance with DOE/RL-2011-03, *Removal Action Work Plan for the Deactivation, Decontamination, Decommissioning, and Demolition of the Plutonium Finishing Plant Complex*.

The actions taken to complete deactivation, decontamination, decommissioning, and demolition and comply with the endpoint criteria defined in HNF-22401, as applicable, are addressed in this document. The purpose of this document is to compile that information in preparation for transfer to S&M.

2 Description of Structures

Table 1 lists each of the items addressed in this demolition report along with the year when the demolition or removal occurred. A brief description of each structure is provided.

Table 1. Miscellaneous Structures

Building Number	Official Name	Disposition	Year Removed	Comment
2734ZF	Gas Bottle Storage	Demolished	2005	Demolition was performed under CP-05-06505 (see also 2Z-05-07525).
2734ZG	Gas Bottle Storage	Demolished	2005	Demolition was performed under CP-05-06505 (see also 2Z-05-07525).
MO420	Office Trailer at Pit 6	Relocated	2008	Relocated to Pit 6.

Table 1. Miscellaneous Structures

Building Number	Official Name	Disposition	Year Removed	Comment
268Z	Mobile Box Assay Unit	Relocated offsite	2009	Relocated offsite under 2Z-09-01580.
2734ZJ	Liquid Nitrogen Storage Pad and Tank	Relocated offsite	2009	Tank and equipment were returned to vendor.
2778Z	Guard Shack	Relocated	2009	Was to be relocated to 200 East Area and renumbered to 6701H. It has subsequently been returned to the PFP area unnumbered as a display item for visitors outside the PFP yard. Final disposition is to be addressed in Yards and Grounds document.
2736XX	Three Interim Storage Casks	Relocated	2009	2736ZJ, K, and L (outside CERCLA scope).
2736XX	Fourteen Interim Storage Vaults	Removed and disposed at ERDF	2010	Shipped to ERDF and grout filled (2736ZE, F, G, H, I, M, N, O, P, Q, R, S, T, and U).
2736ZD	Vault – Experimental Breeder Reactor II Casks	Relocated	2010	Relocated to Canister Storage Building via work package 2Z-09-05426.
2711-B1	Breathing Air Trailer 1 (HO-64-04270 North)	Removed	2011	Removed (work package 2Z-10-06065) and transferred to Mission Support Alliance for reuse or excess.
2711-B2	Breathing Air Trailer 2 (HO-64-04255 South)	Relocated	2011	Removed (work package 2Z-10-06065) and transferred to Mission Support Alliance for reuse or excess.
2721Z-2	TK-701-12B (Underground Fuel Tank for Generators)	Removed and disposed at ERDF	2011	Work package 2Z-09-07547 removed the tank. Tank closure and removal were outside of CERCLA scope but necessary to support 2736ZB removal.

2.1 2734ZF and 2734ZG Gas Bottle Storage

These two similar gas bottle storage areas (Figure 1) were metal structures on a concrete pad located adjacent to PFP on the southwest side. The concrete slabs were left in place.



Figure 1. 2734ZF and 2734ZG Gas Bottle Storage

2.2 MO420 – Mobile Office Trailer at Pit 6

MO420 was a mobile trailer used at PFP to support vehicle inspections at 2701ZC, and it was replaced by 2701ZE. The trailer was relocated to Pit 6 (Figure 2).



Figure 2. Mobile Office Trailer at Pit 6

2.3 268Z Mobile Box Assay Unit

The Mobile Box Assay Unit (Figure 3) was a Super High Efficiency Neutron Coincidence, also known as the SUPERHENC assay device, that was transferred offsite (Figure 4). The pad and front apron shown in Figure 3 remain.



Figure 3. Mobile Box Assay Unit



Figure 4. Mobile Box Assay Unit Leaving PFP

2.4 2734ZJ Liquid Nitrogen Storage Pad and Tank

The liquid nitrogen storage tank (Figure 5), located at the southwest corner of PFP, and the associated evaporator were leased equipment and returned to the vendor. The concrete pad remains.



Figure 5. Liquid Nitrogen Tank

2.5 2778Z Guard Shack

The guard shack was located adjacent to 291Z. The modular structure was moved to the 200 East Area in 2009 and renumbered as 6701H; it has subsequently been replaced and returned to PFP as a display item (Figure 6).



Figure 6. Guard Shack on Display at PFP 2017

2.6 Interim Storage Vaults and Casks

The interim storage vaults (ISVs) and interim storage casks (ISCs) were located at the east side of the 2729Z Building (Figure 7) and consisted of 14 vaults and 3 shippable casks. The ISVs were shipped to ERDF (Figure 8), grout filled, and disposed. The ISCs were relocated to the 200 East Area. The prefabricated support bases associated with the ISVs and ISCs were also removed.



Figure 7. Interim Storage Vaults and Casks



Figure 8. Interim Storage Vaults in Transit to ERDF

2.7 2736ZD – Vault/Experimental Breeder Reactor II Cask

The Experimental Breeder Reactor II cask (2736ZD), a reinforced aboveground concrete cylindrical vault (8 ft tall and 9 ft in diameter, with a 1 ft thick interlocking cover and base plate), was located south of 2736ZC (Figure 9). The cask, including the prefabricated support base, was relocated to the 200 East Area.



Figure 9. 2736ZD Experimental Breeder Reactor II Cask

2.8 2711-B1/B2 Breathing Air Trailers

These two breathing air trailers (Figure 10) were brought from the Rocky Flats demolition project and installed at PFP but never used. They were removed (Figure 11) and transferred to excess.



Figure 10. Breathing Air Trailers



Figure 11. Breathing Air Trailers Removed

2.9 2721Z-2 (TK-701-12B) Underground Fuel Tank for Generators

The underground fuel tank (2721Z-2), shown in Figure 12, was located next to the 2736ZB Building and fueled generators in 2721Z. The tank was removed (Figure 13) and assessed in full compliance with WAC 173-360, “Underground Storage Tank Regulations” (MSBA, 2011, “Underground Storage Tank Site Assessment and Closure Report”).



Figure 12. Underground Fuel Tank before Removal



Figure 13. Underground Fuel Tank Removed

3 Preparation and Demolition

Activities to prepare for demotion or removal are described in this chapter.

3.1 Predemolition Characterization

The facilities are characterized to prepare for demolition. The following aspects were subject to evaluation for the facility (asbestos, waste disposal, and radiological contamination). Prior to demolition of the structures (2734ZF and 2734ZG), an asbestos good faith inspection was performed with no asbestos identified. A radiological survey was performed on both structures, and no contamination was detected.

3.2 Cold and Dark Process

With the exception of the 2721Z-2 tank, the cold and dark process for these structures was limited to electrical isolation. No piping existed to or from any of these structures.

4 As-Left Condition

This chapter summarizes the overall status of the site and provides pertinent information associated with the site.

4.1 As-Left Description

Except for MO240, which was located near the intersection of 19th Street and Camden Avenue, all items described in this report were located within the PFP fenced area. Slabs associated with the 268Z Mobile Box Assay Unit, nitrogen tank pad 2734ZJ, and bottle docks 2734ZF and 2734ZG remain (Figure 14). At the time of removal, no detectable radioactive contamination associated with any of these slabs was identified; however, because of their proximity adjacent to the PFP main building, a final status of these slabs must be addressed after demolition of PFP.

4.1.1 Key Documentation and Drawings

No drawings would be deemed essential or support per current engineering configuration management requirements. Details of the 2734ZF and 2734ZG slabs, located on the south side of PFP, can be found on H-2-20936, *Floor Plan – Part “K”*. For details of the slab installed on the north side of PFP for the Mobile Box Assay Unit, refer to HNF-FMP-04-20739, *Installation of PFP-Mobile Assay Unit (MBAU)*.

4.1.2 Industrial Safety Hazards

No unusual hazards are known to be associated with the removed items.

4.1.3 Site Characterization

No chemical or radiological hazards are known to be associated with any of the slabs. Due to the proximity to PFP where the various items were located, final characterization is deferred until after completion of PFP demolition.

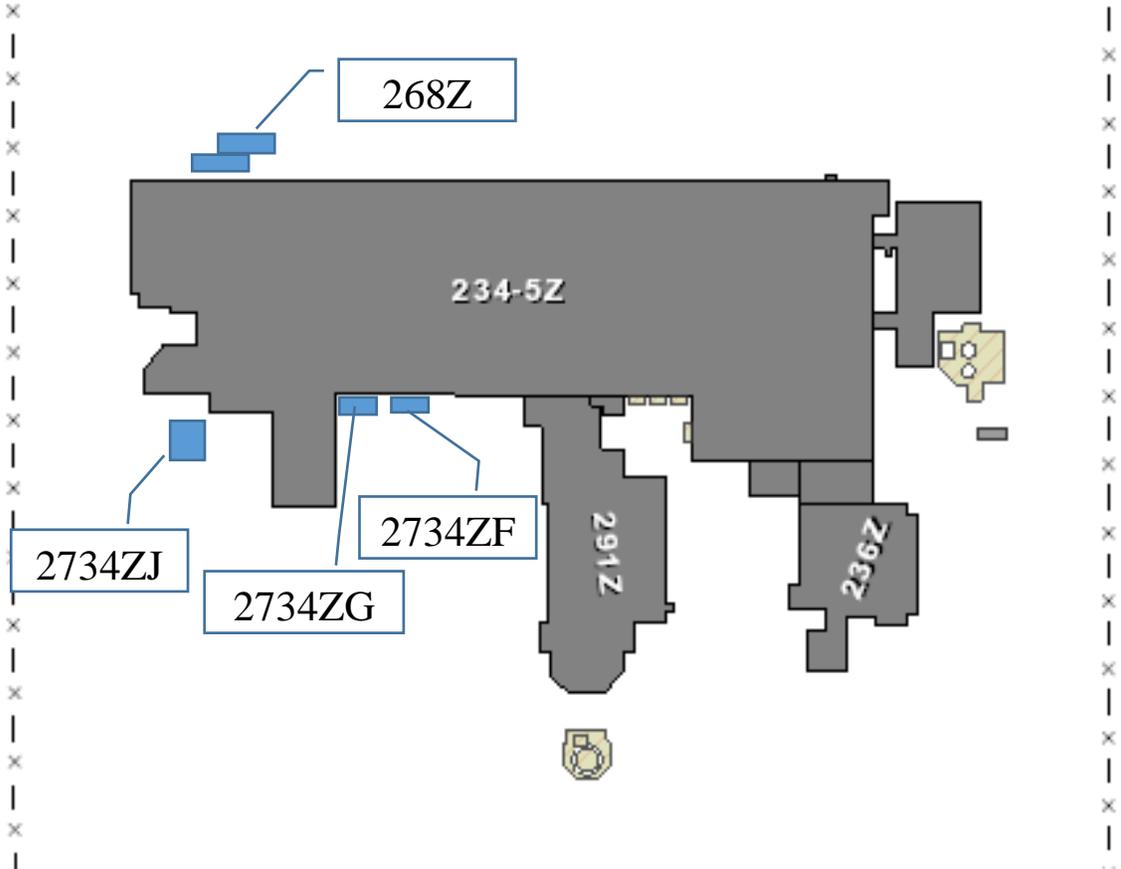


Figure 14. Remaining Slab Locations

4.2 Endpoint Objectives

Table 2 discusses 10 measurable objectives, outlined in Section VI of HNF-22401, that define the clean slab-on-grade objective reviewed as part of the post-demolition document review and walkdown of the site by the author.

Table 2. Clean Slab-on-Grade Objectives

Objective	Status	Comment
1. Above-grade structures are removed.	Met	The 2778Z guard house will have to be readdressed.
2. Below-grade portions of buildings will be emptied and stabilized.	Not Applicable	None of the structures had below-grade portions. The underground storage tank was physically removed and backfilled.
3. Buried pipes and ducts will be drained and sealed.	Met	Only applicable to the underground storage tank system. All underground piping was removed and documented as part of closure.
4. The portion of concrete slab that is exposed to the weather shall be free of dispersible radiological contamination.	Met (subject to change)	The slabs that remain are near the 234-5Z demolition zone and will need further evaluation.
5. The exposed surface of the slab shall be free of tripping and puncture hazards.	Met	No known hazards.
6. The exposed surface of the slab shall be suitable for exposure to the weather for at least 20 years.	Met	The slabs that remain are near the 234-5Z demolition zone and will need further evaluation.
7. Subsurface radiological areas will be posted per regulations.	Not applicable	No below-grade radiological contamination is noted.
8. All penetrations through the slab (e.g., piping, conduits) shall be sealed with grout or equivalent suitable for exposure to the weather for 20 years.	Met	Only applicable to the area around the Mobile Box Assay Unit pad.
9. All wastes are removed.	Met	No comment.
10. No exposed surface soil contamination areas are allowed.	Met (subject to change)	The slabs that remain are near the 234-5Z demolition zone and will need further evaluation.

4.3 Administrative Endpoints

Since the slabs are located inside the PFP inner fence in what could be considered a prefinal condition, the applicable administrative endpoints specified in HNF-22401 were evaluated in Table 3 and documented in the following section. This evaluation is intended to support the final overall PFP endpoint administrative requirement evaluation, which will be documented at a later date.

Table 3. Administrative Endpoint Review

Checklist Number	Item^a	Description^a	Applicability/ Documentation
Admin-1	Complete/close outstanding audit findings and occurrence reports.	A review of facility and site action tracking systems and open occurrence reports will be conducted and items will be addressed and closed.	Not applicable ^b
Admin-2	Document configuration management performed in accordance with site standards.	The final configuration of the PFP Complex will be reviewed against controlled drawings to verify proper incorporation of structure and utility modifications/isolations.	See Section 4.1.1
Admin-3	Provide essential drawings and a list of all facility drawings necessary for S&M.	This endpoint will be done in conjunction with the development of the draft S&M Plan. The essential drawing list will be updated to reflect the condition of the PFP Complex area at the end of the project. A separate list containing both the essential drawing and those required to support S&M.	See Section 4.1.1
Admin-4	Document remaining industrial hazards and compliance with industrial safety requirements.	This endpoint compiles the individual endpoints into one report reflecting the remaining industrial hazards.	Not applicable ^b
Admin-5	Document compliance with confined space program.	This endpoint compiles the individual endpoints into one report reflecting the remaining confined spaces.	The underground storage tank was a confine space that was eliminated with removal
Admin-6	Document compliance with the asbestos program.	The post-demolition condition of the PFP Complex will be assessed for compliance with the site asbestos program.	Not applicable ^b
Admin-7	Document amount and location of remaining hazardous substances and/or dangerous wastes.	This endpoint compiles the individual endpoints into one report reflecting the remaining hazardous substances/ dangerous wastes.	None (see Section 4.1.3)
Admin-8	Complete and provide current FHA.	An FHA will be completed reflecting the endpoint condition of the PFP Complex.	Not applicable ^b
Admin-9	Transfer facility physical property records.	Property records for the PFP Complex will be updated as the transition and dismantlement effort removes excess and or disposes of property.	Not applicable ^b

Table 3. Administrative Endpoint Review

Checklist Number	Item^a	Description^a	Applicability/ Documentation
Admin-10	Provide an S&M plan.	The transition and dismantlement project/contractor has the historic and current knowledge of the PFP Complex. Therefore, they will develop an S&M plan for the S&M organization. The oncoming project/contractor has the responsibility to release the S&M plan under their document release procedures.	Not applicable ^b
Admin-11	Provide a current/updated building emergency plan.	The PFP Complex building emergency plan will be updated (or cancelled) to reflect the endpoint condition.	Not applicable ^b
Admin-12	Provide S&M procedures and files.	Procedures utilized by the transition and dismantlement project/contractor to conduct surveillance and maintenance at the end of the project will be copied and placed in the completion package files.	Not applicable ^b
Admin-13	Provide identified regulatory commitments and regulatory documentation.	The transition and dismantlement project/contractor has the historic and current knowledge of the PFP Complex existing commitments and documentation. As such, the transition and dismantlement project/contractor will compile outstanding commitments and documentation to support the S&M organization to complete the commitments/documentation. These along with recently (within the last year of the project) completed commitments documentation (closure/completion letters) will be included in the completion package files.	Not applicable ^b
Admin-14	Transfer classified documents to repository.	All classified documents will be removed from the PFP Complex and placed in a site approved repository.	Not applicable ^b
Admin-15	Verify transition and dismantlement completion package contents are complete.	This is a final review of the document log for the completion package files. This will ensure the intended documentation provided in the files have not been removed or checked out and not returned.	Not applicable ^b
Admin-16	Provide existing regulatory permitting documentation.	The remaining regulatory permits and supporting documentation will be compiled and provided to the S&M organization.	Not applicable ^b

Table 3. Administrative Endpoint Review

Checklist Number	Item ^a	Description ^a	Applicability/ Documentation
Admin-17	Compile available historical data including chemical and plutonium spills, holdup, releases, and constituents associated with building processing to support final remediation.	This endpoint is designed to capture useful information on the remaining structures/systems that has been kept by facility personnel (i.e., engineers, health physics, and operations) and is not available through other sources prior to their leaving the facility. These data will be compiled and placed in the completion package files. Documentation already maintained by the Hanford Site document control system and/or libraries will be referenced only.	Not applicable ^b

a. Description is originated from HNF-22401, *Plutonium Finishing Plant (PFP) Complex End Point Criteria*.

b. These administrative criteria are not separately evaluated for the structures. All criteria will be addressed globally in the turnover package to Central Plateau S&M, and this document supports that evaluation.

FHA = fire hazards analysis

4.4 Endpoint Documentation

Endpoints checklist items applicable to the removals are addressed in Appendix A, and supporting documentation is provided in Appendix B of CWR-PFP-00013-ADD1, *Miscellaneous Pre-2014 CERCLA Structures Endpoint Documentation*.

5 References

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq., Pub. L. 107-377, December 31, 2002. Available at: <http://epw.senate.gov/cercla.pdf>.

CWR-PFP-00013-ADD1, 2017, *Miscellaneous Pre-2014 CERCLA Structures Endpoint Documentation*, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington.

DOE/RL-2005-13, 2005, *Action Memorandum for the Plutonium Finishing Plant Above-Grade Structures Non-Time Critical Removal Action*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://pdw.hanford.gov/arpir/pdf.cfm?accession=DA00914134>.

DOE/RL-2005-15, 2005, *Removal Action Work Plan for Plutonium Finishing Plant Above-Grade Structures Ancillary Facility Demolition*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=DA236363>.

DOE/RL-2011-03, 2016, *Removal Action Work Plan for the Deactivation, Decontamination, Decommissioning, and Demolition of the Plutonium Finishing Plant Complex*, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0077210H>.

H-2-20936, 1993, *Floor Plan – Part “K”*, Rev. 4, Hanford Atomic Products Operation, General Electric Company, Richland, Washington.

HNF-FMP-04-20739, 2008, *Installation of PFP-Mobile Assay Unit (MBAU)*, Rev. 0F, Fluor Hanford, Inc., Richland, Washington.

HNF-22401, 2004, *Plutonium Finishing Plant (PFP) Complex End Point Criteria* (also referred to as NMS-16404), Rev. 0, Fluor Hanford, Richland, Washington. Available at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=D6455017>.

MSBA, 2011, “Underground Storage Tank Site Assessment and Closure Report” (letter to Gail Jaskar, Washington State Department of Ecology, from Josh Owen), Martin S. Burck Associates, Inc., Hood River, Oregon, June 9. Available at: <http://pdw.hanford.gov/arpir/pdf.cfm?accession=0071320H>.

WAC 173-360, “Underground Storage Tank Regulations,” *Washington Administrative Code*, Olympia, Washington. Available at: <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-360>.

This page intentionally left blank.