1244834
[00069660 H]
CWR-PFP-00009
Revision 0

Pre-CERCLA PFP Structures Demolition Report

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

RECEIVED
JUN 19 2017
EDMC

M-083-00

23

CWR-PFP-00009
Revision 0

Pre-CERCLA PFP Structures Demolition Report

As Left Characterization

Document Type: RPT Program/Project: PFP Closure

R. W. Bloom
CH2M HILL Plateau Remediation Company

Date Published
April 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 1:10 pm, May 15, 2017

Release Approval Date

Approved for Public Release;
Further Dissemination Unlimited

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-00009	Title: **Pre-CERCLA PFP Structures Demolition Report**	
Change Control Record		
(3) Revision	(4) Description of Change – Replace, Add, and Delete Pages	Month/Year
0 RS	Initial release of document describing the demolition of the 2715Z, 2734Z, 234ZB, 234ZC, 2734ZH, 2731Z, 2731ZA, MO834, and MO839 that were demolished prior to 2005 outside of the PFP CERCLA action and the disposition of MO264.	April 2017

This page intentionally left blank.

Contents

1 Introduction 1

2 Building Descriptions and Disposition 1

2.1 2734Z Gas Cylinder Storage Building 2
2.2 2715Z Oil and Solvent Storage Building 3
2.3 234ZB Waste Material Storage Building 4
2.4 234ZC Waste Drum Storage and Loading Dock 4
2.5 MO834 and MO839 Offices Trailers 5
2.6 2734ZH Building 6
2.7 2731Z Building 6
2.8 MO264 Office Trailer 8

3 Demolition and Document Review 9

4 As-Left Condition 9

4.1 As-Left Description 9
4.1.1 Key Documentation and Drawings 9
4.1.2 Radiological and Hazardous Material Characterization 9
4.1.3 Industrial Safety Hazards 9
4.1.4 Surveillance and Maintenance Considerations 9
4.1.5 Regulatory Information 9
4.2 Endpoint Objectives 10
4.3 Administrative Endpoints 10
4.4 Endpoint Documentation 13

5 References 14

Figures

Figure 1. Approximate Locations Within PFP Yard 2
Figure 2. 2734Z Building Before Demolition 2
Figure 3. 2734Z Building After Demolition 3
Figure 4. 2715ZL Building 3
Figure 5. 234ZB Building 4
Figure 6. 234ZC Building Before Demolition 5
Figure 7. 234ZC Building After Removal 5
Figure 8. MO834 and MO839 Before Demolition 6
Figure 9. 2734ZH Building Before Demolition 6
Figure 10. 2731Z Building Before Demolition Looking South 7
Figure 11. 2731Z Building Before Demolition Looking North 7
Figure 12. 2731Z Building During Disassembly 8
Figure 13. MO264 near 19th and Dayton 8

Tables

Table 1. Clean Slab-on-Grade Measureable Objectives 10
Table 2. Administrative Endpoints 11

Terms

CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
DOE	U.S. Department of Energy
FHA	fire hazards analysis
PFP	Plutonium Finishing Plant
S&M	surveillance and maintenance

This page intentionally left blank.

1 Introduction

The purpose of this report is to provide information that will support the following activities:

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

Between 2002 and 2005, several structures (2715Z, 2734Z, 234ZB, 234ZC, 2734ZH, 2731Z, MO834, and MO839) were demolished as part of a yard enhancement project. Some of these demolitions occurred prior to approval of the endpoint approach of HNF-22401. Another mobile office trailer (MO264) was also relocated from the PFP protected area during this time.

This report provides the as-left condition of these structures and summary information relating to endpoint compliance consistent with the overall objectives of HNF-22401, which also requires that relevant information about the remaining slab be part of the final turnover package for transition to S&M.

The structures, many of which were not radioactively contaminated, were removed under U.S. Department of Energy (DOE) authority of the *National Environmental Policy Act of 1969.* Some were done under a categorical exclusion, while others were evaluated in DOE/EA-1469, *Deactivation of the Plutonium Finishing Plant, Hanford Site, Richland, Washington.*

Demolition of the structures was conducted in compliance with applicable regulatory requirements in place at the time. A radioactive air license (NOC ID 518) for demolition of ancillary buildings was issued by the Washington State Department of Health in response to DOE/RL-2002-32, *Radioactive Air Emissions Notice of Construction for Stabilization/Deactivation/Demolition of the Plutonium Finishing Plant Ancillary Buildings and Structures.*

2 Building Descriptions and Disposition

The buildings were located within the PFP Complex, protected generally south of the PFP main building. The buildings that were removed to support de-inventory of PFP are shown on Figure 1.

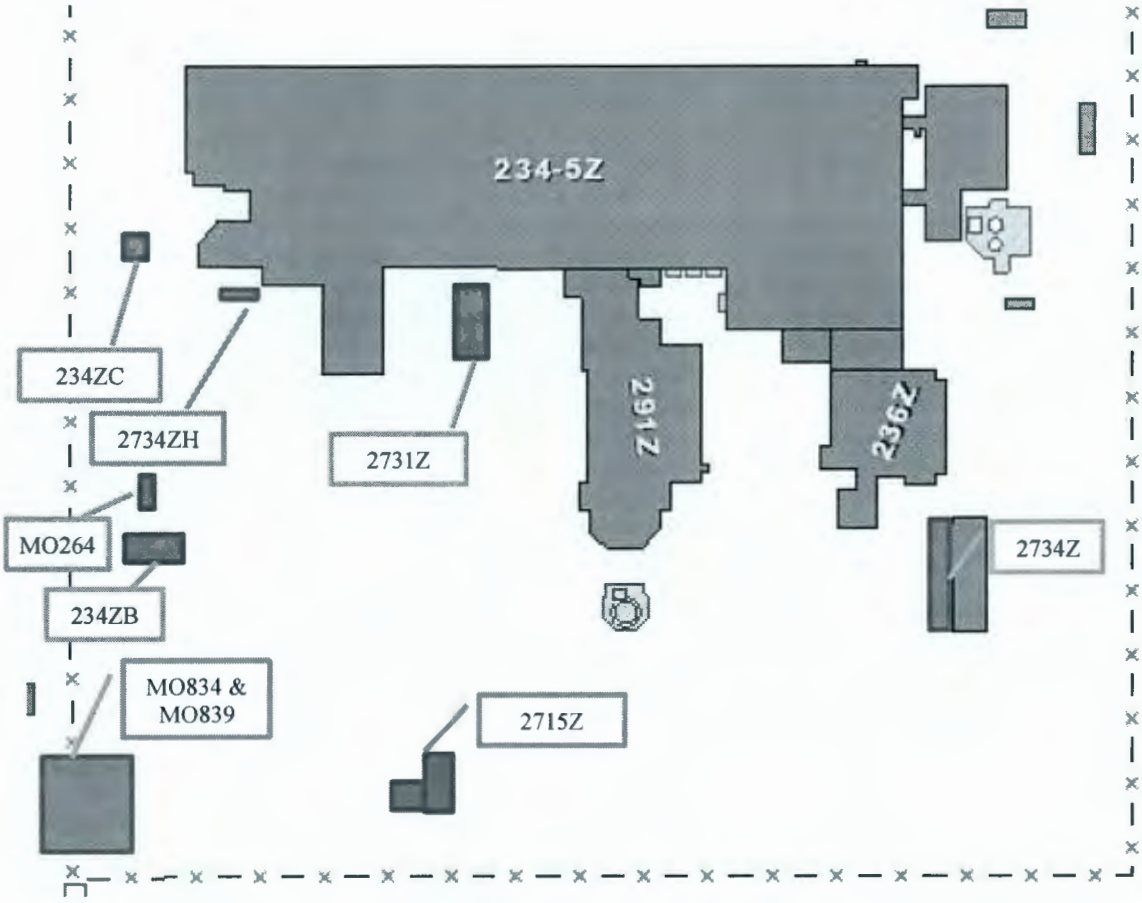

Figure 1. Approximate Locations Within PFP Yard

2.1 2734Z Gas Cylinder Storage Building

The Gas Cylinder Storage Building (2734Z) (Figure 2) was constructed in 1949 as a raised covered bottle dock. The entire structure including the concrete base was removed to make way for the Fast Flux Test Facility vault storage (Figure 3) by work package 2Z-02-00233.

Figure 2. 2734Z Building Before Demolition

Figure 3. 2734Z Building After Demolition

2.2 2715Z Oil and Solvent Storage Building

The Oil and Solvent Storage Building (2715Z) was a combination of three connected sheet metal structures previously numbered 2715Z, 2715ZL, and 2725Z. The structures were located west of the 241Z facility. No picture of the combined structure is available other than a picture of 2715ZL (Figure 4) prior to being combined with the other sheet metal structures to form what was known as the PFP paint shops. The structures and associated pads were removed under work packages (2Z-02-00233 and 2Z-03-00630, respectively) to make way for a new safe and secure trailer parking pad.

Figure 4. 2715ZL Building

2.3 234ZB Waste Material Storage Building

The 234ZB (Figure 5) was a Quonset hut style building with a sheet metal roof and both ends of the building sided with transited siding that was abated prior to demolition. The building was demolished under work package 2Z-04-01955. The building slab was subsequently removed under work package 2Z-08-03117 to facilitate installation of an additional parking slab.

Figure 5. 234ZB Building

2.4 234ZC Waste Drum Storage and Loading Dock

The Waste Drum Storage and Loading Dock (234ZC) was a sheet metal building located under the overhang on the west side of PFP (Figure 6). The building had some fixed contamination on the wall of the structure, but no contamination was found on the slab after the structure was removed (Figure 7).

Figure 6. 234ZC Building Before Demolition

Figure 7. 234ZC Building After Removal

2.5 MO834 and MO839 Offices Trailers

The two offices trailers were located in the southwest corner of the protected area and interconnected with a structure between them (Figure 8). The two trailers and associated structure were demolished by work package 2Z-04-02236.

Figure 8. MO834 and MO839 Before Demolition

2.6 2734ZH Building

This bottle storage area was located on the north side of PFP next to the plutonium process support laboratory annex (Figure 9). The metal structure was disassembled and removed by work package 2Z-04-06347.

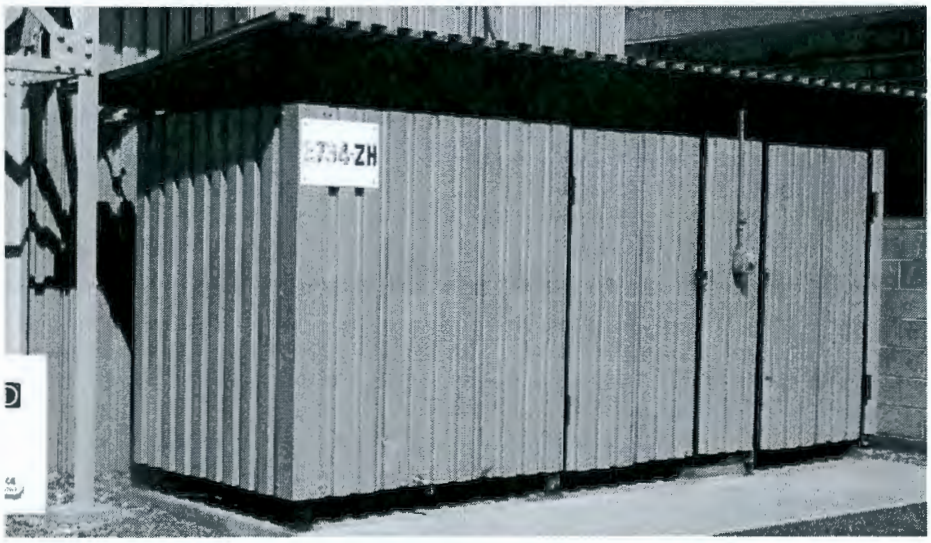

Figure 9. 2734ZH Building Before Demolition

2.7 2731Z Building

The 2731Z PR Can Storage Building was a sheet metal building located south of PFP (Figures 10 and 11). The building was disassembled (Figure 12) under work package 2Z-04-02238, and some fixed contamination was left in one area of the slab.

Figure 10. 2731Z Building Before Demolition Looking South

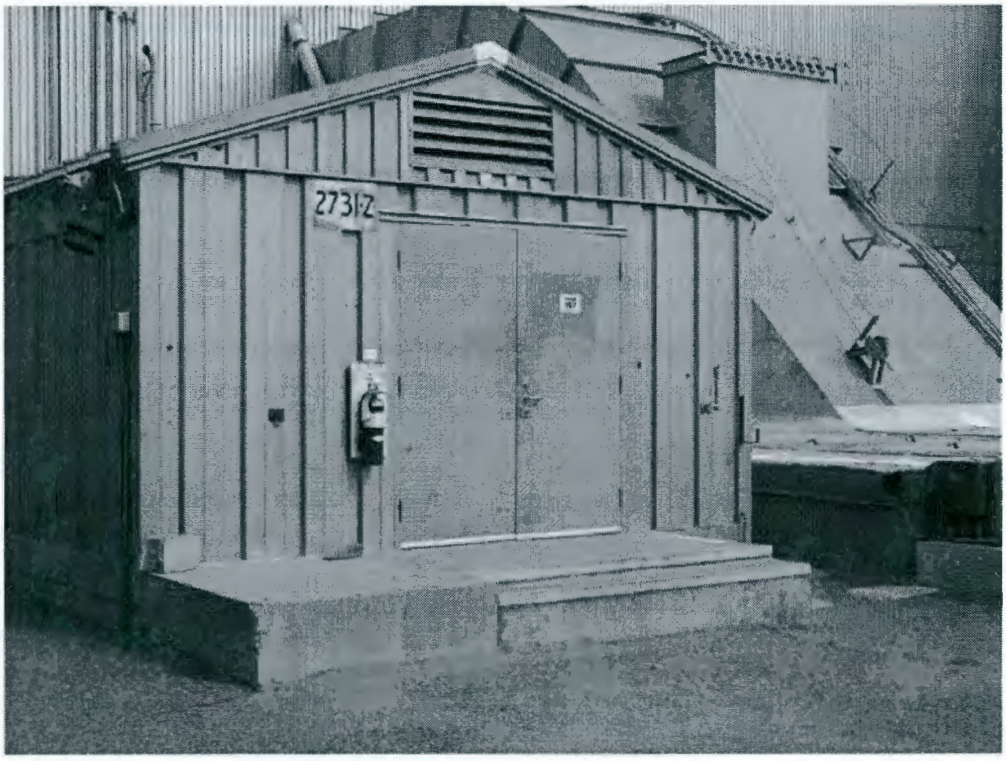

Figure 11. 2731Z Building Before Demolition Looking North

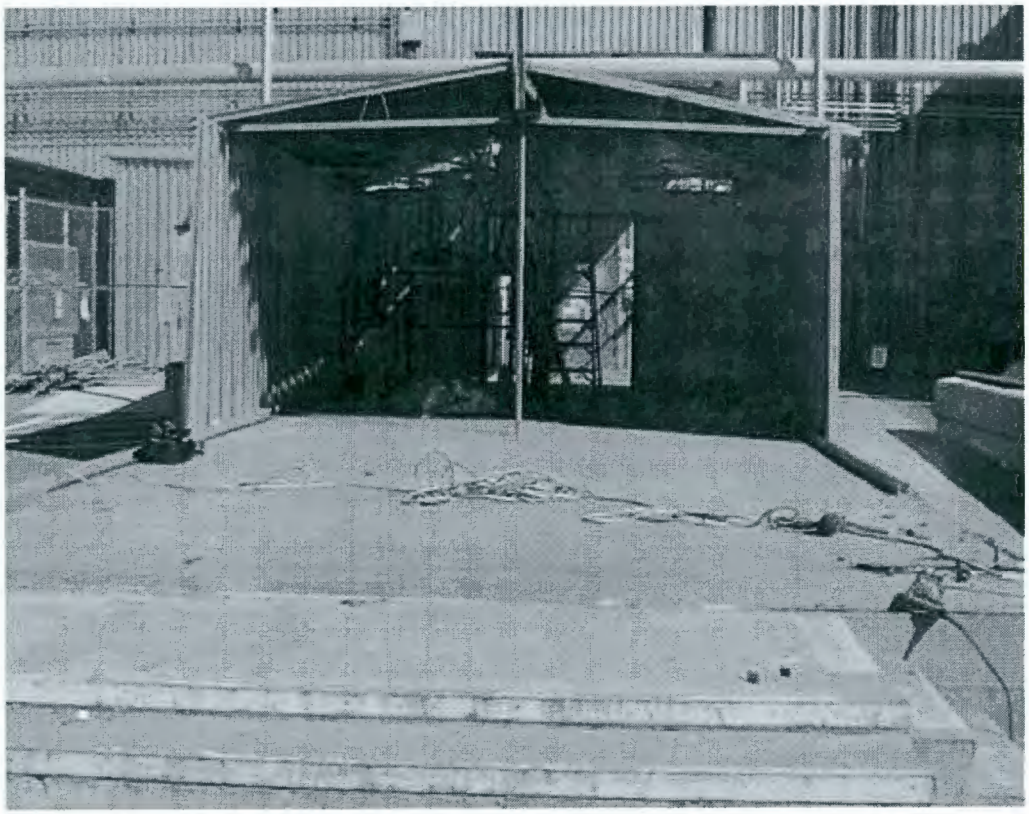

Figure 12. 2731Z Building During Disassembly

2.8 MO264 Office Trailer

The mobile office building (Figure 13) was relocated outside of the PFP area, near the intersection of 19th and Dayton, by work package 2Z-04-04890.

Figure 13. MO264 near 19th and Dayton

3 Demolition and Document Review

Based on a review of the documentation and discussions with onsite individuals at the time of the activity, removal of the structures was uneventful. Most of the waste material was disposed offsite as nonradioactive waste based on process knowledge and the surveys performed. Detailed documentation associated with the disposal was not found in the referenced work documentation.

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

There were no below-grade structures, piping or slab penetrations associated with any of the structures. The only slabs remaining from the activity are associated with 234ZC, 2731Z, and 2734ZH. As discussed in Chapter 2, the foundation/slabs associated with 2734Z, 2715Z, and 234ZB were removed subsequent to demolition to facilitate PFP de-inventory activities.

4.1.1 Key Documentation and Drawings

No drawings associated with any of these structures would be deemed essential or support drawings per engineering configuration management requirements, and no drawings were identified to be considered historical information other than H-2-25397, *PR Can Container Storage Bldg Plans & Details*, which describes the 2731Z slab.

4.1.2 Radiological and Hazardous Material Characterization

With the exception of 2731Z, the remaining slabs did not require controls due to radiological contamination. The area of fixed radiological contamination on the 2731Z slab was repainted after the structure was removed. Because these are adjacent to 234-5Z, they will be in the overall demolition zone of the building, and final radiological characterization would be addressed after the 234-5Z structure is demolished. Due to the nature of the activities in 2715Z, any spills associated with the paint shop activities would have been addressed by removal of the slab. No hazardous materials residuals are known to be associated with any of the facilities.

All facilities were subjected to a predemolition asbestos walkdown. Transite siding on the 234ZB Building was abated prior to demolition. Copies of the notices of intent filed with Benton County Clean Air Authority can be found in the 2Z-04-02236 work document.

4.1.3 Industrial Safety Hazards

No unique industrial safety hazards are associated with the areas where the buildings were located.

4.1.4 Surveillance and Maintenance Considerations

There are no known long term S&M considerations specific to these facilities. The spot contamination on the 2731Z slab will have to be addressed after 234-5Z and 291Z demolition.

4.1.5 Regulatory Information

There are no site-specific regulatory requirements.

4.2 Endpoint Objectives

The 10 measurable objectives outlined in Section VI of HNF-22401 that define clean slab-on-grade are evaluated in Table 1 based on a review of work documentation and physical walkdown of the site by the author of this document who was familiar with all the buildings removals.

Table 1. Clean Slab-on-Grade Measureable Objectives

Objective	Status	Comment
Above-grade structures are removed.	Met	
Below-grade portions of buildings will be emptied and stabilized.	Not applicable	None of the structures had below-grade areas.
Buried pipes and ducts will be drained and sealed.	Not applicable	None of the structures had pipes or ducting.
The portion of concrete slab that is exposed to the weather will be free of dispersible radiological contamination.	To be addressed	Slabs are in the 234-5Z demolition zone.
The exposed surface of the slab shall be free of tripping and puncture hazards.	To be addressed	Elevated slab of 2731Z needs to be reviewed post 234-5Z/291Z demolition.
The exposed surface of the slab shall be suitable for exposure to the weather for at least 20 years.	To be addressed	See Section 4.1.4, All slabs will be in the 234-5Z demolition zone.
Subsurface radiological areas will be posted per regulations.	To be addressed	Slabs are in the 234-5Z demolition zone.
All penetrations through the slab (e.g. piping and conduits, etc.) shall be sealed with grout or equivalent suitable for exposure to the weather for 20 years.	Not applicable	No penetrations through the slabs.
All wastes are removed.	Met	Based on historical knowledge of the author.
No exposed surface soil contamination areas are allowed.	To be addressed	Slabs are in the 234-5Z demolition zone.

Note: Objectives are based on HNF-22401, *Plutonium Finishing Plant (PFP) Complex End Point Criteria.*

4.3 Administrative Endpoints

Since the structures were located inside the PFP inner fence and demolition boundary, the slabs cannot be considered a final condition; administrative endpoints specified in HNF-22401 applicable to the buildings are evaluated in Table 2, and applicable items are documented in Section 4.4.

Table 2. Administrative Endpoints

Checklist Number	Item[a]	Description[a]	Status
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.	Not applicable[b]
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.	Not applicable[b]
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.	Not applicable[b]
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.	Met See Section 4.1.2
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.	Met See Section 4.1.2
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.	The 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]
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 a 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]

Table 2. Administrative Endpoints

Checklist Number	Item[a]	Description[a]	Status
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 S&M 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]
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. This 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.	See Section 4.1.2

a. Descriptions are based on HNF-22401, *Plutonium Finishing Plant (PFP) Complex End Point Criteria.*

b. These administrative criteria are not separately evaluated for the facilities. 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

The endpoint document (HNF-22401) was not finalized until October 2004, and the checklist approach was utilized in performing the demolitions toward the end of 2004. Endpoint checklist items applicable to these simple structures are summarized in Table 3.

Table 3. Endpoint Verification

Endpoint Identification	Endpoint Statement	Status	Verification Method
F-02	Remove structures, equipment, piping, and ducting above the foundation/slab.	Met	Review of work packages and photographs taken at the time. Author's knowledge of the site between 2002 and 2011.
F-11	Conduct housekeeping activities, remove and excess/dispose unattached materials and equipment.	Met	Review of work packages and photographs taken at the time. Author's knowledge of the site between 2002 and 2011.
F-16	Remove/fix/contain radioactive contamination.	Met	Review of work packages and photographs taken at the time. Author's knowledge of the site between 2002 and 2011.
F-18	Verify that the portions of the remaining slab exposed to the weather are free of radiological contamination (contamination may be fixed and below a contamination control cap) to ensure contamination will not migrate to the environment during the S&M phase.	Not Met	Review of work packages and photographs taken at the time. Author's knowledge of the status of the 2731Z slab. The contamination was simply fixed using paint. This endpoint will be addressed after 234-5Z and 291Z demolition.
F-19	Perform radiological survey and post radiological conditions in accordance with site radiological requirements.	Not Met	Author's knowledge of the status of the 2731Z slab. The spot contamination was marked and routinely monitored after demolition. The 2731Z slab area is currently in the 234-5Z and 291Z demolition zone.

Endpoint Identification	Endpoint Statement	Status	Verification Method
F-20	Remove/dispose of nonhazardous, radioactive, hazardous, and mixed waste in accordance with approved waste handling procedures and regulatory requirements.	Assumed Met	Based on the author's knowledge, unless known to be contaminated such as the case of 234ZC, the material was free released based on requirements in effect at the time.
F-21	Slab is labeled/posted for radiological conditions (dose/contamination) and industrial hazards in accordance with approved site procedures.	Not Met	Author's knowledge of the status of the 2731Z slab. The spot contamination was marked and routinely monitored after demolition. The 2731Z slab area is currently in the 234-5Z demolition zone.

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.

DOE/EA-1469, 2003, *Deactivation of the Plutonium Finishing Plant, Hanford Site, Richland, Washington*, Environmental Assessment, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: https://energy.gov/sites/prod/files/2016/03/f30/EA-1469_2003.pdf.

DOE/RL-2002-32, 2002, *Radioactive Air Emission Notice of Construction for Stabilization/Deactivation/Demolition of the Plutonium Finishing Plant Ancillary Buildings and Structures*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

H-2-25397 (drawing), 1966, *PR Can Container Storage Bldg Plans & Details*, Rev. 1, Vitro Engineering Company, 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.

National Environmental Policy Act of 1969, 42 USC 4321, et seq. Available at: http://www.epw.senate.gov/nepa69.pdf.