AMENDMENT OF SOLICITATION

1. AMENDMENT NO. 04	2. EFFECTIVE DATE – 11/13/2025	3. PAGE 1 OF 1

4. ISSUED BY: **Southern Ohio Cleanup Company LLC**
P.O. Box 368
3930 US Route 23 South
Piketon, OH 45661

5. NAME AND ADDRESS OF CONTRACTOR (*Name, street ,county, state &,zip code*)	6. AMENDMENT OF (RFP) SOLICITATION NO. FBPSC239551	DATE
All Offeror(s)		10/2/2025

7.
The above numbered solicitation is amended as set forth in Item 8. The hour and date specified for receipt of Offers __ is extended X__ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods:

(a) By completing Items 5 and 9, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or e-mail which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by e-mail or letter, provided each e-mail or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

8. DESCRIPTION OF AMENDMENT

Except as provided herein, all terms and conditions of the document remain unchanged and in full force and effect.

Provide supplemental information regarding waste handling. (ATT.1-Comp PB RDRA WP D3 R8 Master 6-18-24)

9A. NAME AND TITLE OF SIGNER (*Type or print*)		10A. Fluor BWXT Portsmouth LLC Mark Pollard – Contract Administrator	
9B. CONTRACTOR/OFFEROR _____ (*Signature of person authorized to sign*)	9C. DATE SIGNED	10B. MARK POLLARD (Affiliate) Digitally signed by MARK POLLARD (Affiliate) Date: 2025.11.13 14:32:50 -05'00' _____ (*Signature*)	10C. DATE SIGNED

COMPREHENSIVE DEACTIVATION, DEMOLITION, AND DISPOSITION REMEDIAL DESIGN/REMEDIAL ACTION WORK PLAN FOR THE PROCESS BUILDINGS AND COMPLEX FACILITIES REMEDIAL ACTION PROJECT AND REMEDIAL DESIGN FOR DEACTIVATION OF COMPLEX FACILITIES AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO

U.S. Department of Energy
DOE/PPPO/03-0758&D3

June 2024

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COMPREHENSIVE DEACTIVATION, DEMOLITION, AND DISPOSITION REMEDIAL DESIGN/REMEDIAL ACTION WORK PLAN FOR THE PROCESS BUILDINGS AND COMPLEX FACILITIES REMEDIAL ACTION PROJECT AND REMEDIAL DESIGN FOR DEACTIVATION OF COMPLEX FACILITIES AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO

U.S. Department of Energy
DOE/PPPO/03-0758&D3

June 2024

Prepared for
U.S. Department of Energy

Prepared by
Fluor-BWXT Portsmouth LLC, Under Contract DE-AC30-10CC40017
FBP-ER-RDRA-BG-PLN-0075, Revision 8

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ACRONYMS

ACM	asbestos-containing material
AOC	area of contamination
ARAR	applicable or relevant and appropriate requirement
CAMU	Corrective Action Management Unit
CFR	*Code of Federal Regulations*
COPC	chemical of potential concern
D&D	decontamination and decommissioning
DFF&O	*The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FBP	Fluor-BWXT Portsmouth LLC
FWCR	Field Work Completion Report
FY	fiscal year
IMTA	Impacted Materials Transfer Area
ISMS	Integrated Safety Management System
LLW	low-level (radioactive) waste
NDA	nondestructive assay
NESHAP	National Emission Standards for Hazardous Air Pollutants
NNSS	Nevada National Security Site
NPDES	National Pollutant Discharge Elimination System
NRC	U.S. Nuclear Regulatory Commission
O&M	operation and maintenance
OAC	*Ohio Administrative Code*
Ohio EPA	Ohio Environmental Protection Agency
OSWDF	on-site waste disposal facility
PCB	polychlorinated biphenyl
PGE	process gas equipment
PHC	principal hazardous constituent
PORTS	Portsmouth Gaseous Diffusion Plant
PPE	personal protective equipment
PSVP	Performance Standard Verification Plan
QA	quality assurance
QC	quality control
RAWP	Removal Action Work Plan
RCRA	Resource Conservation and Recovery Act of 1976, as amended
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
S&M	surveillance and maintenance
SADQ	*Sample and Analysis Data Quality Assurance Project Plan*
SAP	sampling and analysis plan
SOW	Statement of Work
TBC	to-be-considered (guidance)
TCE	trichloroethene
TPMC	Theta Pro2Serve Management Company, LLC

TSCA	Toxic Substances Control Act of 1976
TSD	treatment, storage, and disposal
UST	underground storage tank
WAC	waste acceptance criteria
WAO	Waste Acceptance Organization

EXECUTIVE SUMMARY

This work plan and design submittal, the *Comprehensive Deactivation, Demolition, and Disposition Remedial Design/Remedial Action Work Plan for the Process Buildings and Complex Facilities Remedial Action Project and Remedial Design for Deactivation of Complex Facilities at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (hereafter referred to as the Comprehensive Process Buildings Remedial Design/Remedial Action [RD/RA] Work Plan), is prepared under *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto* (DFF&O).

The *Record of Decision for the Process Buildings and Complex Facilities Decontamination and Decommissioning Evaluation Project at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (Process Buildings Record of Decision [ROD]) presents the selected remedy of decontamination and decommissioning (D&D) as controlled demolition for the Process Buildings and Complex Facilities D&D Project (Process Buildings Project) at the U.S. Department of Energy (DOE) Portsmouth Gaseous Diffusion Plant (PORTS) in Piketon, Ohio. The *Record of Decision for the Site-wide Waste Disposition Evaluation Project at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (Waste Disposition ROD) presents the selected remedy, a combination of on-site and off-site disposal, for the Site-wide Waste Disposition Evaluation Project at PORTS in Piketon, Ohio. The Process Building Project remedy applies to all the buildings, structures, and infrastructure listed in the DFF&O Attachment H, List of Remedial Action [Remedial Investigation/Feasibility Study] (RI/FS) Process Buildings and Complex Facilities.

Due to the size of the remedial action, DOE elected to accelerate portions of this remedial action work scope (deactivation activities for the three large PORTS process buildings [X-326, X-330, and X-333 and their associated tie lines and portal structures] and deactivation, demolition, and off-site disposition of the X-114A Outdoor Firing Range) under two separate RD/RA work plans, prepared and submitted for the Ohio Environmental Protection Agency (Ohio EPA) concurrence in advance of completion of this Comprehensive Process Buildings RD/RA Work Plan.

DOE has also completed evaluation of two DFF&O Attachment H structures (XT-800 and X-744V) under the requirements of the DFF&O and Process Buildings ROD and determined, with concurrence from Ohio EPA, that no further action is required for those two structures. Ongoing evaluation of buildings and structures at PORTS is expected to identify additional DFF&O Attachment H buildings and structures requiring no further action under the Process Buildings ROD.

This Comprehensive Process Buildings RD/RA Work Plan addresses the remedy for the DFF&O Attachment H buildings and structures under the following categories of activity:

- Deactivation
- Demolition
- Waste management.

Deactivation and demolition are supported by ongoing work activities which are identified as part of the remedy in the Process Buildings ROD. These activities include: access controls and surveillance, preventative maintenance, and housekeeping; mobilization and site preparation; characterization and data collection; and demobilization and site restoration. Waste management is a collection of work activities from the Waste Disposition ROD that supports transportation and disposition of the materials and waste from the deactivation and demolition activities.

Deactivation
Deactivation is performed as the first phase of the remedy, preparing each structure for follow-on demolition activities by reducing work hazards, removing hazardous materials and energy sources, and otherwise achieving demolition readiness. Deactivation focuses on preparing the buildings and structures for safe demolition by removing building contents that must be managed for disposition separate from the demolition waste stream. However, deactivation also includes conducting routine support activities, such as surveillance and maintenance, housekeeping, and other facility operations necessary to maintain buildings and structures pending demolition. Deactivation work described in this plan will achieve the following standardized demolition readiness conditions to the extent possible under the deactivation activities described in the work plan:

- Items remaining in the buildings, including the structures, are compliant with the On-site Waste Disposal Facility (OSWDF) waste acceptance criteria Components 1 and 2 (Prohibited Items and Activity and Chemical Concentration Criteria).

- Wastes identified for off-site disposal have been appropriately removed as described in the Corrective Action Management Unit Supplement (CAMU) to the Waste Disposition RI/FS and adopted in the CAMU decision presented in the Waste Disposition ROD.

- The equipment and materials remaining in the buildings pose no credible basis under any conditions for a nuclear criticality event (criticality incredible).

- Utilities to the buildings have been isolated, except for the storm sewer and limited electrical service.

- Buildings have been secured to prevent unauthorized entry.

This Comprehensive Process Buildings RD/RA Work Plan addresses deactivation for the PORTS complex buildings/structures included in the Process Buildings ROD, and any deactivation activities for the process buildings not already addressed in the Process Buildings Deactivation RD/RA Work Plan. This Work Plan provides the DFF&O-required components of an RD/RA work plan for deactivation and also includes the DFF&O remedial design required for the deactivation remedial action for the complex buildings/structures, including transportation and disposition of waste and materials in support of deactivation.

Following Ohio EPA concurrence with this work plan, the deactivation (and materials and waste disposition) activities addressed by this plan will commence. No additional submittals or approvals will be required to authorize these activities.

Demolition
Demolition follows deactivation in each building or structure, whether immediately or at a later time. Demolition documentation is approached differently than deactivation in this Comprehensive Process Buildings RD/RA Work Plan. Demolition will require additional submittals and concurrence by Ohio EPA prior to starting work.

This work plan provides the DFF&O-required components of an RD/RA work plan for demolition, including demonstrating how applicable or relevant and appropriate requirements under both RODs and DFF&O requirements will be met for deactivation, identifying how future project-specific demolition plans will be prepared and submitted for Ohio EPA review and concurrence, and identifying how milestones and target dates will be established for these projects.

There are no plans for development of additional RD/RA work plans for demolition. The DFF&O-required components of demolition design will be provided in future demolition plans that will be submitted separately for each demolition project as funding for D&D becomes available. These future demolition plans may be for individual buildings/structures or may include groupings of buildings/structures or parts thereof (e.g., when at- and below-grade demolition is performed separate from above-grade demolition). Demolition plans will include additional specified content, including additional waste disposition forecasting.

Deactivation, demolition, and the associated transportation and disposition of materials and waste will be accomplished as part of the overall remediation work conducted under the DFF&O. Overall work under the DFF&O includes the construction of the OSWDF and related supporting buildings/structures under other work plans and designs, and also includes the removal of the buildings and structures identified in Attachment G of the DFF&O which are being managed under the engineering evaluation and cost analysis and action memoranda process. As discussed further in Section 1.3, the sequencing of these actions to match funding and logistical needs, as well as other technical and practical considerations, will be a major remediation undertaking that may take decades to complete.

This work plan additionally provides:

- Summaries of previous investigations and actions, highlighting chemical and radiological contaminants associated with the buildings to be remediated (Section 2)

- Description of the scope of the actions addressed by the plan and the documentation approaches to be used (Section 3)

- Design and construction information for deactivation and associated waste management transportation (Section 4)

- Identification of waste types to be dispositioned off site as a result of deactivation (Section 5)

- Summaries of the plans (such as the regulatory compliance plan) that support the project (Section 6)

- Organization, cost, schedule, and reporting requirements for the project (Sections 7 and 8).

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1. INTRODUCTION

This work plan and design submittal, the *Comprehensive Deactivation, Demolition, and Disposition Remedial Design/Remedial Action Work Plan for the Process Buildings and Complex Facilities Remedial Action Project and Remedial Design for Deactivation of Complex Facilities at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (hereafter referred to as the Comprehensive Process Buildings Remedial Design/Remedial Action [RD/RA] Work Plan), is prepared under *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto* (DFF&O) (Ohio Environmental Protection Agency [Ohio EPA] 2012), the mutual agreement between the U.S. Department of Energy (DOE) and Ohio EPA for conducting building decontamination and decommissioning (D&D) under a Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, regulatory framework.

The *Record of Decision for the Process Buildings and Complex Facilities Decontamination and Decommissioning Evaluation Project at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2015a) (Process Buildings Record of Decision [ROD]) presents the selected remedy, D&D via controlled demolition, for the Process Buildings and Complex Facilities D&D Evaluation Project (Process Buildings Project) at the DOE Portsmouth Gaseous Diffusion Plant (PORTS) in Piketon, Ohio.

The *Record of Decision for the Site-wide Waste Disposition Evaluation Project at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2015b) (Waste Disposition ROD) presents the selected site-wide waste disposition remedy, a combination of on-site and off-site disposal, for the Site-wide Waste Disposition Evaluation Project at PORTS. The Process Buildings Project remedy applies to all the buildings, structures, and infrastructure listed in the DFF&O Attachment H, List of Remedial Action [Remedial Investigation/Feasibility Study] (RI/FS) Process Buildings and Complex Facilities.

This Comprehensive Process Buildings RD/RA Work Plan integrates remedial design and remedial action work categories from both RODs. The work scope includes all of the work categories identified in the Process Buildings ROD: access controls and surveillance, preventative maintenance and housekeeping; mobilization and site preparation; characterization and data collection; hazard abatement; process gas equipment (PGE) removal; utility and system deactivation; demolition; demobilization and site restoration; and waste packaging. PGE removal from the three large process buildings was addressed by the *Remedial Design/Remedial Action Work Plan and Remedial Design for the Process Buildings Deactivation at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio, Deactivation of X-326, X-330, X-333, X-111A, X-111B, X-232C1, X-232C2, X-232C3, X-232C4, and X-232C5* (DOE 2016a) (Process Buildings Deactivation RD/RA Work Plan) and is not addressed further in this work plan. The work scope also includes transportation and disposition of deactivation and demolition materials and waste, collectively referred to as waste management, work categories established in the Waste Disposition ROD.

Due to the size of the remedial action, DOE elected to accelerate portions of this remedial action work scope (deactivation and associated waste disposition activities of the three large process buildings and deactivation, demolition, and off-site disposition of the X-114A Outdoor Firing Range) under two separate RD/RA work plans prepared and submitted for Ohio EPA concurrence in advance of completion of this Comprehensive Process Buildings RD/RA Work Plan:

- Process Buildings Deactivation RD/RA Work Plan

- *Remedial Design/Remedial Action Work Plan for the X-114A Outdoor Firing Range at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2016b) (X-114A Outdoor Firing Range RD/RA Work Plan).

The scopes addressed in these two previously submitted and concurred-with RD/RA work plans are not modified by this work plan; however, demolition of the three large process buildings and associated structures is included under this work plan.

DOE has also completed evaluation of two DFF&O Attachment H structures under the requirements of the DFF&O and Process Buildings ROD and determined, with concurrence from Ohio EPA, that no further action is required for those structures. The no further action determination is documented in the *Facility Completion Report for the X-744V Surplus and Salvage Clean Storage Area and XT-800 GCEP Construction Office Pad at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2017a). Ongoing evaluation of buildings and structures at PORTS is expected to identify additional DFF&O Attachment H buildings and structures requiring no further action under the Process Buildings ROD.

This Comprehensive Process Buildings RD/RA Work Plan addresses the remedy for the DFF&O Attachment H buildings and structures under the following categories of activity:

- Deactivation
- Demolition
- Waste management.

Deactivation and demolition are supported by ongoing work activities, which are identified as part of the remedy in Sections 12.2.1 and 12.2.2 of the Process Buildings ROD. These activities include: access controls and surveillance, preventative maintenance, and housekeeping; mobilization and site preparation; characterization and data collection; and demobilization and site restoration. Section 1.3 provides additional details related to the approach for deactivation and demolition activities. Waste management activities are discussed within the summaries provided for deactivation and demolition as well as separately in this work plan, where necessary, to illustrate the waste management remedy activities more completely (such as in Section 1.3.3 and Section 4.3). Figure 1 illustrates how the overall scope of the remedy for DFF&O Attachment H buildings and structures, comprised of the three main categories of activity, is addressed by the three RD/RA work plans under the two RODs. Demolition activities will be further defined by demolition plans to be submitted as projects are planned.

Following Ohio EPA concurrence with this work plan, the deactivation activities and materials and waste disposition activities addressed by this plan will commence. No additional submittals or approvals will be required to authorize these activities.

In addition, this Comprehensive Process Buildings RD/RA Work Plan also:

- Provides additional information about other related documents (Section 1.2)

- Identifies the general plan for deactivation and demolition for all buildings and structures included in Attachment H of the DFF&O and how these activities are expected to integrate with other actions on the site (Section 1.3)

- Identifies the way required plans and reports will be prepared and transmitted to Ohio EPA for concurrence.

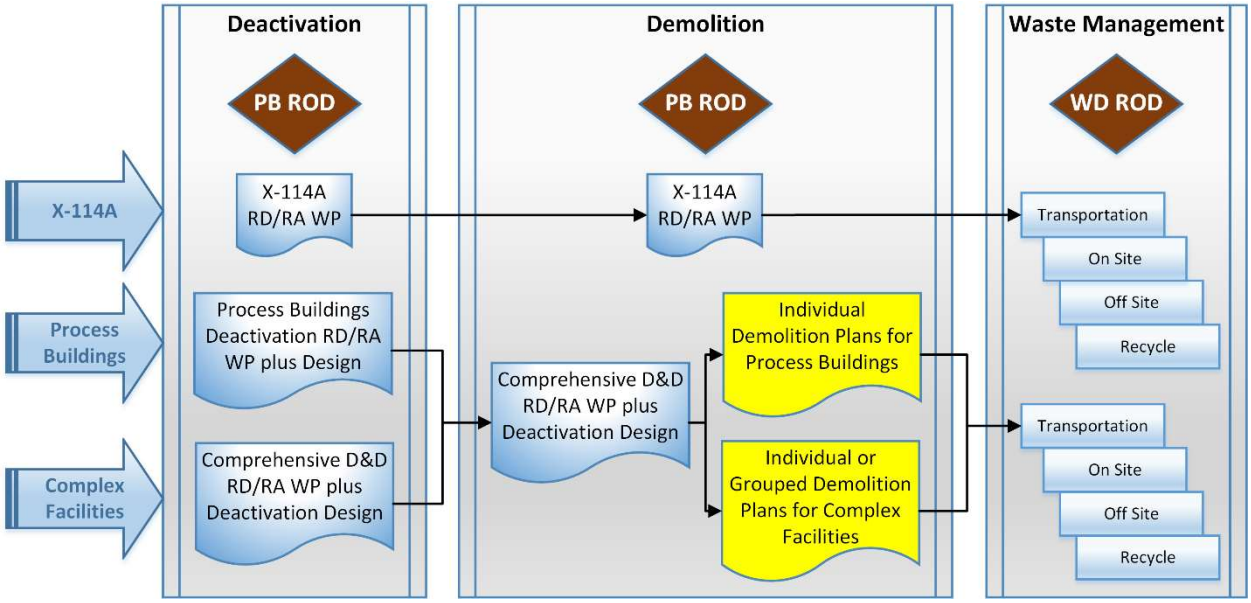

Figure 1. Relationship between RODs and Key Activity Categories

Note that where the Process Buildings ROD used the term "facility" when referring to buildings, utility systems, or infrastructure units, this work plan uses the terms buildings and structures or buildings/ structures instead to avoid confusion with the DFF&O use of the term Facility, meaning the PORTS site.

Note that throughout this work plan, when the DFF&O Attachment H buildings and structures are addressed, only those buildings and structures still requiring remedial action under the Process Buildings ROD are meant to be addressed. It is recognized that buildings and structures can be added to or removed from the scope of this work plan, if the list of Attachment H structures is modified in the DFF&O or if a building or structure is determined (with Ohio EPA concurrence) to already meet conditions that are protective of human health and the environment relative to the remedial action objectives of the Process Buildings ROD.

Figure 2 shows the locations of the DFF&O Attachment H buildings and structures within the contiguous PORTS property boundary. For clarity, systems (such as utilities), underground features (such as interconnecting tunnels), and off-site buildings and structures (such as water supply wells and air monitoring stations) are not shown.

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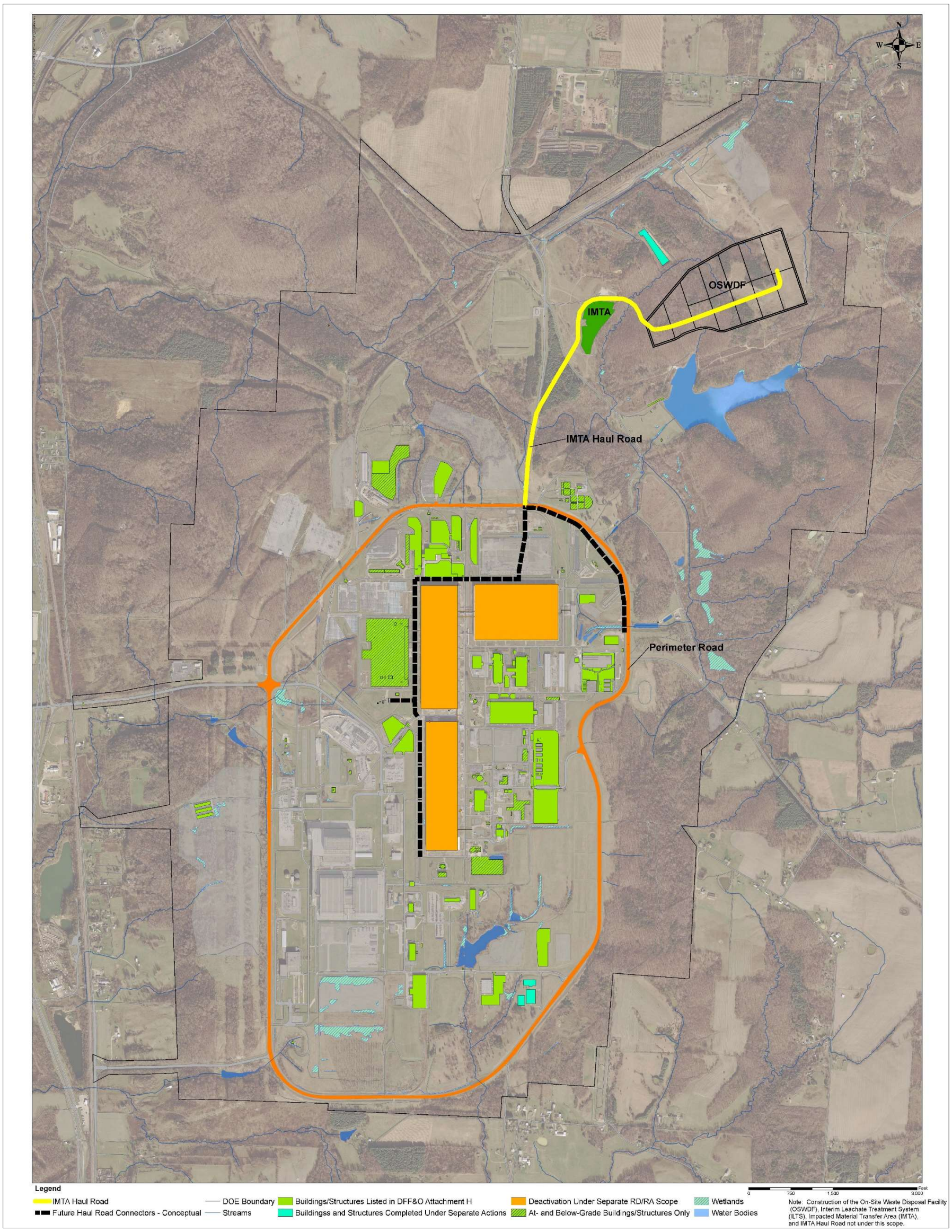

Figure 2. Location of DFF&O Attachment H Buildings and Structures

Note: E-size drawing that includes building/structure identification numbers is provided at the end of this document.

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In addition to showing the locations of buildings and structures in the scope of this work plan, Figure 2 also identifies related features and structures anticipated to be constructed or prepared in support of implementation of the remedies under both the Process Buildings ROD and Waste Disposition ROD:

- The On-site Waste Disposal Facility (OSWDF), an Impacted Material Transfer Area (IMTA), and a primary waste haul route (the IMTA Haul Road) are addressed by the *Comprehensive On-Site Waste Disposal Facility Remedial Design/Remedial Action Work Plan for the Portsmouth Gaseous Diffusion Project, Piketon, Ohio* (Comprehensive OSWDF RD/RA Work Plan) (DOE 2018a). These future features and structures will provide support for on-site disposition of the waste generated under this work plan; however, the IMTA and IMTA Haul Road may not be available during the entire operation schedule for the OSWDF. Site rail infrastructure is not shown, but is also acceptable for waste hauling to the OSWDF.

- Haul routes, to be constructed or designated from project areas, that connect to a main haul road to the OSWDF (or to a rail loading area) have been conceptualized. If determined to be necessary, specific haul connector routes for D&D waste and/or specific rail utilization plans will be included in future design submittals under this work plan.

1.1 PURPOSE OF THE WORK PLAN AND DESIGN

This document comprehensively provides the RD/RA work plan for the Process Buildings Project remedy (although previously submitted RD/RA work plan scopes are not modified by this plan) and transportation and disposition of deactivation and demolition waste under the Site-wide Waste Disposition Evaluation Project remedy. This work plan also provides the remedial design for the deactivation remedial action for the PORTS complex buildings/structures and disposition of deactivation wastes in accordance with the requirements of the DFF&O, the Process Buildings ROD, and the Waste Disposition ROD. This document satisfies the requirements of DFF&O Paragraph 15, Remedial Design and Remedial Action (and other subsections addressing the remedial design and remedial action requirements of a project, such as Attachment B of the DFF&O). It also provides a specific compliance approach for applicable or relevant and appropriate requirements (ARARs) to be implemented in the deactivation design.

This work plan and design does the following:

- Addresses the deactivation remedial action activities necessary to maintain the existing buildings and structures and achieve demolition readiness criteria identified in Section 4.2 for each in the scope of this plan (the PORTS complex buildings/structures)

- Addresses the waste and materials transportation and disposition activities necessary to support deactivation

- Identifies how future project-specific demolition plans for both the process buildings and the complex buildings/structures (including site restoration) will be prepared and submitted for Ohio EPA review and concurrence

- Identifies the process for establishing project-specific milestones and target dates per Sections III.5.k. and III.5.kk. of the DFF&O.

1.2 RELATIONSHIP TO OTHER DOCUMENTS

This Comprehensive Process Buildings RD/RA Work Plan is one of four RD/RA work plans prepared under the DFF&O:

- Process Buildings Deactivation RD/RA Work Plan
- X-114A Outdoor Firing Range RD/RA Work Plan
- Comprehensive OSWDF RD/RA Work Plan.

The Comprehensive OSWDF RD/RA Work Plan addresses implementation of the on-site disposal portion of the waste disposition remedy; it addresses the design, construction, and operation of the OSWDF and related planned support components such as the future IMTA and IMTA Haul Road. These components will be important parts of the overall remedial action for disposition of wastes from the Process Buildings Project.

Waste and materials resulting from building and structure deactivation, demolition, and site restoration activities conducted under this Comprehensive Process Buildings RD/RA Work Plan will be dispositioned either off site or to the OSWDF. Impacted water generated under this work plan will be treated to meet discharge standards at either a project-specific treatment system or a centralized treatment system, if available. When stand-alone project-specific treatment is constructed under this Comprehensive Process Buildings RD/RA Work Plan, the design and associated supporting information will be submitted as part of a related demolition design plan or as a separate design submittal. It is not anticipated that additional wastewater treatment systems will be needed to support deactivation activities.

The Process Buildings Deactivation RD/RA Work Plan and the X-114A Outdoor Firing Range RD/RA Work Plan complete discrete portions of the overall Process Buildings Project and associated waste and materials disposition management under the Waste Disposition ROD. These work plans have been concurred with by Ohio EPA. Following deactivation activities in the buildings and structures addressed by the Process Buildings Deactivation RD/RA Work Plan, demolition and site restoration will be conducted in accordance with this Comprehensive Process Buildings RD/RA Work Plan, under project-specific demolition plans to be developed as described in Section 3.2.2. The X-114A Outdoor Firing Range demolition and waste disposition has been completed; stabilized soils from the firing range area are expected to be disposed in the OSWDF.

A variety of other plans share an interface with this work plan. For example, the *Waste Acceptance Criteria Implementation Plan for the On-Site Waste Disposal Facility at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2018b) (Waste Acceptance Criteria [WAC] Implementation Plan), a plan prepared under the Comprehensive OSWDF RD/RA Work Plan, provides the waste prohibitions and the waste preparation and administrative requirements to be met for waste acceptance at the OSWDF. Additionally, previous Engineering Evaluation/Cost Analysis documents and associated Action Memoranda prepared under the DFF&O have been issued to address DFF&O Attachment G buildings and structures at PORTS. The Removal Action Work Plans (RAWPs) to be developed to complete deactivation and demolition of the Attachment G buildings and structures are closely aligned with the activities addressed under this work plan (see Section 1.3).

1.3 OVERALL APPROACH FOR THE REMEDY

This Comprehensive Process Buildings RD/RA Work Plan addresses the remedy for the DFF&O Attachment H buildings and structures under the primary activity categories of deactivation, demolition, and waste management. Approaches for each of these activity categories are highlighted below.

1.3.1 Deactivation

Deactivation is performed as the first phase of remedy implementation. Deactivation activities prepare each structure for follow-on demolition activities by reducing work hazards, removing hazardous materials, and otherwise achieving demolition readiness criteria. However, the deactivation phase also includes and continues the surveillance and maintenance (S&M), housekeeping, and other facility operations necessary for buildings and structures during the period prior to their demolition (including, but not limited to, inspections, roof repair, trash removal, grounds maintenance, etc.).

In order to expedite work at PORTS, DOE elected to separately address the deactivation of the three large process buildings and their associated tie lines and portal structures in the Process Buildings Deactivation RD/RA Work Plan.

This Comprehensive Process Buildings RD/RA Work Plan addresses deactivation for the PORTS complex buildings/structures included in the Process Buildings ROD, and any deactivation activities for the process buildings not already addressed in the Process Buildings Deactivation RD/RA Work Plan. Deactivation activities described herein will be conducted following the Ohio EPA's concurrence with this work plan.

The anticipated sequence of activities under the Process Buildings Project maintains a deactivation focus on the three large process buildings (currently underway in all three buildings), with the X-326 Process Building expected to be completed first. Deactivation of smaller buildings and structures will generally be performed in a sequence that results from consideration of cleanup priorities, funding levels, logistical considerations, soil needs for matching with debris at the OSWDF, land parcel reuse considerations, the needs of other site projects, and other spatial management considerations. The general sequence to focus on deactivation of the large process buildings leads to early off-site removal of the majority of the wastes at PORTS that are prohibited from disposal at the OSWDF and readies the largest site buildings and structures for earliest demolition.

This work plan includes the DFF&O design requirements necessary to implement deactivation for the PORTS complex buildings/structures (Section 4.2) and the transportation and disposition of resulting waste and materials (Section 4.3). Deactivation work described in this plan will achieve the following standardized demolition readiness conditions, to the extent possible through implementation of the deactivation activities identified in Section 4.2:

- Items remaining in the buildings, including the structures, are compliant with the OSWDF waste acceptance criteria Components 1 and 2 (Prohibited Items and Activity and Chemical Concentration Criteria).

- Wastes identified for off-site disposal have been appropriately removed as described in the *Supplement No. 1 to the Remedial Investigation and Feasibility Study Report for the Site-wide Waste Disposition Evaluation Project: Proposed Corrective Action Management Unit and Area of Contamination Designations for Alternative 2 at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2014a) (Corrective Action Management Unit [CAMU] Supplement to the Waste Disposition RI/FS) and adopted in the CAMU decision presented in the Waste Disposition ROD.

- The equipment and materials remaining in the buildings pose no credible basis under any conditions for a nuclear criticality event (criticality incredible).

- Utilities to the buildings have been isolated, except for the storm sewer and limited electrical service.
- Buildings have been secured to prevent unauthorized entry.

Figure 3 highlights the deactivation portion of the remedial actions, illustrating that the overall scope of deactivation of Attachment H buildings and structures is completed under three RD/RA work plans under the Process Buildings ROD.

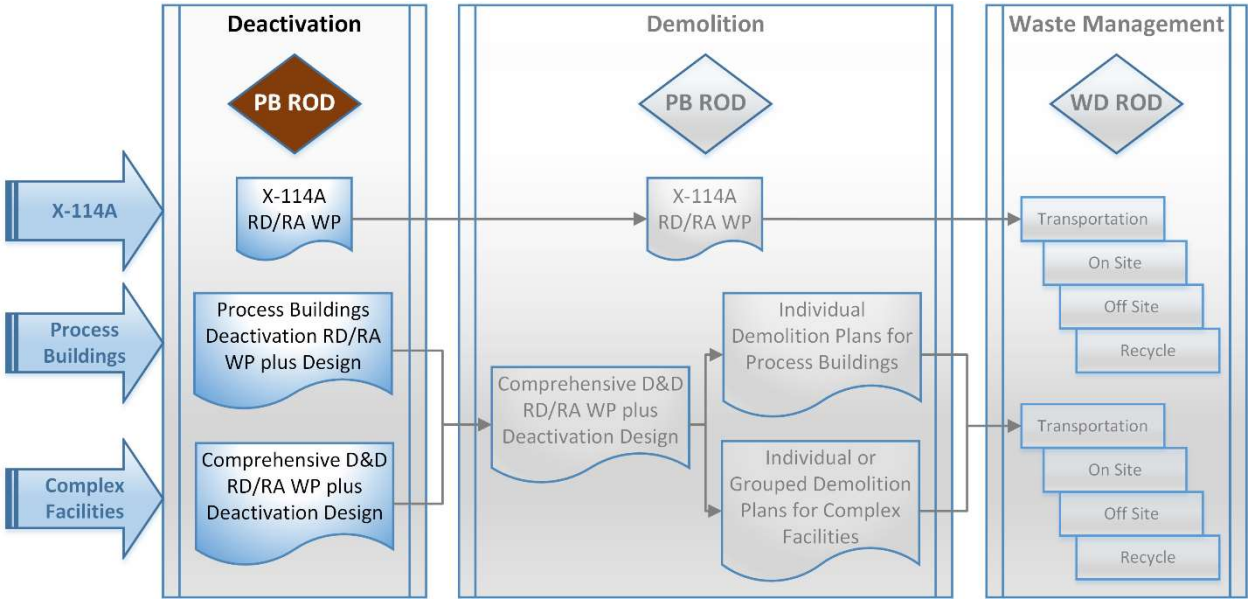

Figure 3. Deactivation Remedial Action Addressed Under Three RD/RA Work Plans

Upon Ohio EPA concurrence with this work plan, ongoing work activities identified above become part of the remedy implementation for the buildings and structures addressed by this plan (although these ongoing types of deactivation activities for the three large process buildings are already being managed under the Process Buildings Deactivation RD/RA Work Plan).

1.3.2 Demolition

Demolition follows deactivation in each building or structure, either immediately or at a later date. Demolition documentation is approached differently than deactivation in this Comprehensive Process Buildings RD/RA Work Plan. Demolition will require additional submittals and concurrence by Ohio EPA prior to starting work.

This work plan provides the DFF&O-required components of an RD/RA work plan for demolition, including demonstrating how ARARs under both RODs and DFF&O requirements will be met (compliance approaches for ARARs associated with deactivation activities are provided in Appendix A, whereas compliance approaches for ARARs related to demolition will be provided in demolition plans). It also identifies how future project-specific demolition plans for demolition projects will be prepared and submitted for Ohio EPA review and concurrence and how milestones and target dates will be established for these projects. This work plan also demonstrates DOE's project strategies for reaching the endpoint requirements for the projects, including describing the key role that deactivation activities play in preparing buildings and structures for controlled demolition.

There are no additional RD/RA work plans required for demolition; however, consistent with DFF&O Section VI.15.f., the DFF&O-required components of design for demolition will be provided in future remedial design demolition plans that will be submitted separately for each demolition project as funding for D&D projects becomes available. Demolition plans may address individual buildings and structures or may include groupings or parts of buildings and structures (e.g., when at- and below-grade demolition is performed separate from above-grade demolition). Demolition plans will include additional specific content, including additional waste disposition forecasting.

Figure 4 highlights the demolition portion of the remedial actions, illustrating that the overall scope of demolition of Attachment H buildings and structures is completed under two RD/RA work plans under the Process Buildings ROD and follow-on demolition plans (highlighted yellow) to be prepared and submitted at later times. The X-114A project identified in the figure has been completed.

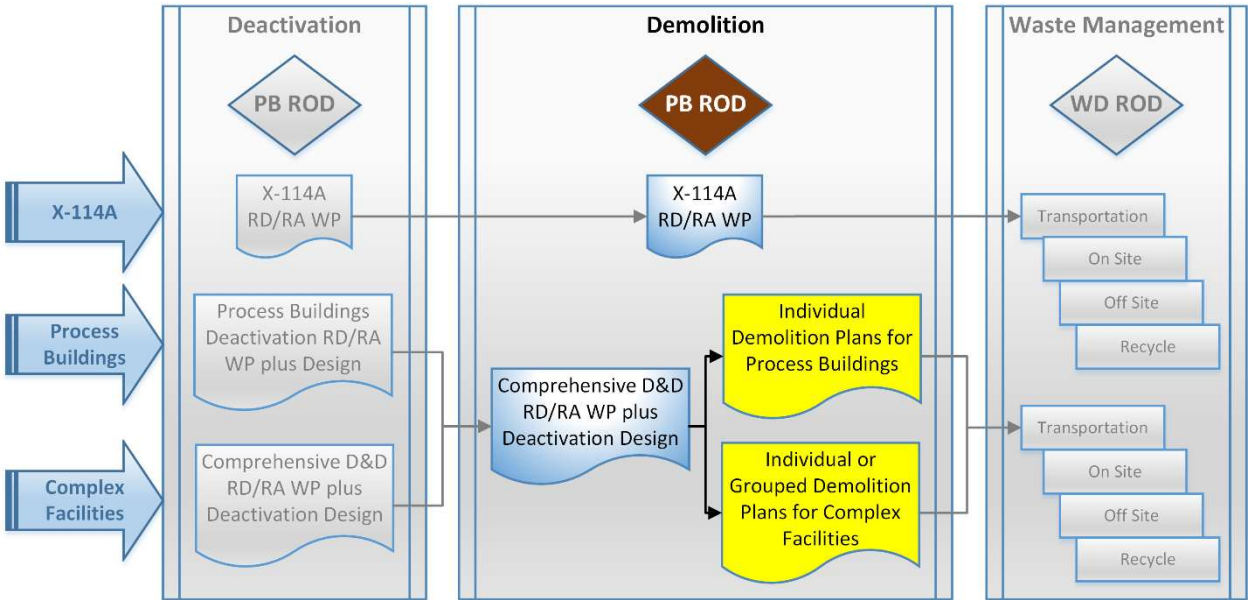

Figure 4. Demolition Remedial Action Addressed Under Two RD/RA Work Plans

1.3.3 Waste Management

Waste management activities occur throughout the implementation of deactivation, demolition, and site restoration. These activities are conducted under the authority of the Waste Disposition ROD and are discussed in more detail in Section 4.3.

Waste from activities conducted under this work plan that meets the requirements for disposal at the OSWDF will typically be managed on site until disposal. Wastes that do not meet the OSWDF WAC will be dispositioned off site, which may also include completion of waste treatment to meet regulatory or license requirements for disposal. Waste destined for disposal at the OSWDF may also be treated to meet WAC; however, because there are limited waste treatment options available at the PORTS site, off-site treatment would be more common and return for on-site disposal would be less likely to occur (although the option is available).

Waste will be packaged to the extent necessary for follow-on management activities. Wastes destined for off-site disposition will be packaged in compliance with regulatory requirements,

including transportation requirements. Waste for on-site disposal will be managed according to ARARs and packaged as necessary for on-site transport (which may include the use of the conveyance as packaging, as applicable, such as for bulk management and transport of demolition debris). Wastes awaiting disposition activities will be stored or staged in compliance with ARARs.

Waste transportation is performed in support of waste disposition, whether to off-site facilities or to on-site disposal. Off-site transportation and disposition is conducted in compliance with all applicable regulations and DOE requirements. On-site transportation will comply with ARARs.

Recycling of materials that are no longer useful in their existing form supports resource conservation, waste and cost avoidance, and reduction of industrial injuries and fatalities. Recycling opportunities are evaluated and pursued by DOE based on their merits and costs. Materials and equipment not encumbered by radiological release restrictions may be removed for this purpose, although opportunities for recycling of radiologically contaminated valuable metals are also considered under the Process Buildings ROD. Note that some recycling activities occur outside of the authority of this work plan under a pre-D&D agreement with Ohio EPA (Ohio EPA 2017). Throughout the work plan where recycling is a part of the potential disposition alternatives for a material, recycling of radiologically unencumbered materials may occur under the pre-D&D agreement (see Sections 4.2.2.5 and 4.3.2).

Figure 5 highlights the waste management portion of the remedial actions common to all deactivation and demolition actions.

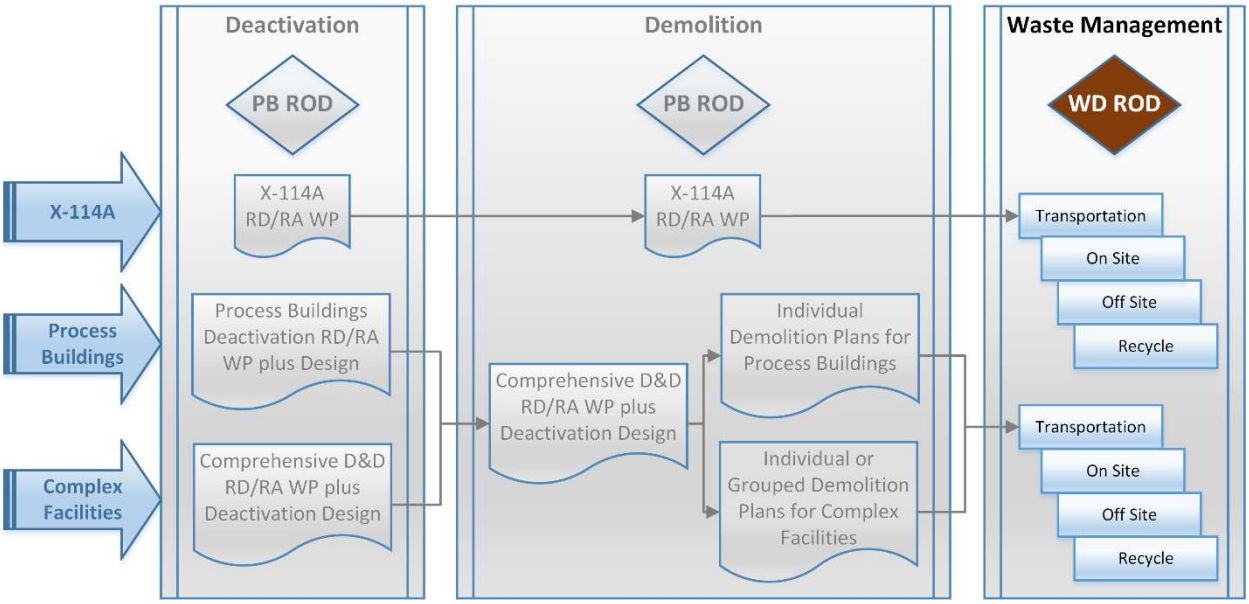

Figure 5. Waste Management, Transportation, and Recycling

1.3.4 Integration with Other PORTS Projects

Demolition sequencing and project grouping of structures will be driven by such variables as funding, physical proximity or relationships between buildings and structures, plans for soil remediation in the vicinity, utility system configurations, as well as many other considerations. Significant infrastructure investment is necessary in support of demolition actions, including construction of the early phases of the OSWDF, development of impacted water treatment capabilities, construction or designation of

haul routes (which may include an IMTA Haul Road and/or rely on utilization of site rail infrastructure, or both), and construction of impacted water management piping systems. Therefore, coordination among these projects will influence the schedules and sequencing of the early demolition projects, while coordination of demolition with soil generating actions will influence the schedules and sequences for the later demolition projects. Because of the anticipated duration of the overall remedial action and the size of the site and demolition actions, support buildings and structures may be reconfigured over the course of the action to coincide with program needs, including siting, sizing, capability, etc.

Other site projects will also affect scheduling of specific deactivation and demolition activities. For example, remaining DFF&O Attachment G structures to be removed under the RAWP process (i.e., addressed under existing Action Memoranda), are often in close proximity with DFF&O Attachment H structures and their removal could be coordinated to optimize the use of limited site resources.

DOE is developing a general deactivation RAWP to address deactivation of Attachment G buildings and structures following the same deactivation design methods identified in this work plan for Attachment H buildings and structures. This will allow seamless implementation of site-wide deactivation work regardless of whether the work is accomplished under the ROD or under Action Memoranda.

DOE intends to prepare multiple RAWPs for demolition of Attachment G buildings and structures using processes comparable to those to be identified in demolition plans to be submitted for Attachment H buildings and structures under this work plan.

The desired sequence for soil remediation projects may also influence the timing for demolition of structures and could offer other opportunities to integrate field activities.

Following deactivation and demolition field activities, any temporary buildings/structures installed to support these projects will be removed as part of project demobilization, unless they are being temporarily retained to support other future deactivation or demolition activities. Disturbed areas will undergo site restoration. Final site restoration actions will generally follow once demolition, including slab/foundation removal (as applicable), is complete in an area, so that overall areas can be contoured and seeded to long-term designs for stormwater management and drainage. Localized site restoration, focusing on limited grading, seeding of disturbed areas (as needed), or other restorative actions, will be performed as necessary following discrete project actions, such as following above-grade demolition, in the event that at- and below-grade demolition will occur at a later time.

1.4 SCOPE AND CONTENT OF THE WORK PLAN

This Comprehensive Process Buildings RD/RA Work Plan describes the process for completing the remedy established in the Process Buildings ROD, including deactivation, demolition, and waste disposition of all the DFF&O Attachment H buildings and structures.

The design for the deactivation remedial action (Section 4.2) describes the role that deactivation activities play in preparing buildings, structures, and infrastructure for safe demolition and also highlights how routine support activities during the deactivation remedial activities continue to maintain the buildings and structures pending demolition. Deactivation activities are focused to achieve preestablished criteria in each building or structure to create a standardized base set of conditions for follow-on demolition actions. The deactivation and waste disposition designs included in Sections 4.2 and 4.3 address the

full breadth of deactivation activities and the material and waste transportation and disposition activities necessary to implement the combined remedy.

The Process Buildings ROD identifies nine remedial action work categories to be conducted for the Process Buildings Project (see Section 12.2.1 of the Process Buildings ROD). Seven of the nine work categories described in the ROD are included in the deactivation and waste disposition designs included in Sections 4.2 and 4.3. The remedial design for PGE Removal was addressed in the Process Buildings Deactivation RD/RA Work Plan. The remedial design for demolition will be addressed in future project-specific demolition plans for individual buildings/structures, or groups of buildings/structures, as described in Section 3.2.2. Site restoration and demobilization activities will be conducted following both deactivation and demolition work, as necessary. Site restoration and demobilization activities conducted during deactivation are addressed in Section 4.2. Site restoration and demobilization activities to be conducted during demolition will be included in subsequent demolition plans.

Table 1 presents the list of the deactivation and waste disposition design activities included in Section 4, the corresponding ROD work category, and the subsection in which the deactivation designs are presented in this work plan. Waste packaging, a work category from the Process Buildings ROD, has been included in the overall work category group identified as Waste and Materials Disposition and Transportation, work categories addressed by the Waste Disposition ROD.

Table 1. Deactivation and Waste Disposition Activities

Record of Decision Work Category	Activity	Work Plan Section[a]
DOE Access Controls and Surveillance, Preventative Maintenance, and Housekeeping	DOE access controls	4.2.1.1
	Badging and escort requirements	4.2.1.2
	Surveillance, preventative maintenance, and housekeeping	4.2.1.3
Mobilization and Site Preparation	Preparation of work area/staging/laydown areas	4.2.2.1
	Temporary support building/structure installation	4.2.2.2
	Operations relocation	4.2.2.3
	Refurbishment/modifications	4.2.2.4
	Material and equipment removal for reuse/recycle	4.2.2.5
Characterization and Data Collection	Chemical-based characterization for on-site disposal	4.2.3.1
	Activity-based characterization for on-site disposal	4.2.3.2
Hazard Abatement	Draining or removal of liquids, gases, and residues	4.2.4.1
	Universal waste	4.2.4.2
	PCB wastes	4.2.4.3
	Asbestos-containing materials	4.2.4.4
	Removal of segregatable RCRA hazardous wastes and electronic waste	4.2.4.5
	Pressurized gas cylinders	4.2.4.6
	Aerosol cans	4.2.4.7
	Smoke detectors	4.2.4.8
	Actions to reduce worker hazards	4.2.4.9
Utility and System Deactivation	Utility disconnects	4.2.5.1
	Underground storage tank draining and deactivation	4.2.5.2
Site Restoration and Demobilization	Site restoration	4.2.6.1
	Demobilization	4.2.6.2

Table 1. Deactivation and Waste Disposition Activities (Continued)

Record of Decision Work Category	Activity	Work Plan Section[a]
Waste and Materials Disposition and Transportation	Waste Packaging	4.3.1
	Recycling/Reuse	4.3.2
	Material or Waste Staging and Storage	4.3.3
	Waste Certification/Verification	4.3.4
	Waste and Materials Transportation	4.3.5
	Treatment (Waste Preparation for Disposition)	4.3.6
	On-site Waste Disposal	4.3.7
	Off-site Disposition	4.3.8

Note:
[a]The remedial design for each work category is provided in the work plan subsection listed.

DOE = U.S. Department of Energy
PCB = polychlorinated biphenyl
RCRA = Resource Conservation and Recovery Act of 1976, as amended

This Comprehensive Process Buildings RD/RA Work Plan is organized as follows:

- Section 1 provides the introduction, purpose, scope and content of the work plan and design.
- Section 2 addresses where the work will be performed and highlights where existing information about the buildings and structures is located, such as the results of previous investigations and the types of contaminants that may be encountered.
- Section 3 provides the scope of the remedial action, as well as the DFF&O documentation strategy.
- Section 4 addresses deactivation of the site buildings and structures by providing the design and construction information required in the DFF&O Attachment B, Tasks III and IV.
- Section 5 addresses the waste management and transportation activities applicable to this scope of work.
- Section 6 provides the support plans or reference to program-wide support plans.
- Section 7 provides the project organization, cost, and schedule information.
- Section 8 discusses the reporting requirements, in compliance with the DFF&O Attachment B, Task VII.
- Section 9 provides the references used by this work plan.
- Appendix A includes the ARARs from the Process Buildings ROD and the subset of ARARs from the Waste Disposition ROD that provide requirements affecting packaging, transportation, and handling activities associated with the materials and waste from the process buildings and complex buildings/structures, and briefly describes the compliance approach for each during deactivation activities, as applicable.

- Appendix B provides a table identifying the requirements of the OSWDF WAC Components 1A and 1B, as well as a table listing waste identified in the CAMU Supplement to the Waste Disposition RI/FS for off-site disposal. These tables also provide a crosswalk to the sections of this work plan that address the actions taken for the waste streams identified.

- Appendix C provides the manufacturer's information for a typical bulb and lamp crusher unit that may be used for the management of lamps and bulbs from radiological buildings or structures.

- Appendix D provides a summary description of the grouting process that may be used for some hazardous wastes.

2. REMEDIAL ACTION PROJECT AREA DESCRIPTION

This section identifies the location of information about the buildings, structures, and/or infrastructure addressed by this work plan, information about their operational histories, and chemicals of potential concern (COPCs) that may be encountered.

2.1 SUMMARY OF PREVIOUS INVESTIGATIONS AND ACTIONS

2.1.1 Cultural Resources

As identified in the Process Buildings ROD, an architectural survey of PORTS was performed in 1996 and 1997. During this survey, 196 architectural properties were identified at 160 PORTS locations, consisting of various buildings and structures, all of which are within the scope of the Process Buildings ROD. Based upon their relationship with the historic Cold War mission of PORTS, 33 of the 196 PORTS buildings are considered historic properties. These resources are directly related to the PORTS Cold War mission, namely the enrichment of uranium to the highest levels using the gaseous diffusion process. These resources may be termed historic properties and thereby are eligible for inclusion in the National Register of Historic Places. For this reason, they meet the National Register Criteria for Evaluation (36 *Code of Federal Regulations [CFR]* Part 60.4), criterion A, due to their association with events (the Cold War) that have made a significant contribution to the broad patterns of our history.

The architectural inventory report documenting the results of the survey (*National Historic Preservation Act Section 110 Survey of Architectural Properties at the Portsmouth Gaseous Diffusion Plant in Scioto and Seal Townships, Piketon, Ohio*) (DOE 2011a) was accepted in March 2011 by the Ohio Historic Preservation Office.

The ROD identifies mitigation activities to be implemented to address impacts to these buildings as a result of implementing the selected remedy (see Process Buildings ROD, Section 13.2.2). Planned and current cultural resource impact mitigation activities are discussed in Section 6.1.2 of this Comprehensive Process Buildings RD/RA Work Plan.

As acknowledged in the Process Buildings ROD, a series of archaeological surveys was conducted between 1996 and 2012 to identify archaeological resources located within the PORTS boundary. Based on the results of those surveys, it has been determined that all of the area within Perimeter Road was significantly disturbed during plant construction. Therefore, deactivation and demolition work taking place inside Perimeter Road will have no impact on archaeological resources.

2.1.2 Wetland Studies

The *Remedial Investigation and Feasibility Study Report for the Process Buildings and Complex Facilities D&D Evaluation Project at the Portsmouth Gaseous Diffusion Plant* (DOE 2014b) (Process Buildings RI/FS Report) and subsequent studies have estimated that approximately 3 acres of wetlands will potentially be impacted by the implementation of the remedial actions identified. Wetland locations are included on Figure 2. Avoidance, minimization, and mitigation of direct and indirect wetland impacts pursuant to the Process Buildings ROD are presented in Section 6.1.3.5.

2.1.3 Completed and Ongoing Process Buildings Remedial Design/Remedial Action Activities

Section 1 provides a discussion on deactivation activities currently being conducted in the three process buildings and closely associated structures under the Process Buildings Deactivation RD/RA Work Plan. Completed deactivation, demolition, and waste disposition activities under the X-114A Outdoor Firing Range RD/RA Work Plan are also identified. As deactivation of the process buildings progresses,

DFF&O Quarterly Progress Reports will document the efforts and provide additional information about these projects.

2.1.4 Previous Characterization of Buildings and Structures

A wide variety of previous sampling and analysis activities have occurred in PORTS buildings and structures that contribute to the body of knowledge available for characterization of buildings, structures, and equipment therein.

To date, more than three dozen PORTS buildings and structures have been deactivated and demolished using an approach similar to the one identified in this work plan, including a deactivation phase prior to demolition focused on removal of hazards, energy sources, and specific hazardous materials/wastes. As presented in Section 2 of the Process Buildings RI/FS Report, buildings and structures demolished prior to the report ranged in complexity from simple warehouses and sheds having no contamination to complex buildings/structures that were heavily contaminated with radionuclides, hazardous chemicals, and polychlorinated biphenyls (PCBs). Volatile organic compounds, semivolatile organic compounds, heavy metals, corrosives, and biological hazards were present in some of the buildings and structures. Samples were collected from these buildings and structures to support waste characterization prior to disposition. Sample results were presented in Table 2.1 of the Process Buildings RI/FS Report, indicating a range of concentration for each constituent and the buildings that represented the minimum and maximum values for the constituent.

The deactivation approach identified for the Attachment H buildings and structures addressed by this work plan corresponds with the approach used in the previous PORTS projects, where removal of specific hazardous materials from the buildings and structures resulted in demolition waste that did not require management as hazardous under the Resource Conservation and Recovery Act of 1976, as amended (RCRA). Some of the building demolition waste was required to be managed under the Toxic Substances Control Act of 1976 (TSCA) based on the presence of PCBs.

The Process Building RI/FS Report also summarized beryllium surface contamination data from 12 buildings reported in *Beryllium Surface Contamination, Initial Characterization* (United States Enrichment Corporation 2004). Buildings were identified initially based on the presence of beryllium in some process equipment and maintenance buildings/structures. Locations with higher concentrations were identified and posted for worker protection and continued monitoring.

Technetium introduced to the enrichment process in trace quantities due to recycling of uranium from reactors was reported in *Technetium Characterization of the Diffusion Cascade at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (Theta Pro2Serve Management Company, LLC [TPMC] 2006a) and summarized in the Process Buildings RI/FS Report. Mass balance evaluations were presented as well as specific data from equipment samples. The majority of transuranic constituents and technetium-99 were removed from the enrichment process when large amounts of PGE were changed out in a fiscal year (FY) 1957 to FY 1962 program and a later program from FY 1973 to FY 1983.

The Process Buildings RI/FS Report also summarized the *Facility Condition Survey of the Portsmouth Gaseous Diffusion Plant Facilities, Piketon, Ohio* (TPMC 2006b). The facility condition survey was prepared to describe the current condition of many major PORTS structures with respect to the physical, radiological, and chemical hazards important to D&D planning. Ninety-two individual buildings/structures were evaluated under this survey.

Results from additional sampling activities conducted for PGE are discussed in Section 2.1.6.

Building and structure documentation (such as that included in the Process Buildings RI/FS Report), operator knowledge, and sampling and screening results from previously completed PORTS building demolition actions contains information that could provide a portion of the information ultimately necessary to characterize the materials of construction of the PORTS buildings and the building components. As discussed further in Section 4.2.3.1, these information sources will be used to support characterization of the deactivation and demolition wastes from the buildings, consistent with the approach outlined in the CAMU Supplement to the Waste Disposition RI/FS.

Although existing data may support characterization of the buildings and structures for disposition at the OSWDF, additional sampling or field characterization activities may be required. Additional data gathering activities are also anticipated as necessary in support of worker health and safety, off-site disposition and transportation requirements, and for demonstration of compliance with ARARs. Characterization activities are further discussed in Section 4.2.3.

2.1.5 Pre-D&D Activities

Pre-D&D actions underway pursuant to the DFF&O include activities such as infrastructure modifications, draining liquids, hazard abatement, asbestos removal, work area improvements, and utility reconfigurations (including installation). In accordance with the description of the selected remedy in the Process Buildings ROD, activities being conducted at PORTS that fall under the scope of this work plan and that were initiated as pre-D&D activities will fall under the authority of this work plan upon Ohio EPA concurrence (with the exception of radiologically unencumbered recycling actions discussed in Section 4.2.2.5 that will continue as pre-D&D).

Under the Process Buildings Deactivation RD/RA Work Plan currently being implemented at PORTS, work activities that had been performed as pre-D&D in the three large process buildings are now being performed as deactivation activities under the authority of the work plan; therefore, a portion of the pre-D&D activities have already been transitioned.

2.1.6 Phase 1 Process Gas Equipment Sampling and Analysis Plan

Characterization of the PGE waste stream being generated from the three large process buildings was performed in accordance with the Process Equipment Characterization Sampling and Analysis Plan (SAP) (DOE 2011b) and the results were presented in Appendix A of the Waste Disposition RI/FS (DOE 2014c). Additional sampling, including collection of intrusive and nonintrusive samples and measurements and extensive nondestructive assay (NDA) characterization of equipment containing radiological constituents, was conducted under a revision to the Process Equipment Characterization SAP, *Phase 1 Sampling and Analysis Plan for the Process Equipment Characterization in Support of the Site-wide Waste Disposition Evaluation Project at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, (DOE 2015c) (Phase 1 PGE SAP), and that data was used in the Process Buildings Deactivation RD/RA Work Plan to support characterization and disposition of components of the process gas system. Sample and data management activities conform to the *Sample Analysis Data Quality Assurance Project Plan (SADQ) at the Portsmouth Gaseous Diffusion Plan, Piketon, Ohio* (SADQ) (DOE 2014d), the overarching framework document to ensure that standardized and consistent processes are utilized to obtain samples, perform data collection, and perform laboratory services.

2.2 REMEDIAL ACTION PROJECT LOCATION

The locations of the buildings, structures, and/or infrastructure addressed in this scope are identified in Figure 2 (excluding those located outside of the contiguous DOE property). For clarity, systems and utilities included in this work scope are intentionally excluded from the figure. A large-size format of Figure 2 that includes building and structure identification numbers is provided at the end of the

document, showing the buildings and structures located on the contiguous DOE property at PORTS, with the exception of utilities, systems and underground structures, and off-site water supply wells and air monitoring stations. The figure differentiates the three large process buildings (and their associated tie lines and security portals), X-114A, XT-800, and X-744V from the other buildings and structures to highlight that these buildings and structures have been addressed in other work plans, either in part or in total. Other buildings and structures at the site that are outside of the scope of this RD/RA work plan are not specifically identified.

Although not being constructed under the scope of this work plan, the locations of the OSWDF, the planned IMTA, and an IMTA Haul Road are shown on Figure 2, because they are important components of the overall remedial action for disposition of waste materials, including impacted water, generated by remedial actions under this work plan. See Section 1.2 for additional discussion.

2.3 PROJECT AREA DESCRIPTION AND OPERATIONAL HISTORY

The buildings, structures, and infrastructure included under the scope of this work plan are described in detail in the Process Buildings RI/FS Report. An overall site operational history is provided in Section 1.2.2 of the Report; building descriptions are provided in Sections 4.1.2 through 4.1.4 of the Report; and operational information for the buildings and structures addressed under this work plan, including photographs, is provided in Appendix A of the Report.

2.4 CHEMICALS OF POTENTIAL CONCERN

The Process Buildings RI/FS Report identifies the known or potential radiological and chemical hazards and contaminants, as well as the known releases of contaminants, associated with the buildings and structures addressed in this work plan (in the Process Buildings RI/FS Report, see Table 5.1, Section 4, and Appendix A for a more comprehensive discussion on COPCs). The Process Buildings Deactivation RD/RA Work Plan identified COPCs anticipated in the three large process buildings based on information from the RI/FS. Additional sampling under the Phase 1 PGE SAP produced results consistent with the RI/FS information.

Contaminants identified in the Process Buildings Deactivation RD/RA Work Plan are present in other buildings and structures at PORTS. Asbestos is found widely in site buildings and structures, including utility system piping and other thermal insulation applications, in materials of construction in many of the buildings (e.g., siding, caulking, and floor tile), and in general materials applications (e.g., wiring, gaskets, mastic, motor brakes, and packings). PCBs were used in electrical equipment (e.g., capacitors), and PCBs occur in a wide variety of building materials and coatings (e.g., paint, caulk, gaskets, and wiring insulation); concrete and equipment may be contaminated with PCBs from historical spills and leaks. PCBs may also be present in fluorescent light fixture ballasts, and paints may contain lead. Fluorescent light tubes may contain hazardous levels of mercury.

Other contaminants that are commonly present in site buildings and structures include the following: heavy metals, such as lead and silver, used in solder and other applications like light bulbs and batteries; cadmium and other metals from alloys; mercury, used in switches and light bulbs; and trichloroethene (TCE) and other solvents. A variety of refrigerants and coolants (including Freon) were used for equipment and building cooling.

Radionuclide contaminants may be encountered in most of the PORTS buildings and structures. They are especially anticipated in buildings and structures that were directly involved in enrichment, maintenance of enrichment equipment, handling of wastes and effluents from the enrichment process, or other processing activities with uranium compounds; however, they may also be encountered in

locations not directly involved with operations with radionuclides. As identified in the Process Buildings ROD, uranium-234, uranium-235, uranium-238, and technetium-99 are the primary contaminants associated with enrichment. Contaminants present in the uranium feed materials due to recycling uranium from DOE's reactor sites are known to include measureable trace concentrations of transuranic radionuclides (including neptunium-237 and plutonium-239). Fission radionuclides and decay progeny would also be present.

As discussed in the Process Buildings RI/FS Report, hazardous materials associated with buildings and structures also depend on their former functions, the materials of construction, and the specific equipment associated with each structure. The list below identifies some of the examples of contaminants and hazards associated with specific PORTS buildings and structures that were presented in the Process Buildings RI/FS Report:

- X-700, X-710, and X-720 have been specifically identified as having removable beryllium contamination.

- The X-705E Oxide Conversion area is posted as a contamination control zone and is sealed because of potential or suspected contamination from transuranic isotopes remaining in the residual tower ash within the equipment.

- Lead shielding is used in some electrical cables, and in locations that stored radioactive sources, such as the X-721 Radiation Instrument Calibration.

- The X-710 laboratory performed a wide variety of operations that used strong acids and bases, solvents, comparison standards, beryllium and other metals, and PCBs.

- The water treatment plant (X-611) uses lime and chlorine.

- Biological agents (e.g., *Escherichia coli*) are contaminants associated with the sewage treatment plant.

- Fluorine and hydrogen fluoride were identified as contaminants for the Feed, Sampling, and Transfer Buildings (X-342A, X-342B, X-344A), as well as some of the Primary Laboratory, Maintenance, and Equipment Cleaning Buildings (X-700, X-700A, X-705, X-705D, X-705E, X-710, X-720).

Building-specific deactivation activities will be planned and implemented based on the wide range of information already available, such as detailed RI/FS information, generator knowledge about the activities performed in the buildings, data collected under worker protection programs, and information from visual inspections. This information will be augmented with additional samples and field measurements, as necessary, to meet data needs. Additional characterization information that is generated during deactivation actions, including data collected for worker safety and project compliance, will be available for use during demolition, as needed.

Section 4.2 of this work plan, PORTS Complex Facilities Deactivation Activities Design, provides implementation strategies and processes to safely and compliantly manage the materials, hazards, and uncertainties found in the remaining PORTS buildings and structures through deactivation, including the removal or management of many of the COPCs identified above. For example, Freon coolants are currently anticipated to be recycled under pre-D&D recycling efforts identified in Section 4.2.2.5.

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3. REMEDIAL ACTION PROJECT SCOPE AND OBJECTIVES

The remedial action scope and objectives for the deactivation, demolition, site restoration, and waste management and transport activities necessary to complete the removal and disposition of the PORTS buildings, structures, and infrastructure are summarized below. Additionally, the strategy for providing DFF&O-compliant documentation and communication with Ohio EPA for the DFF&O Attachment B, Generic Statement of Work (SOW) for Remedial Design and Remedial Action, Tasks I through VII, is provided in this section.

3.1 REMEDIAL ACTION SCOPE

Work under this Comprehensive Process Buildings RD/RA Work Plan is being implemented under three main categories of remedial action:

- Deactivation
- Demolition
- Waste management.

Some work categories, such as mobilization, demobilization, and site restoration, provide support to each of the three main categories of remedial action.

The deactivation remedial action for the PORTS complex buildings/structures will prepare each building or structure for demolition and on-site disposal of the waste from demolition. Section 4.2 provides the prefinal deactivation design that describes in detail the deactivation activities which will be conducted to achieve standardized demolition readiness criteria, also presented in that section. These actions will also ensure buildings and structures are maintained in safe condition until demolition occurs.

Demolition, the second remedial action to be completed for each building or structure (or group of buildings), will be implemented under project-specific demolition plans to be developed and submitted for review and concurrence as projects are planned. Demolition activities can be performed for a building or structure once the standardized demolition readiness criteria are met for that building or structure (see Section 4.2) and the demolition design receives Ohio EPA concurrence. Demolition involves the entire removal of all structure components and can be implemented as a single project activity, or can be conducted in a phased approach. The phased approach would remove above-grade structures in a first phase, followed by a separate removal of the at- and below-grade structures at a later date. The scope of the individual project-specific demolition plans will depend upon project needs, funding, OSWDF operations, or other DOE criteria and may include groupings of structures.

Waste management activities occur throughout the implementation of deactivation and demolition and site restoration. Section 4.3 addresses waste and materials packaging, storage, waste certification, transportation, and disposition activities. Characterization of wastes is addressed in Section 4.2.3.

Waste generated from activities conducted under this work plan will be managed in ARAR-compliant storage on site until disposal can be accomplished. Wastes being removed from the buildings to allow remaining building/structure contents to meet the OSWDF WAC upon demolition will be dispositioned off site. Waste disposition activities may also include completion of waste treatment to meet regulatory or license requirements for disposal and may include reuse or recycling of materials that are no longer useful in their existing form. Waste disposition activities are conducted under the authority of the Waste Disposition ROD. On-site and off-site transportation occurs in support of waste disposition.

3.1.1 ROD Summary and Performance Standards

The Process Buildings ROD presents the selected remedy for the Process Buildings Project. The Process Buildings ROD provides a decision on the fate of the buildings, structures, and infrastructure that are listed in Attachment H of the DFF&O. The Waste Disposition ROD provides a waste disposition remedy for waste generated under other DFF&O projects (such as the Process Buildings Project) and provides for on-site disposal with an off-site disposal component, and includes treatment and transportation. Both RODs support evaluation of recycling options for materials resulting from demolition. Section 4.2.2.5 and Section 4.3.2 address reuse and recycling options.

This Comprehensive Process Buildings RD/RA Work Plan implements the elements of the remedy contained in the Process Buildings ROD (with the exclusions noted in Section 3.1). It also addresses the disposition of waste under the Waste Disposition ROD, except for those elements contained in the Comprehensive OSWDF RD/RA Work Plan. The performance standards to be met by this work are provided by the Waste Disposition ROD and Process Buildings ROD (see Section 13.2, Compliance with ARARs, and Appendix A in each ROD). The ARARs/to-be-considered guidance (TBCs) listed in Appendix A of this work plan are those ARARs from the final ARAR lists presented in the Waste Disposition ROD and the Process Buildings ROD. WAC of the on-site and off-site disposal facilities receiving deactivation and demolition waste are also performance criteria that must be met in the implementation of this remedy.

3.1.2 Access Agreements

Prior to beginning remediation efforts, guidance for conducting remedial actions specifies that all agreements necessary to gain access to the area of remediation are needed. At PORTS, no access agreements with other entities are needed for deactivation and demolition activities for buildings and structures on the PORTS property. Although DOE owns the PORTS property, a few of the structures addressed by the Process Buildings ROD (e.g., raw water supply wells, well houses, associated pipelines, and air monitoring stations) are located on property external to the DOE-owned PORTS. DOE will ensure that any necessary access agreements are in place before remedial actions are initiated for these structures.

3.1.3 Post-ROD Scope Changes

To date, there have been no post-ROD changes to the scope of the actions documented in the Process Buildings ROD or Waste Disposition ROD. A minor addition to the Waste Disposition ROD was made to include ARARs associated with the Endangered Species Act, which had been omitted. There have also been several minor additions and clarifications to the Process Buildings ROD:

- ARARs associated with removing underground storage tanks (USTs) from service and permanent removal of USTs have been added to the Process Buildings ROD to support deactivation and demolition activities originally identified in the ROD (DOE 2017b).

- ARARs only in the Waste Disposition ROD that also address activities that support the remedy components of the Process Buildings ROD have been added to the Process Buildings ROD (DOE 2017b).

- A clarification was documented for some recycling activities that will continue to be performed as pre-D&D activities under agreement with Ohio EPA (DOE 2017c).

3.2 DOCUMENTATION STRATEGY

Each RD/RA work plan under the DFF&O consists of seven principal tasks. Each task is to be completed and required documentation submitted in accordance with any approved Milestones and schedules established in the DFF&O or in an RD/RA work plan concurred with or approved by, as applicable, Ohio EPA. This work plan provides the necessary elements of the RD/RA work plan, as identified in the DFF&O Attachment B SOW, or provides a plan for the delivery of the required elements not already included in the work plan. The seven tasks required by the DFF&O Attachment B SOW are as follows:

- Task I: RD/RA work plan
- Task II: Predesign studies
- Task III: Remedial design
- Task IV: Remedial action construction
- Task V: Five-year reviews
- Task VI: Operations and maintenance (O&M)/performance monitoring
- Task VII: Reporting requirements.

This work plan (Task I) is comprehensive for the work scopes discussed in detail in Section 1.4.

Predesign studies (Task II) are not required for the scope of work identified in this work plan; therefore, Task II is not applicable. If a predesign study is required in support of future deactivation (such as if a treatability study is determined necessary in support of the remedy), it will be identified in a future design submittal associated with implementation of this work scope, as applicable, and a specific predesign study plan will be submitted for Ohio EPA review and concurrence.

Section 1.6 of the Process Buildings ROD states "The RD/RA Statement of Work (Task V) in the DFF&O requires that five-year reviews be conducted on any remedial action that has been initiated; however, the DFF&O does not require five-year reviews on individual buildings, facilities, structures, etc., where D&D actions have not been initiated, or for buildings, facilities, structures, etc., that have been totally removed through a D&D action."

Work under the Process Buildings ROD is divided among multiple RD/RA work plans and a number of projects that will accomplish deactivation and demolition actions. DOE has elected to prepare a single consolidated Five-year Review reflecting all ongoing work under the Process Buildings ROD, rather than report only on activities that were initiated but not completed during a 5-year window. Therefore, the Five-year Review for work under the Process Buildings ROD would follow on the fifth anniversary of initial work performed under the Process Buildings ROD. The initial work performed under the Process Buildings ROD occurred May 9, 2016, with the initiation of deactivation activities at the X-114A Outdoor Firing Range. However, the work performed under the Process Buildings ROD, that is applicable to the Five-year Review, occurred on February 24, 2021, with the removal of the exterior transite panels of the X-326 Process Building, initiating the demolition of the building. Per the DFF&O, DOE will plan to meet with Ohio EPA to discuss the requirements of the Five-year Review before November 9, 2024, which is 15 months prior to the review due date of February 24, 2026.

Tasks III, IV, VI, and VII from the DFF&O Attachment B SOW are addressed separately for deactivation of the complex buildings/structures and for demolition and site restoration in the following subsections.

3.2.1 Documentation Strategy for Deactivation of the PORTS Complex Buildings/Structures

Section 4.2 of this work plan provides a prefinal design for the deactivation activities required for the PORTS complex buildings/structures. Section 4.3 includes a prefinal design for the disposition of materials and waste during deactivation remedial activities. The work descriptions in Sections 4.2 and 4.3 are the Task III remedial action design plans for deactivation and waste disposition, respectively. As described in Section 3.3.2.3 of the DFF&O Attachment B, the prefinal designs contained in this work plan will become final upon incorporation of Ohio EPA's comments or receipt of Ohio EPA's concurrence.

Per Section 3.3.1 of the DFF&O Attachment B, actions such as removal of buildings or structures constitute the construction phase of the remedy under the Process Buildings ROD; however, deactivation activities are not considered construction. Therefore, the Task IV requirement (Section 3.4.1 of the DFF&O Attachment B) for a preconstruction inspection and conference between DOE and Ohio EPA would not apply to deactivation. Additionally, prefinal construction inspections and conferences specified in Section 3.4.3 of the DFF&O Attachment B are not applicable to the deactivation activities addressed by this work plan. However, upon request, DOE will conduct walkthroughs of buildings with Ohio EPA, before the utilities have been shut off to the buildings, to address any prefinal inspection requested by Ohio EPA.

Pre-D&D actions, which have been previously approved by Ohio EPA, are currently underway in the field. Activities previously addressed as pre-D&D actions, but now addressed under the scopes identified in this work plan, will be executed as deactivation under this Comprehensive Process Buildings RD/RA Work Plan upon concurrence by Ohio EPA. Limited recycling activities being performed as pre-D&D will continue as pre-D&D.

The status of the remedy will be reported routinely to Ohio EPA via the DFF&O Quarterly Progress Report as discussed in Section 8. However, since PORTS has ongoing regulatory compliance and reporting programs for existing permitted activities, those reporting programs will continue to be used while the permits remain in force. For example, if National Pollutant Discharge Elimination System (NPDES) permit parameters are exceeded in wastewater during a reporting period, existing reporting mechanisms will be used.

Additionally, deactivation actions at the X-700 (including X-700A), X-705 (including X-705D and X-705E), X-710, and X-720 (representing the more chemically and radiologically significant buildings to be deactivated under this work plan) will be summarized in a Field Work Completion Report (FWCR) prepared for each of the four building/structure groupings. This is consistent with the approach undertaken in the Process Buildings Deactivation RD/RA Work Plan for the three large process buildings (X-326, X-330, and X-333). In all, seven FWCRs for deactivation will be prepared and submitted for Ohio EPA review and concurrence, reflecting the seven original buildings/structures identified as Attachment H in the initial revision of the DFF&O. Deactivation activities for other buildings and structures will be reported in the respective FWCR following demolition actions and as progress updates in the DFF&O Quarterly Progress Report.

Any characterization needs known at the end of deactivation will be summarized and discussed with Ohio EPA, either in a deactivation FWCR (for the four more chemically and radiologically significant buildings to be deactivated under this work plan), or in another form of communication (for the remaining buildings that will not have a standalone deactivation FWCR).

No buildings or structures are contemplated being constructed under the deactivation design provided in this work plan that will be subject to long-term remedy O&M or performance standard verification monitoring.

Section 3.7.2 of the DFF&O Attachment B presents a list of required reports for an RD/RA scope of work, and indicates that the list of required reports will depend upon the scope of the remedial action. Table 2 in this work plan summarizes the specific required reports and submittals that are applicable for the PORTS complex buildings/structures deactivation activities conducted under this plan.

Table 2. List of Required DFF&O RD/RA Reports and Submittals Applicable to Deactivation

DFF&O Required Report	DFF&O Task No.	Notes
Draft and Final RD/RA Work Plan	I	Health and Safety Plan and Regulatory Compliance Plan, which are required components of the RD/RA work plan, are included in Section 6 of this work plan. Final RD/RA work plan to be submitted after resolution of Ohio EPA comments on the draft submittal.
Prefinal and Final Design	III	Applicable design information for deactivation and waste disposition work scopes is presented in Section 4 of this work plan. Health and Safety Plan elements are addressed in Section 6. Deactivation does not require an O&M plan, CQAPP, or PSVP.
Five-Year Reviews	V	To be provided as discussed in Section 3.2.
Quarterly Progress Reports during RD/RA	VII	To be provided as discussed in Section 8.
Field Work Completion Report	IV, VII	To be prepared for four original Attachment H building/structure groupings addressed by this work plan (X-700/X-700A, X-705/X-705D/ X-705E, X-710, and X-720). Deactivation information will be included in demolition FWCRs for other buildings/structures (also see Milestones in Section 7.3.2).

CQAPP = Construction Quality Assurance Project Plan
DFF&O = *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*
FWCR = Field Work Completion Report
O&M = operation and maintenance
Ohio EPA = Ohio Environmental Protection Agency
PSVP = Performance Standard Verification Plan
RD/RA = remedial design/remedial action

Certain supporting design documents identified in Section 4 of the DFF&O Attachment B are not required for the deactivation scope of work. No Construction Quality Assurance Project Plan is required for the deactivation activities presented in this work plan; however, quality assurance (QA) and quality control (QC) processes necessary to the implementation of this remedial action are discussed in this work plan.

Where ARARs are identified as performance standards, the compliance approach for each is outlined in Appendix A. Compliance strategies for some ARARs result in monitoring and sampling activities that represent a quantitative verification process. The results of monitoring and sampling activities will be managed as required under the respective ARARs and data collection will conform to the requirements of the SADQ.

OSWDF WAC attainment processes are identified in the WAC Implementation Plan and will be implemented in the field via the Waste Acceptance Organization (WAO). The WAO is a work unit within the prime contractor's organization operationally independent from the contractor's project work units. WAC attainment for off-site disposition options is controlled via processes required by the respective disposition sites used by PORTS, such as the DOE Nevada National Security Site (NNSS), which requires a dedicated on-site independent waste certification official and authorized program overseen by the NNSS.

3.2.2 Documentation Strategy for Demolition

This work plan addresses the necessary activities to demolish the buildings and structures, including required site restoration. Future project-specific remedial design plans for demolition of structures and buildings, or groups of structures and buildings, will be submitted for Ohio EPA review and concurrence. These follow-on demolition plans will include all applicable elements of the Task III (Remedial Design) requirements identified in the DFF&O Attachment B, including compliance approaches for ARARs, since compliance approaches for some ARARs may differ from deactivation to demolition. Note that the ARARs in Appendix A include a compliance approach for each requirement to be met during implementation of the scope of activities covered under this work plan, where practical. In some cases, for ARARs that address only the demolition phase of work, it is better to allow demolition design to progress before a specific compliance approach for an ARAR is presented. In such cases, the ARARs in Appendix A identify that the demolition plan will provide the compliance approach.

Demolition plans will be prepared under this Comprehensive Process Buildings RD/RA Work Plan for the DFF&O Attachment H buildings/structures. Demolition plans will document the planned actions to safely and compliantly demolish a given building/structure or group of buildings/structures and will address their management throughout demolition and restoration activities, including:

- Preparatory actions for demolition (such as setting up project access points and controls, establishing project management buildings/structures, installing controls for managing impacted water and resulting solids, and completing waste stream designation and characterization)

- Demolition waste stream identification, waste quantity forecasting, characterization in compliance with the WAC Implementation Plan (including identification of any remaining characterization requirements necessary for completion during the demolition process), and identification of any remaining OSWDF-prohibited items to be removed from the D&D waste stream during demolition actions

- Demolition activities (such as providing methods and controls for demolition tasks, methods for control of airborne and waterborne emissions [e.g., through application of spray encapsulants, the construction of berms, and the use of other mitigating measures])

- When removal of building slabs and foundations is included, demolition plans will address soils to be removed incidental to the excavation of the building foundations, including any required characterization to ensure the exhumed soil and debris will meet the OSWDF WAC, including evaluation of collected data to determine whether the quantity and concentrations of an unexpected contaminant found across an investigation area exceeds the defined thresholds requiring its identification as a principal hazardous constituent (PHC).

- Interim management of debris for on-site disposal

- Packaging (if necessary) and safe loading of debris for transport to the OSWDF (such as methods to transport bulk or packaged materials and interaction with waste certification processes)

- Site restoration (such as demobilization activities and site contouring to the extent applicable).

Demolition plans may also include design submittals, such as wastewater treatment process designs or waste treatment process designs, as applicable. In addition to necessary design content, wastewater and waste treatment design submittals, where applicable, will also address activities necessary to manage waste streams resulting from treatment, including their characterization as new waste streams and evaluation under the CAMU Supplement to the Waste Disposition RI/FS, as applicable.

Per Section 3.3.1 of the DFF&O Attachment B, actions such as removal of buildings or structures constitute the construction phase of the remedy under the Process Buildings ROD. To address the requirements of Section 3.4.1 of the DFF&O Attachment B, preconstruction inspection and conferences will be conducted by DOE prior to commencement of demolition field activities for each of the seven major buildings (X-326, X-330, X-333, X-700/X-700A, X-705/X-705D/X-705E, X-710, and X-720). These seven major buildings had been included as Attachment H structures in the original version of the DFF&O (April 13, 2010). Preconstruction and inspection conferences prior to demolition field activities in other buildings and structures will be held when requested by Ohio EPA.

DFF&O Attachment B Section 3.4.3, *Remedial Action Construction Completion and Acceptance*, requirements include finalization of O&M plans, construction completion inspections, and conferences. Demolition activities will not typically result in O&M requirements nor require completion inspections, since the endpoint of demolition is the removal of the structures. Demolition leaves nothing behind to operate, maintain, or inspect. However, due to the scale of the planned demolition actions at PORTS, demolition of an individual building/structure may not occur immediately after deactivation has been completed in that building/structure. Demolition actions may also be split into multiple phases, such as above-grade structure removal followed later by at- and below-grade structure removal. Until the entire structure is removed by demolition, S&M activities for that structure, such as identified in Section 4.2.1.3, will continue to apply to the structure.

Demolition FWCRs will be submitted to Ohio EPA for review and concurrence. Demolition FWCRs will document the efforts taken to safely and compliantly demolish a building/structure or group of buildings/ structures, including management of generated wastes and collected water. The Demolition FWCRs will also document the efforts taken during demolition to segregate any remaining non-WAC-compliant materials from the demolition waste streams, provide a summary of the actions taken to comply with the requirements of the WAC Implementation Plan, summarize the quantity and types of waste generated through the demolition process, including the disposition, and a delineation of the final end state resulting from demolition (such as the status of remaining structures to demolish when demolition is conducted in multiple phases).

When at- and below-grade structures are left in place for additional demolition at a later time, the above-grade demolition design submittal will address the end state condition necessary to be protective during the period while the at- and below-grade structures await demolition (e.g., considering runoff management, contaminant controls, etc.), including any S&M requirements. The FWCR prepared for such projects will be sufficient to summarize the status and identify the necessary follow-on construction (demolition) activities for completion of removal of the structure(s). FWCRs prepared for demolition projects may be combined for submittal to match project definitions, such as when multiple structures

are demolished under a single project. Project-specific demolition plans will also define implementation of other Task IV requirements based on the scope of work to be performed.

The status of the remedy will be reported routinely to Ohio EPA via the DFF&O Quarterly Progress Report requirements as discussed in Section 8.

Section 3.7.2 of the DFF&O Attachment B presents a list of required reports for an RD/RA scope of work; required reports will depend upon the scope of the remedial action. Table 3 summarizes the applicable reports and submittals for demolition activities conducted under this plan.

Table 3. List of Required DFF&O RD/RA Reports and Submittals Applicable to Demolition

DFF&O Required Report	DFF&O Task No.	Notes
Draft and Final RD/RA Work Plan	I	Health and Safety Plan and Regulatory Compliance Plan, which are required components of the RD/RA work plan, are included in Section 6. Final RD/RA work plan to be submitted after resolution of Ohio EPA comments on the draft submittal.
Prefinal and Final Design	III	Project-specific remedial design documents for demolition activities will be submitted separately as individual buildings or groupings of buildings/structures. Construction quality elements will be included in demolition plans or design submittals, as applicable. O&M plans and PSVP are not required for the structure demolition actions, but will be submitted for a planned demolition wastewater treatment operation.
Quarterly Progress Reports during RD/RA	VII	To be provided as discussed in Section 8.
Preconstruction Inspection and Conference Report	IV	Preconstruction Inspection and Conference will be scheduled at least 10 days prior to initiation of field work or as agreed to by Ohio EPA.[a]
Five-Year Reviews	V	To be provided as discussed in Section 3.2.
Field Work Completion Report	VII	To be provided in accordance with the Milestones in Section 7.3.2 to document the conclusion of demolition field activities per project.
Remedial Action Completion Report	VI	To be provided to document completion of the Process Buildings ROD remedial action project.

Note:
[a]As applicable for the seven original Attachment H building complexes and any additional preconstruction inspection and conferences requested by Ohio EPA.

DFF&O = *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*
O&M = operation and maintenance
Ohio EPA = Ohio Environmental Protection Agency
PSVP = Performance Standard Verification Plan
RD/RA = remedial design/remedial action
ROD = Record of Decision

Demolition activities addressed by this Comprehensive Process Buildings RD/RA Work Plan are considered construction activities under the guidance of the DFF&O. Appropriate construction QA requirements will be incorporated into each project-specific demolition plan to ensure performance standards in the design are achieved.

A Performance Standard Verification Plan (PSVP) consolidates the elements of the work activities that provide assurance that both short-term and long-term performance standards are being met by the remedial action project. Demolition results in the removal of contaminated media addressed by the Process Buildings ROD, thereby eliminating the existing long-term potential risk from the PORTS structures. Short-term risks encountered during deactivation and demolition field activities require appropriate monitoring, data collection, and controls; however, existing PORTS worker protection programs and environmental compliance approaches (as described in this work plan) will continue to be used to achieve ARARs compliance and protect workers and the public. Therefore, a separate PSVP is not considered necessary for the overall demolition remedy activities.

An impacted water treatment process to support demolition is included in plans for near-term demolition projects. The design submitted for the process system will include PSVP elements to be implemented during the operations period of the equipment to ensure the collection of information necessary to control short-term risks from the operation in addition to assuring that the system provides adequate removal of the contaminants from the impacted waters. The design submittal will also include a SAP, construction QA requirements, and O&M requirements for the operation.

Section 3.6.2 under Task VI of the DFF&O Attachment B identifies the requirement for the Completion of Remedial Action Report. A Completion of Remedial Action Report will be submitted upon completion of all actions required under the Process Buildings ROD. The Completion of Remedial Action Report is the closeout of the implementation of the Process Buildings ROD remedy that identifies that all of the requirements of the ROD have been met. FWCRs and the final Completion of Remedial Action Report will address the topics identified in Section 3.6.2 of the DFF&O Attachment B, to the extent applicable, and will summarize the disposition of materials and waste, including WAC compliance for the wastes disposed at the OSWDF.

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4. REMEDIAL DESIGN/REMEDIAL ACTION FOR DEACTIVATION

This section provides the design and technical approach for completing the deactivation activities. Deactivation includes management and disposition of existing PORTS waste inventories and newly generated waste resulting from deactivation.

4.1 APPEARANCE/CONDITION OF PROJECT AREA

Uranium was enriched at PORTS until May 2001, at which time the production buildings/structures were placed into a cold-standby mode. During cold standby, the process buildings were maintained with a restart capability as a strategic hedge against a disruption in the nation's supply of enriched uranium. DOE terminated the cold-standby program in September 2005 and replaced it with a cold-shutdown program, which no longer maintains the gaseous diffusion restart capability. The process buildings, support buildings/structures, and auxiliary buildings/structures are more than 60 years old but have been maintained in a safe and secure condition. Radiological control programs monitor and protect workers from the radionuclide contaminants. Hazardous materials/wastes are controlled and inspected per applicable permits, agreements, or other requirements. General support and utility systems (such as water treatment, sewage systems, steam and electrical systems, etc.) will continue to be operated at PORTS during most of the deactivation activities to support the workforce involved in deactivation and numerous other site functions that may extend beyond deactivation activity completion. Routine maintenance and inspection actions will continue, as long as necessary, to maintain regulatory compliance and safety, and protect government assets.

4.2 PORTS COMPLEX BUILDINGS/STRUCTURES DEACTIVATION ACTIVITIES DESIGN

Deactivation is the portion of the remedial action for the PORTS buildings and structures that is performed prior to demolition. Deactivation remedial actions will continue at PORTS until all buildings and structures have been demolished and site restoration is completed. The key objectives of deactivation are to ensure: (1) PORTS buildings, structures, and infrastructure are maintained in a safe condition prior to demolition; (2) mobilization and site preparation work are performed to provide the support infrastructure required for safe and efficient deactivation and disposition of the resulting waste; and (3) buildings, structures, and infrastructure are prepared for demolition as demonstrated by achieving standardized demolition readiness criteria, to the extent possible under the deactivation activities described below, to allow the waste generated by demolition of the remaining buildings/ structures and their contents to be disposed on site. These standardized demolition readiness criteria are as follows:

1) Materials and waste have been removed from the buildings such that the remaining building materials and contents are compliant with the OSWDF WAC Component 1 (prohibited materials) and Component 2 (radioactivity and chemical concentration limits).

2) Wastes identified for off-site disposal have been appropriately removed as described in the CAMU Supplement to the Waste Disposition RI/FS and adopted in the CAMU decision presented in the Waste Disposition ROD.

3) The equipment and materials remaining in the building pose no credible basis under any conditions for a nuclear criticality event (criticality incredible).

4) Utilities to the building have been isolated from the site's utility distribution systems and other buildings and structures, except for the storm sewer and limited electrical service.

5) The building has been appropriately secured to prevent unauthorized entry.

OSWDF WAC Components 1A and 1B requirements are identified in Appendix B, Table B.1 and Table B.2, which also identify waste to be disposed off site as provided for in the CAMU Supplement to the Waste Disposition RI/FS. These WAC components provide key design bases for the hazard abatement actions described in this work plan to prepare buildings for ultimate on-site disposal through removal of unacceptable materials and wastes. The tables in Appendix B also provide a crosswalk to the applicable section of this deactivation design that describes the actions to be taken for each of the waste types, if applicable.

When the term demolition waste is used in this document, it means the buildings and structures (e.g., roof, walls, beams, columns, stairs, aboveground concrete), process and utilities infrastructure (e.g., piping, equipment, utilities, ductwork) remaining at completion of the deactivation remedial activities. Demolition waste may also include deactivation waste stored in the buildings, including low-level (radioactive) waste (LLW) generated by deactivation activities and any TSCA waste due to PCB contamination.

The following sections describe the design and implementation of the tasks necessary to complete the deactivation remedial action, including additional PCB transformer management requirements (see Section 4.2.4.3) that apply to process buildings that were not addressed in the Process Buildings Deactivation RD/RA Work Plan. These activities will be conducted as necessary until the entire remedy presented in the Process Buildings ROD is complete and the resulting waste is dispositioned. The ARARs and compliance approach associated with the deactivation remedial action are provided in Appendix A; in addition, each of the deactivation and waste management design elements presented below includes discussion of key ARARs and illustrates example implementation of the ARARs.

4.2.1 DOE Access Controls and Surveillance, Preventative Maintenance, and Housekeeping

The Process Buildings ROD states: "DOE access controls are a part of the demolition remedy once remediation begins until the remedial activities are complete. The controls will be implemented and modified during the course of remedy implementation in accordance with DOE requirements." The remedy implementation for the PORTS remedial actions may take decades to complete. In the interim period, routine S&M, such as roof repairs, housekeeping and inspection activities, and a wide variety of activities will continue to be needed for the site structures involved in this work scope.

4.2.1.1 DOE access controls

Standard DOE access controls are already in place for all DOE buildings at PORTS, including the buildings under this scope of work, as needed. Access controls will be implemented and modified during the course of the remedial actions in accordance with DOE requirements. Access to the buildings is restricted and controls for some of the buildings include requirements for a security clearance or cleared escort. Additional controls exist for access to radiologically contaminated areas and areas with a potential for radiological exposure. These controls will continue throughout deactivation and may be modified as necessary for safety and security as deactivation progresses. Once utilities are isolated, access to buildings will be further limited and controlled.

DOE Order 458.1 is a key ARAR for this design element, governing protection of the public from radiation exposure. Under this requirement, DOE is required to design and implement the appropriate

access controls to restrict general (public or untrained worker) access to areas that have radioactive materials or waste and to minimize unnecessary or inadvertent exposures to associated hazards.

4.2.1.2 Badging and escort requirements

Ohio EPA will have access to the geographic area affected by this action under specific site controls. All on-site visitors are required to obtain a DOE-issued badge as part of site health and safety and security requirements. Temporary badges will be issued upon request. Ohio EPA holders of temporary badges as well as DOE-issued permanent site badges require an escort in support of health and safety and national security. DOE will provide any Ohio EPA representative with an escort. Requirements for entry into radiologically controlled or contaminated areas could include wearing personal protective equipment (PPE) and/or monitoring devices. Ohio EPA will be able to visit the project area at any time; however, DOE is required to know who is present on site at any time for accountability purposes in the event of an emergency.

To have access to PORTS, Ohio EPA employees with DOE-issued badges are required to complete training, primarily for health and safety or security purposes. The DOE contact for the employees will notify them of training requirements.

4.2.1.3 Surveillance, preventative maintenance, and housekeeping

Buildings and structures need routine surveillance and preventative maintenance to ensure they are safe to enter or access for deactivation or demolition activities to be performed in the building/structure. Grounds and infrastructure (e.g., utilities, roads, rail spurs, fencing, and signage) need maintenance and upkeep to continue to meet standards for use. Routine activities such as visual inspections, maintenance of moving parts, repair of roofs or other structural components, collection of garbage or radiologically contaminated materials, mowing and trimming, snow removal, and other maintenance and housekeeping activities and other activities needed to keep the building/structure safe for workers are part of this scope of work. Equipment, vehicles, and other resources necessary to perform "Work" as defined by Section 5.nn of the DFF&O must also be maintained. S&M will continue until completion of all remedial activities. However, the amount of S&M and housekeeping activities required will decrease as buildings, structures, and infrastructure move from active to deactivated status and are removed.

There are many different activities that are conducted under S&M, but each activity has the potential to generate waste; therefore, the key ARARs are those related to the management of wastes generated from these activities, such as DOE Order 435.1. DOE Order 435.1 provides a set of management requirements for LLW. Waste generated from S&M activities will be managed as discussed in Section 4.3, Waste and Materials Disposition and Transportation Activities.

4.2.2 Mobilization and Site Preparation

The Process Buildings ROD states: "Mobilization and site preparation will occur as necessary to support D&D activities. This includes actions such as relocation of continuing operations or systems to existing or temporary facilities; movement or reconfiguration of existing utilities, roads, fences, lighting, and drainage; and erection of temporary facilities and support areas for D&D workers, materials, and equipment. Also included could be the installation of perimeter monitoring systems, storm water retention measures, dust suppression equipment, and runoff controls such as storm drain filtration or blocking. On-site transportation facilities such as rail spurs or haul roads may need to be upgraded. Decontamination or other processing facilities may need to be constructed. Site vegetation will be removed, as needed. Equipment will be brought to the area. Laydown areas and temporary construction

facilities may be constructed." The mobilization and site preparation actions associated with deactivation of the PORTS buildings and structures are described in this section.

4.2.2.1 Preparation of work area/staging/laydown areas

Equipment will be brought to the buildings as needed to facilitate deactivation. Typical administrative controls that may be employed include establishing control zones, contamination reduction zones, support zones, construction areas, access/egress corridors, personnel monitoring, air monitoring, and other items designed to increase safety, facilitate the movement of materials or the staging of waste for removal from the buildings and structures, and reduce the potential for the spread of contamination.

When deactivation activities require vegetation removal and/or soil disturbance, erosion and sediment controls will be established in accordance with the substantive requirements of Ohio EPA's *General Permit Authorization for Storm Water Discharges Associated with Construction Activity under the NPDES,* Ohio EPA Permit No. OHC000005, issued April 23, 2018 (or latest version) (hereafter referred to as the General Permit for Construction Activity) (see Section 6.1.4.3). All controls must be maintained in a functional condition until all upslope areas they control are permanently restabilized. Erosion and sediment controls will be inspected weekly and after significant rainfall events to ensure they remain functional. Repairs will be initiated as soon as a deficiency is discovered to ensure functionality through the life of the project. Additional erosion and sediment controls will be installed as soon as it is determined that the installed erosion and sediment controls are not effective.

As these activities will generate solid waste, such as clean construction and packing materials, key ARARs are 40 *CFR* 262.11(a) and *Ohio Administrative Code (OAC)* 3745-52-11(A) for characterization of solid waste (which requires the generator to determine if the waste is listed or exhibits hazardous characteristics) and *OAC* 3745-400-04 for disposal of construction debris. Under this requirement, waste is evaluated for hazardous characteristics and to determine if the waste is listed. These activities also have the potential to generate fugitive dust emissions; therefore, *OAC* 3745-17-08(B) is also a key ARAR. Visible fugitive dust from such activities will be addressed by mitigating measures such as misting and fixative application. Management of water discharges per the General Permit for Construction Activity, Part III.G.2, is also a key ARAR. Erosion and sediment controls consistent with this General Permit will be implemented, such as protection of storm sewer inlets with sediment barriers or other appropriate devices. Compliance with PORTS NPDES permit limits continues throughout the remedial action.

4.2.2.2 Temporary support building/structure installation

Erection of new temporary buildings or structures and support areas will be required to support implementation of deactivation activities as addressed in Section 4.2 (such as personnel change and shower buildings/structures and utility reconfiguration) and Section 4.3 (such as waste treatment and size reduction). A temporary structure is considered one necessary to support activities required under the DFF&O and one that will be removed (dismantled, demolished, or relocated) after completion of the activities being supported. These temporary buildings or structures may provide either direct or ancillary support for implementation of the remedy, and include, but are not limited to, activities such as reconfiguration of rooms inside the buildings, establishing project labs or NDA areas, provision of parking areas, installation of structures (e.g., trailers, sheds, self-contained offices, tension support structures, preengineered buildings), relocation of fences or other components of DOE security systems, installation or rerouting of utility feeds (e.g., electrical connections for trailers/small offices), placement of lights or cameras, installation of gravel or paved surfaces (e.g., parking lots, laydown areas, sidewalks, or aprons), installation of temporary roads (e.g., designated haul routes), and similar activities/structures.

There are two categories of roads that will be installed under the category of temporary support building/structure: general purpose roads and designated haul routes. General purpose roads are paved or unpaved roads on the DOE property that are used by site personnel and in some instances, the public. Installation of temporary general purpose roads includes rerouting of existing roads on site as well as construction of new roads.

Haul routes are specifically designated or constructed for moving waste and segregating associated heavy equipment traffic from general traffic. The routing and location of haul routes will be based on project needs and will vary during implementation of the Process Buildings Project.

Temporary support buildings/structures added to PORTS as a result of activities under this work plan are governed by an evaluation requirement identified in the Process Buildings ROD, which states:

> "Requires temporary structures to be evaluated to determine if such construction meets the definition of D&D in the DFF&O. If such construction meets the definition of D&D in the DFF&O, the structure would need to be added to the DFF&O, Attachment H through a modification to the DFF&O. If added to Attachment H of the DFF&O, the structures would then be demolished, as part of this decision, upon completion of the project, if there is no future planned use for the structure."

The definition of D&D is presented in Section 5.e of the DFF&O.

Key ARARs include 40 *CFR* 262.11(a) and *OAC* 3745-52-11(A), and *OAC* 3745-400-04 and *OAC* 3745-17-08(B) which will be addressed as discussed in Section 4.2.2.1. General purpose roads and those designated or constructed for waste hauling will be routed to avoid impacts to streams and wetlands not already discussed in this work plan.

4.2.2.3 Operations relocation

Existing operations (e.g., waste and uranium materials storage, classified materials storage, or off-site waste shipping operations) that are still needed, but are located in buildings and structures being deactivated, will be relocated to other site buildings or areas. Relocation may be to other active buildings or structures, another building contained in the scope of this plan but not yet deactivated, to temporary structures (e.g., trailers, tension support structures) purchased or leased for the specific purpose, or even to a new building or structure, as decided by site needs.

Operations relocation includes, but is not limited to, personnel, materials, equipment, and documentation. For example, stored uranium materials currently deemed attractive for retention under DOE requirements will be relocated from buildings and structures before necessary safeguards (e.g., detection systems) are interrupted and in consideration of other requirements and benefits.

4.2.2.4 Refurbishment/modifications

To facilitate safe access and capabilities for hazard removal, investment recovery, operations relocation, or other remedy activities, it will be necessary to repair or modify equipment or other services for use during deactivation or demolition. Because of the wide array of structure types included in the scope of this work plan (buildings, utility distribution systems, tunnels, water processing buildings/structures, lagoons, etc.), refurbishment and modification activities can take on many forms. Examples include, but are not limited to, repairing or refurbishing elevators, cranes, doors, ladders, mezzanines, pit covers, railings, safety chains, lighting, electrical equipment, heating and ventilating equipment, and exhaust systems. Modifications also include retrofits or upgrades to existing systems and equipment to restore,

upgrade, or modify capabilities in support of deactivation and demolition, including modifications of utilities necessary to facilitate deactivation and demolition needs. Modifications or upgrades of utilities to prevent interruption of service to other DOE site tenants are also included. Refurbishments and modifications will be conducted in accordance with the ARARs identified in Appendix A.

Key ARARs include 40 *CFR* 262.11(a) and *OAC* 3745-52-11(A) for characterization of solid waste, which require the generator to determine if the waste is listed or exhibits hazardous characteristics.

4.2.2.5 Material and equipment removal for reuse/recycle

Some materials recycling will occur outside of the authority of this work plan under a pre-D&D agreement with Ohio EPA. The materials targeted for pre-D&D recycling are materials isolated from the gaseous diffusion process operations and have been previously evaluated and determined not to be contaminated. Unlike other pre-D&D activities, pre-D&D recycling will continue after this work plan is concurred with/approved, as applicable. The agreement includes recycling of materials generated incidental to ongoing O&M (such as clean cardboard, plastic, and aluminum cans directly related to operation and maintenance of the building/structure); generated from closed systems at active support buildings/structures not associated with processing at the site (such as freon and oils); and process support equipment, materials and tools (such as spare parts in warehouses, vehicles, and scrap metal not associated with demolition or from radiological areas) at PORTS.

Materials (primarily metals) and equipment generated under this work plan may be suitable for recycling and may be removed during deactivation for this purpose. Buildings and structures involved with the enrichment process at PORTS and other systems that could have become exposed to radiological contaminants may not be eligible for unrestricted release, which would limit recycling and reuse options. Materials generated by deactivation that may be suitable for recycling will be reviewed as appropriate under the DOE Excess Inventory System for removal and use by other government entities. After this process is complete, and if appropriate, material and equipment will be evaluated for beneficial reuse and/or recycling.

The materials and equipment removed for reuse and/or recycle must meet any applicable DOE radiological release standards and not be subject to DOE administrative prohibitions. Equipment and materials for recycle may contain hazards (e.g., lead metals or equipment with asbestos or lead-containing insulators). Any material for recycling and/or reuse under the Waste Disposition ROD will be prepared and recycled in accordance with the DFF&O, ARARs as identified in Appendix A, applicable WAC, and applicable requirements of 40 *CFR* 300.440, *Procedures for planning and implementing off-site response actions*, also known as the off-site rule. Recycling of materials contaminated by radioactive constituents, such as contaminated nickel discussed under the Process Buildings ROD, may become eligible for recycling in the future if processes are developed for decontamination of the nickel or if internal reuse opportunities become available.

Key ARARs for this design activity include DOE Order 458.1(4)(k)(3) requirements, which specify requirements for clearance for release of radiological materials from radiological controls and applicable requirements of 40 *CFR* 300.440.

4.2.3 Characterization and Data Collection

The Process Buildings ROD states: “Characterization of stored materials, equipment, structures, and residual soils will be performed, if needed, to supplement process knowledge, to support worker safety, environmental compliance, and waste management and disposal decisions, and in compliance with ARARs.” DOE intends to utilize process knowledge in the planning and implementation of

deactivation activities to the extent practicable. However, additional characterization information will be collected where necessary to address specific requirements, as described in more detail below.

Characterization is a fundamental process, completed throughout the deactivation and demolition remedies described in this work plan, that supports not only the determination of chemical and radiological constituents associated with the wastes generated, but also will provide the information necessary to comply with ARARs and regulations during planning and performance of the work activities. Characterization will be an essential part of waste management processes (including packaging, storage, transportation, and WAC compliance), health and safety processes (including predicting and mitigating worker exposures), and environmental compliance processes (including prediction and mitigation of air emissions and effluents and measurement of project impacts on the environment) being conducted under this work plan.

The following examples reflect the wide range of characterization activities being conducted under the Process Buildings Project:

- Health and Safety
    - Identification of potential airborne hazards to workers
        - Radiological (particulate)
        - Chemical (beryllium, lead, PCBs, asbestos, volatile organics)
        - Biological (bird droppings).
    - Measurement of radiological dose.
- Environmental
    - Predict contaminants in airborne emissions
    - Predict airborne emission levels
    - Identify contaminants and predict concentrations in effluents
    - Monitor emissions and effluents via sampling/monitoring.
- Off-site Waste Disposition
    - Identify materials to be removed during deactivation
    - Identify unknown liquids and solids
    - Determine hazards present in individual packages (for regulatory compliance with packaging, transportation, and waste acceptance requirements)
    - Meet characterization QA criteria and complete independent waste certification verification.
- On-site Waste Disposition
    - Determine criticality incredible and identifying deposits to remove (NDA)
    - Determine radiological content per waste stream

- Determine packaging, storage, and transportation requirements
- Meet characterization QA criteria and complete independent waste certification verification.

These characterization activities draw from existing information and also produce additional data and knowledge that can be applied to other characterization activities. For example, removable radiological contamination data from surfaces in a building that have been collected initially to support worker protection goals may ultimately be useful in characterizing the radiological content of future demolition waste from the building and predicting the potential for emissions that will need to be mitigated during demolition.

The evaluation and collection of characterization data under this work plan will follow a consistent and basic approach. Information needed from the characterization process will be identified and existing data and process knowledge will be utilized first, where available and sufficient to provide results of necessary confidence. As needed, additional data and information will be collected, as a secondary step, when existing information is not sufficient. When additional information must be collected, it may include intrusive sampling and analysis, field measurement data, or additional information from existing records. Sampling and other data gathering plans for waste characterization purposes, which includes waste for off-site disposition and on-site disposal (including building structures and contents prepared for demolition through deactivation), are developed and approved internally consistent with the requirements of the SADQ. When additional data gathering activities meet the requirements for submittal of a SAP for Ohio EPA review and concurrence (see Section 6.5 for additional discussion on SAP submittal), the SAP will be submitted to Ohio EPA for review and concurrence prior to conducting sampling as outlined in the DFF&O.

As identified in Sections 2.1.4 and 2.1.6 of this Comprehensive Process Buildings RD/RA Work Plan and in the Process Buildings RI/FS Report, PORTS has completed a wide variety of previous sampling activities. Additional chemical and radiological data are also routinely collected as a result of ongoing worker safety (industrial hygiene and health physics) and emissions monitoring activities, and from NDA measurement programs being conducted for buildings and structures with radiological content. These data may include laboratory analysis results as well as information from field screening and measurement tools and surface contamination swipes. Previously collected data and information can be used to the extent applicable or relevant to the wastes and materials generated under this work plan. This extensive library of previously collected site information for PORTS provides information useful both in characterizing waste for off-site disposition and for characterizing the structures cleared by deactivation activities for demolition and on-site disposal (the primary focus of the remainder of this section).

Data and process knowledge will both play a role in waste and building/structure characterization. Data may take the form of information collected from sampling and analysis under a process, including data quality objective development through full data validation, but also includes other sources of information, like field data (such as from radiological activity measurement tools and NDA) and sample analysis results obtained under pre-SADQ data quality programs. Process knowledge is definitive knowledge about the processes and the materials that produced a given material or waste, which may include data from historical sampling, knowledge of characteristics of raw materials used, mass balances documented, or other forms of documented information that are directly connected to the waste generating process. As identified in Ohio EPA guidance, *Use of Generator Knowledge in Complying with OAC rule 3745-52-11 Hazardous Waste Evaluation* (Ohio EPA 2014), information from similar processes can also be used as process knowledge, to the extent that those similarities can be demonstrated and documented. For example, PCB content in paint data from one building/

structure may apply to other buildings/structures because the paint may be known to have been used in other locations.

Stages of Characterization
Planning and characterization steps described below are addressed in more detail throughout this section:

- Data Needs – Each activity or decision that is supported by characterization is reviewed to determine the type and amount of information needed from the characterization results. For waste materials data may be needed to determine regulatory category, packaging needs, contaminants controls, etc.

- Data Assessment – Existing data and process knowledge are evaluated against the identified data needs. Data gaps, if any, are identified as the basis for collection of additional information.

- Collecting Additional Information – When data gaps are identified, additional information is collected, which may include collection of additional measurements or samples.

- Characterization – Characterization is completed for the activity or decision by the project with support of Waste Management personnel, based on the assembled data and process knowledge. With respect to waste for on-site disposal, the WAO provides oversight of characterization processes and documentation for on-site waste disposal and performs waste acceptance. The WAO may provide guidance to waste generators to meet characterization responsibilities.

For OSWDF-bound wastes, characterization additionally includes:

- Waste Stream Planning – Waste streams to be generated by demolition are identified on forms required by the WAC Implementation Plan.

- WAO Review – The WAO reviews waste planning and characterization documentation submitted by projects generating waste for on-site disposal. The WAO's role in waste acceptance for the OSWDF provides it with authority to reject submittals and require additional information. The WAO may also provide guidance to waste generators to meet waste characterization responsibilities and other WAC-related requirements for on-site disposal.

- Demolition Plans – Demolition plans include demolition waste management plans and identify demolition waste stream characterization results, any remaining characterization requirements necessary for completion during the demolition process to demonstrate WAC compliance, and when addressing demolition of building slabs and foundations, include requirements for evaluation of exhumed soil for the potential to identify additional PHCs.

As summarized in Section 3.2.2 of the SADQ, the first step of characterization is determining what questions must be answered and what data will be necessary (the data needs). Determination of the appropriate level of quality for the characterization results is also part of the data needs definition process (see SADQ Section 3.2.3). For wastes that will be removed from buildings during deactivation and the buildings and contents that remain for demolition, this evaluation includes identification of information necessary to manage the waste in compliance with ARARs upon generation (such as properly categorizing waste by regulatory category for compliant containerization, as applicable, and interim staging or storage), information necessary to package and transport the waste in compliance, and information necessary to meet waste acceptance requirements (including license requirements, if applicable) at the receiving location.

The next step in the process is review of available data and process knowledge and evaluation against identified data needs to determine if there is sufficient existing information of the necessary levels of quality or if a data gap exists. When the combination of available process knowledge and data are insufficient to meet the identified data needs, additional information will be collected, potentially including additional field sampling activities.

Sampling and analysis conducted in support of waste management objectives, when required, is performed in accordance with internal sampling work control documentation that conforms to the requirements of the SADQ. Waste management sampling and analysis includes waste characterization of building components for the purposes of defining storage requirements, disposition pathway, transportation requirements and off-site facility WAC demonstrations. Waste sampling and other waste characterization activities will be noted in DFF&O quarterly reports. Results will be made available on request. Sampling conducted for the purpose of design decision-making will be submitted for Ohio EPA concurrence prior to sample collection (see Section 6.5 for additional discussion on SAPs).

Deactivation

The PORTS approach to deactivation relies on thoroughly understanding the contents of each building or structure to support identification, location, and removal of those materials necessary to comply with the OSWDF WAC. The deactivation plans for each building or structure are informed by existing chemical and radiological process knowledge, previously collected sampling and analysis data, field screening tool data, data collected for worker protection, and NDA results. Deactivation planning also includes detailed visual inspections (walkdowns) throughout each building or structure to identify and locate materials to be removed by deactivation, in order to prepare the building for meeting the OSWDF WAC following demolition. Walkdowns identify discrete items for removal, based on hazard content (such as mercury or asbestos) or properties (such as liquids). Walkdowns are again performed at the conclusion of deactivation hazard abatement activities to verify that the materials required to be removed during deactivation have been removed. Wastes removed during deactivation for off-site disposition are managed and dispositioned under the existing PORTS waste management programs and procedures, which may perform additional confirmatory sampling or measurements after the waste has been containerized and removed to storage.

An approach similar to the one identified in this work plan for deactivation (i.e., removal of specific materials with hazardous content during a demolition preparatory phase) has previously been used at PORTS successfully for deactivation and demolition of buildings and structures under removal actions. This approach, which included comprehensive media sampling of the buildings and structures, has been consistently demonstrated as effective in deactivation and demolition of more than three dozen buildings and structures, resulting in final demolition waste not being regulated as hazardous under RCRA (some wastes were regulated under TSCA for PCB content). Data collected in support of these previous deactivation and demolition actions provides another potential source of data or process knowledge for use in characterization of other remaining PORTS buildings for demolition.

Demolition

Recognizing the difficulty in obtaining a representative sample from building debris as it is being generated, the characterization of buildings and structures addressed under this work plan will be completed prior to performing the demolition of the structures. Large amounts of existing data and process knowledge are available for most buildings or will be available at the end of deactivation activities as a result of the many data collection and characterization activities underway during deactivation. The characterization of most buildings and structures for demolition, once the deactivation hazard abatement activities have been completed (Section 4.2.4), is anticipated to be supported by

existing data and process knowledge (including field measurements collected during deactivation activities). Additional data will also be collected, as needed, to meet identified building/structure characterization data needs. Due to their more complex operational histories, the operation of wet chemical processes, and the presence of a wide variety of contaminants, characterization of buildings like the X-700 Converter Shop and Cleaning Building and the X-705 Decontamination Building for demolition is more likely to require additional data collection, including sampling and analysis, than warehouses and less complex buildings/structures.

When additional data collection is needed to address a data gap, it may be addressed by collection of samples, field screening measurements, and/or radiological measurements.

WAO oversight role in characterization for on-site disposal
The WAO will provide preplanning reviews during building and structure characterization (which is initiated during deactivation activities) and during demolition project planning to ensure the characterization data and process knowledge provided by the waste generator project for the planned demolition waste meets established OSWDF WAC and administrative acceptance requirements.

The WAC Implementation Plan requires the completion of the Project Planning OSWDF Compliance Checklist, which includes identification of the regulatory category of the waste to be generated, identification of all sources of information used in the characterization, and a description of how the information is used to categorize and characterize the waste.

The WAO reviews the waste stream and characterization information submitted by projects generating waste for on-site disposal and determines whether the supplied information and approach are acceptable to meet the WAC and associated requirements for waste acceptance. The WAO may reject the submittal for a variety of reasons. If the submittal is rejected for insufficient data or data quality, the WAO will instruct the project generating the waste to obtain additional characterization information prior to approval of the documentation for waste acceptance.

Project-specific demolition (design) plans, to be submitted for discrete demolition projects, will include a summary of the project-specific waste management plan to be prepared under the requirements of the WAC Implementation Plan. The project-specific plans will include identification of waste streams that will result from the demolition activities and the characterization and management of those waste streams, consistent with the requirements of the WAC Implementation Plan.

The following subsections address specific elements of chemical and radiological characterization.

Key ARARs for this design element include those that identify waste characterization requirements, including 40 *CFR* 262.11(a) and *OAC* 3745-52-11 (characterization of solid waste), 40 *CFR* 761.61 (TSCA waste characterization), and DOE Manual 435.1-1(IV)(I) (characterization of LLW). Characterization includes evaluation for hazardous characteristics and listings, evaluation for PCB content, and evaluation for radioactive material content. In many examples, process knowledge will provide sufficient information to complete the characterization of wastes. When process knowledge is insufficient, sampling to complete characterization for disposition in accordance with disposal facility WAC will be completed.

4.2.3.1 Chemical-based characterization

Characterization of wastes for chemical content will occur both for wastes being dispositioned off site and on site. For both disposition options, wastes are evaluated versus ARARs or regulations (as applicable)

to identify the proper regulatory category, which ultimately determines subsequent management of the waste.

The OSWDF WAC defines the chemical-related requirements for on-site disposal, including specifying types of waste excluded, based on regulatory designations and descriptions and activity and chemical concentration criteria, including wastes DOE agreed not to dispose on site. Hazard abatement activities conducted during building and structure deactivation focus on removal of waste types prohibited from disposal at the OSWDF, so that what remains in each building or structure is acceptable for on-site disposal under the OSWDF WAC once the building has been demolished and waste has been segregated and sized appropriately per the WAC Implementation Plan. Waste characterization for off-site disposition is accomplished under the existing PORTS waste management program. Characterization of the building and structures and their contents after deactivation is conducted to determine regulatory category based on chemical content.

Chemical hazards in the PORTS buildings and structures are present in both materials of construction (including equipment) and residual process-related materials from the operations or maintenance of the buildings and structures (including holdup and spills). Secondary waste, such as contaminated PPE generated during project activities, will typically be characterized based on the contaminants associated with the work that generated the waste.

Materials of construction
Chemical constituents in PORTS materials of construction are well-documented from previous sampling and other data collection actions. Additionally, extensive chemical characterization data was collected from building materials and sources of nonsegregatable content at the Oak Ridge, Tennessee K-25 gaseous diffusion plant, a sister facility to PORTS. The K-25 facility performed very similar uranium enrichment operations, in similar equipment and buildings, of similar design and construction, from the same construction era as PORTS. Implications of the K-25 data are discussed in more detail in Section 4.2.3.1 of the Process Buildings Deactivation RD/RA Work Plan. Portions of that data have potential applicability to chemical constituents in similar materials (such as lead-containing paint) encountered in the PORTS complex buildings and structures addressed by this work plan.

Residual materials
Residual materials, including various forms of radiological holdup materials and radiologically contaminated chemicals, surface contaminants (including radiological and chemical particulate or liquids), used lubricating oils, dielectric fluids, and coolants were included in previous PORTS sampling and analysis activities. As described in Section 4.2, bulk liquid and gas forms of residual materials (and some radiological holdup materials, such as those necessary to meet criticality incredible criteria for buildings and structures) are being removed as part of deactivation, primarily for off-site disposition. Commonly encountered residual materials (such as uranium-based deposits in PGE, PCB-based dielectric fluids, oils, coolants, and etc.) are typically already represented by previous sampling activities or can be characterized based on a combination of process knowledge and existing data. However, deactivation activities may encounter or generate residues that are undocumented and require additional characterization, potentially including sampling and analysis. Characterization QA requirements, as required by the SADQ, are reflected in determination of characterization needs and verification that they have ultimately been met. Further, characterization results receive further independent review as part of radioactive waste certification activities prior to acceptance for disposition (for on-site waste acceptance, the waste generator certifies the waste and the WAO verifies the OSWDF WAC and other criteria are met).

Off-site disposition
Characterization of deactivation waste removed for off-site disposition will be completed within the existing PORTS site waste management program, using existing procedures that ensure management of these materials in compliance with ARARs (and applicable regulations when the wastes leave the site). Waste management procedures address waste categorization, waste data management, waste identification and tracking, containerization, marking/labeling, storage and staging, characterization, sampling (including sample planning, collection, analysis, data validation, and data management), packaging for transport, transportation management, and waste certification. Existing site data management systems will be used for tracking containerized wastes from generation through final disposition. Data and process knowledge used to complete waste characterization are documented and maintained as records; the data, process knowledge, and methods used to prepare the characterization are referenced in the characterization file, and any narrative necessary to explain how this information was used to calculate the results is also included in the file. The files are then maintained in compliance with ARARs and DOE record retention requirements.

On-site disposition
Chemical characterization of buildings and structures for demolition, which is conducted following hazard abatement deactivation activities under this work plan, will follow a process similar to that used for containerized waste being dispositioned off site. However, this future demolition waste will be characterized in place prior to demolition, typically as a large waste stream encompassing the entire building and contents remaining after deactivation (excluding those materials that must be managed and placed separately in the OSWDF, like transite sheets). Waste acceptance requirements for the OSWDF and ARARs provide the primary criteria to be met.

Additional considerations may apply for wastes disconnected during deactivation and stored in buildings awaiting disposal (see Section 4.3.3). While in storage, records for waste that has been containerized, such as description, location, and any characterization-related information, are maintained to support compliant storage and management. Bulk wastes being stored and characterized as LLW will be controlled through boundary controls and placarding but will not be tracked. Bulk wastes being stored and characterized as PCB remediation waste/mixed PCB remediation wastes will also be controlled through boundary controls and placarding and will be tracked as to location and inspected periodically. Wastes requiring further processing (such as downblending) may be processed for on-site disposal, if eligible under the OSWDF WAC (see Section 4.3.6). Waste characterization will be documented consistent with the requirements of the OSWDF WAC and WAC Implementation Plan.

As discussed in the previous section, WAO waste certification verification personnel, who are organizationally independent from site project functions, will evaluate characterization information and records and determine whether documentation supplied by the project meets established OSWDF WAC and requirements for acceptance (see Section 4.3.4). As described in the WAC Implementation Plan, the WAO has the authority to accept or reject the documentation package, including the authority to identify a method to correct deficiencies (e.g., requiring the collection of additional samples for analysis). A summary of the planned demolition waste streams and associated characterization and basis will also be included in respective demolition design plans submitted to Ohio EPA for each building or structure.

Characterization consistent with regulatory guidance
These approaches to characterization of the primarily heterogeneous waste streams that will result from demolition are consistent with *Characterizing Heterogeneous Waste: Methods and Use of Generator Knowledge in Complying with OAC rule 3745-52-11 Hazardous Waste Evaluation*

and January 9, 1992 Federal Register [page 990] preamble to the Proposed Rule for land disposal restrictions. Existing data and process knowledge available following deactivation hazard abatement activities is anticipated to be adequate to characterize much of the future demolition waste without collection of additional physical samples for chemical analysis. This approach is consistent with the CAMU Supplement to the Waste Disposition RI/FS, which stated "the end-state of the building after removal of RCRA-hazardous waste will be primarily assessed through process knowledge and visual inspection. Field and laboratory data can be used if determined necessary during the design and implementation of the remedy but the volume of any remaining nonsegregatable hazardous waste would be so low that by regulatory definition, the remaining D&D waste, considered as a universe, would be considered solid or low-level waste. Therefore no [principal hazardous constituent] PHC evaluation is needed because the waste is not considered RCRA-hazardous." Note that demolition wastes may require management under other regulations (such as TSCA for PCB and/or asbestos content) and the *Modification to the February 20, 1992 Compliance Agreement between the United States Department of Energy and the United States Environmental Protection Agency, Washington, D.C.* (U.S. Environmental Protection Agency [EPA] 2017) (TSCA Compliance Agreement). This characterization approach is also consistent with EPA guidance *Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste – Final* (EPA 2015) which states that a facility may apply acceptable knowledge of the waste in lieu of testing the waste.

4.2.3.2 Activity-based characterization

Radiological activity-based characterization for the waste and materials removed during deactivation for off-site disposition, as well as the buildings and structures remaining after deactivation, will follow the approaches identified for chemical characterization, but will rely on radiochemical and radiological data subsets and process knowledge. PORTS data collected under previous investigations, as described in Sections 2.1.4 and 2.1.6 of this work plan, provide a large source of available radiological information to add to the extensive knowledge of the nature of radiological materials content throughout the PORTS equipment and buildings. Field measurement tools for detecting radioactive materials and dose are also widely in use at PORTS to support work safety planning and control and radiological characterization. These resources are another large source of characterization data for determining radioactive content in the resulting waste and material streams. Data from such field tools provides a ready means to scale known radiological concentration data to overall content for specific materials. A large amount of NDA data will also be available from most PORTS buildings/structures for determining residual radioactive content of buildings and structures following deactivation.

Fate and transport modeling performed in support of the Waste Disposition RI/FS determined that placement of the entire PORTS radiological inventory into the OSWDF (exclusive of the converters, compressors, and coolers from X-326 that are being dispositioned off site) would meet the required safe operating criteria for the OSWDF design. As a result, the OSWDF WAC does not include specific radiological limits to be evaluated for individual wastes. However, all waste with enriched uranium content to be disposed of at the OSWDF must be determined to be incapable of nuclear criticality through all phases of OSWDF operation. Nuclear criticality safety may be determined based on NDA measurement data, intrusive characterization, visual inspection, process knowledge, or a combination of these methods.

The waste is also characterized for radiological content to support all of the other uses for the information. Additional radiological data (which may include intrusive samples, field instrument measurements, and NDA) will be collected, as necessary, to facilitate the safe handling of materials and to ensure worker and public safety, comply with ARARs (such as limits on airborne radioactivity), and determine radiological content in each waste stream. Field survey measurements will also continue to be obtained,

as needed, from remaining equipment and structures to assess surface contamination prior to demolition. Samples collected for these purposes will be collected pursuant to routine waste management, radiological protection, and environmental compliance program requirements.

Radiochemical content determined for each planned demolition waste stream will support tracking of the radioactive inventory from generation through disposition at OSWDF. The waste activity will be determined by the waste generator project, and will be assessed by the WAO (as described in the previous section) and the OSWDF prior to acceptance and transport of waste to the OSWDF. A summary of this information will also be included in the demolition design plan submitted to Ohio EPA to address demolition of the building or structure.

4.2.4 Hazard Abatement

The Process Buildings ROD states that hazardous materials remaining in the process buildings or in the project area will be removed, to the extent practical, prior to building demolition, and will be prepared for appropriate disposition. The specific hazard abatement actions necessary to complete deactivation of the buildings and structures in this plan are described in this section. Where necessary, appropriate processing or treatment of wastes will be undertaken to facilitate management and disposition. When on-site treatment is undertaken, applicable permit otherwise required content is either already present in Section 6.1.4 or will be submitted to Ohio EPA, as applicable.

4.2.4.1 Draining or removal of liquids, gases, and residues

Fuel, oils, and coolants are the major categories of liquids that must be removed from equipment and recycled and/or disposed. Oil is present within various equipment types, including process equipment lubrication systems; hydraulic systems; and significant plant equipment such as bridge crane drives, pumps, diesel generators, vacuum pumps, and compressors. Systems, equipment, and vessels will be gravity drained to the extent possible, and absorbent material will be placed in vessels such as tanks and strainers to absorb remaining residual liquids. For tanks that stored acids, neutralizing agents may need to be used. Minor amounts of residual liquids may be present in system piping (e.g., areas of pipe deflection between pipe supports and equipment cavities) that will remain in place during demolition.

Used oil and liquid removed from equipment and from other building sources will be characterized (which may include sampling) in order to ensure compliance with the receiving facility's licenses, permits or authorizations. These wastes will be removed and dispositioned off site. Temporary storage prior to disposition will meet oil or fuel storage secondary containment requirements. Used oils and liquids will be containerized and managed per ARARs as identified in Appendix A. A key ARAR for this design element is *OAC* 3745-279-22, which defines requirements for used oil storage. Used oil will be collected in drums or tanks in good condition and marked as used oil while being accumulated for off-site disposition.

The pistons on hydraulic door closers in buildings each contain a small quantity (a few ounces) of hydraulic fluid, and there can be many door closers in the larger buildings. Draining the door closer disables the mechanism that controls the opening, closing, and swing of the door. Because the pistons would have to be drained prior to utility isolation, a physical hazard would be created to workers in the building from doors that cannot be held open, have no swing control, and/or must be physically secured closed. This physical hazard would continue after utility isolation to workers who must access the building for surveillance or emergency purposes prior to demolition. Therefore, for purposes of safety, door closers will not be drained and will remain to become part of the future demolition waste.

Motor-operated valves contain grease, but it is not considered a free liquid. Therefore, these items will remain with the structures for demolition and disposal at the OSWDF.

Coolants exist as either refrigerants, such as Freon, or as water-soluble equipment coolants, such as ethylene glycol. Gas and liquid coolants will be removed and dispositioned in accordance with ARARs as identified in Appendix A. Freon coolants are currently anticipated to be recycled under pre-D&D recycling efforts identified in Section 4.2.2.5. A key ARAR for this design element is 40 *CFR* 82.154 (a and b), which addresses requirements for management of refrigerant gases from appliances during maintenance or disposal. Refrigerant gases from appliances will be collected using required practices and certified equipment.

Systems containing other gases or liquids will be evaluated and either vented with appropriate controls (where allowable) or drained, transferred to containers that can be sent off site for appropriate management (recycling, reuse, or treatment for disposal), or processed or treated on site under appropriate controls to facilitate management and disposition.

Uranium residue holdup material may be removed from PGE and piping during deactivation for reasons such as improved safe handling, ease of demolition, or other benefits to DOE. Holdup material removal will be performed in situ, in the X-705, or at other suitable locations (e.g., X-345). Equipment will be disassembled if necessary and deposits removed using mechanical or chemical methods when needed. Holdup material removed from the components may be downblended or otherwise managed to address applicable DOE security requirements. Deposit materials may be treated, such as by grouting, if the materials are hazardous. Downblending may occur in the X-705 or another suitable location, such as the X-345. Any components that cannot be decontaminated to meet criticality incredible criteria for disposal in the OSWDF will be shipped off site.

4.2.4.2 Universal waste

The 1995 Universal Waste Rule created simpler-to-implement standards for managing common hazardous wastes like light bulbs (lamps), batteries, and mercury-containing equipment. The CAMU Supplement to the Waste Disposition RI/FS, in which DOE requested the designation of an Area of Contamination and associated CAMUs and provided supporting related information, states that segregatable universal and hazardous waste will be removed prior to demolition of buildings, recognizing that not all universal and hazardous waste would be segregatable. The volume of any nonsegregatable universal waste remaining in a building or structure following removal of segregatable universal wastes would be so low that the remaining demolition waste, considered as a universe, would not exceed criteria requiring management as hazardous waste (i.e., the waste would be solid waste or LLW). Removal of segregatable universal waste and management of nonsegregatable waste is discussed below. Universal wastes removed from the buildings will be packaged and dispositioned in accordance with ARARs as identified in Appendix A. Radiologically contaminated universal and hazardous wastes will be dispositioned as mixed LLW if they are not released from radiological controls.

Mercury-containing equipment exists in items such as switches, manometers, and thermometers, and will be identified through reviews of engineering drawings and visual inspection of equipment by personnel familiar with the building or structure. Items containing elemental mercury will be removed and dispositioned off site as universal waste (or as mixed LLW if radiologically contaminated and not released from radiological controls). Batteries containing lead and acids will also be removed under the same process.

Segregatable light bulbs will be removed from the buildings. Light bulbs are considered segregatable if they are accessible using traditional equipment (e.g., ladders, scissor lifts, and man-lifts) in compliance with current safety standards for working at heights. If there is an unacceptable safety risk associated with removing certain bulbs in a building undergoing deactivation, these nonsegregatable light bulbs will not be removed prior to demolition and will not be segregated from the demolition waste destined for the OSWDF. Radiologically contaminated waste bulbs may be processed using a bulb crusher (see Section 6.1.4). Bulbs identified for crushing will be managed as hazardous waste at the point of generation. Bulbs for crushing and the resultant waste stream will be managed as mixed LLW.

Key ARARs for this design element include the following: 40 *CFR* 266.80 and *OAC* 3745-266-80 for management of lead-acid batteries; 40 *CFR* 273.31, 273.33 to 273.36; and *OAC* 3745-273 requirements for universal wastes. Lead-acid batteries generated by deactivation will be collected for reclamation to the extent practical, excluding radiologically contaminated batteries. Materials that can be managed under the PORTS universal waste program, such as mercury switches, will be collected in structurally sound, appropriately marked containers that will remain closed when not being filled.

4.2.4.3 PCB wastes

Deactivation activities will ensure that PCB liquids have been drained from equipment. For transformers requiring a solvent rinse or incineration under 40 *CFR* 761.60(b) (including such equipment located in any of the three PORTS process buildings [X-326, X-330, or X-333]), the specified solvent rinse requirements will be completed. Light ballasts will be left in place with the structure for demolition and disposal at the OSWDF. Equipment or structures that may be painted with paint containing PCBs will be left in place for demolition and disposal at the OSWDF. Materials addressed under the TSCA Compliance Agreement will be managed as required under agreement requirements in force at the time (see also Section 6.1.3.1). Materials with PCB content that are acceptable for disposal in the OSWDF and can be left in place in the buildings in compliance with the TSCA Compliance Agreement will remain in the buildings for management as part of demolition waste. Nonliquid PCB waste eligible for disposal in the OSWDF, but requiring special management under the TSCA Compliance Agreement, will be addressed during the demolition phase and are not part of deactivation.

Key ARARs for this design element include the following TSCA requirements for managing and disposing of varying types of PCB wastes: 40 *CFR* 761.50(a) (general PCB disposal requirements), 40 *CFR* 761.60(b) (PCB articles, such as transformers), 40 *CFR* 761.61 (PCB remediation waste), and 40 *CFR* 761.50(b)(7)(i) (storage of PCB wastes with radioactive content). Compliance with these requirements will reflect the differing concentrations of PCBs present, the materials/articles involved, and whether the waste is acceptable for disposal in the OSWDF. For example, PCB liquids drained from electrical equipment are prohibited from on-site disposal and will be sent off site for management, such as incineration.

4.2.4.4 Asbestos-containing materials

Regulated asbestos-containing material (ACM) includes thermal system insulation such as pipe insulation or tank insulation. Asbestos abatement under this work plan will remove friable asbestos associated with a building or structure in advance of demolition in accordance with ARARs as identified in Appendix A. Nonfriable asbestos that may become friable during demolition actions, such as transite panels, will be removed prior to demolition and may be removed as part of deactivation activities. Exterior transite panels, if present, will be left intact to maintain the building shell and will be removed just prior to commencing demolition.

Consistent with the Process Buildings ROD, Category I or Category II nonfriable ACM that has low potential for becoming friable during the demolition process will be left in place for building demolition and disposal at the OSWDF. Examples of these materials include floor tiles, gaskets, caulking, wire insulation, valve or pump packing materials, brake shoes, and Galbestos sheeting. Removal of the transite from the exterior of buildings is not included under the deactivation scope of work, unless necessary to facilitate deactivation activities such as equipment removal.

Support activities associated with asbestos removal include establishing control zones, support zones, access/egress corridors, and construction areas for abatement. Any required containment structures will be constructed and operated in compliance with ARARs. Items such as sumps, dikes, and shoveling pads (for shoveling adsorbents) for removing and containing decontamination water and solutions will be installed as part of the containment. Liquids collected from asbestos abatement actions are filtered to remove fibers. Residual liquids will be disposed through appropriate site wastewater treatment systems in accordance with the NPDES permit.

Key ARARs for this design element include: 40 *CFR* 61.145 and *OAC* 3745 20-04. These regulations address the management of ACM prior to demolition or renovation actions and identify those types of ACM that must be removed before demolition or renovation can begin, as described above. The ARARs also provide requirements for removal including proper wetting, physical handling to avoid damage to the asbestos, and training.

4.2.4.5 Removal of segregatable RCRA hazardous wastes and electronic waste

Segregatable hazardous waste (other than universal waste addressed in Section 4.2.4.2) contained in the buildings will be removed as part of this scope of work and dispositioned (recycled or treated and disposed off site) in accordance with the ARARs identified in Appendix A and 40 *CFR* 300.440. Bulk lead and printed circuit boards fall into this category. Examples of bulk lead materials include radiation shielding and scale weights/counter weights.

Noninstalled electronic equipment that contains printed circuit boards will be removed as part of the deactivation effort and dispositioned in accordance with the ARARs identified in Appendix A. Examples of this equipment are computer processing units, printers, computer monitors, and radiological personnel monitoring equipment. Installed electronic equipment will not be removed from the buildings. Examples of this equipment include bridge crane control systems, elevator controls, control panels, and installed monitoring equipment. Safety concerns over manual disassembly make this equipment nonsegregatable.

Small quantities of lead materials exist in materials of construction in many of the buildings and structures. Examples of these materials include lead-containing solder used in process instrument lines, building plumbing and soldered electrical connections, lead electrical cable shielding, cast iron pipe joints with lead/oakum seals, and lead-based paint on some surfaces. Items, such as described above, will remain in place through demolition and become part of the building demolition waste disposed in the OSWDF unless these materials are determined through characterization processes to cause the structure wastes to be regulated as hazardous. In such an event, nonsegregatable hazardous wastes would also be removed as part of deactivation or demolition as necessary to meet the OSWDF WAC for building demolition waste.

One key ARAR is *OAC* 3745-266-70, related to the management of recyclable materials for precious metal recovery. Any items collected for precious metals reclamation will be documented in records to demonstrate the items are not being accumulated speculatively. Other key ARARs include

40 *CFR* 268.40(a) and *OAC* 3745-270-40(A), governing the disposal of RCRA-prohibited hazardous waste (such as waste exhibiting the characteristic of toxicity) in a land-based unit.

4.2.4.6 Pressurized gas cylinders

Pressurized gas cylinders are used for criticality alarms, maintenance, and equipment operation (e.g., radiological personnel contamination monitors and NDA equipment). Gas cylinders will remain in the buildings for demolition and size reduction if they have been emptied and the valve removed. Cylinders owned by vendors that can be returned to them will be returned. Cylinders that cannot be dispositioned in the OSWDF will be removed from the building and dispositioned off site in accordance with the ARARs identified in Appendix A.

Key ARARs include 40 *CFR* 262.11(a) and *OAC* 3745-52-11(A) for characterization of solid waste to determine if the contents of a cylinder constitute a hazardous waste. Under this requirement, waste is evaluated for regulated hazards.

4.2.4.7 Aerosol cans

Aerosol cans found in buildings or structures will be removed and either vented, punctured, or painted with high-visibility markings to identify them as depressurized and eligible for disposal at the OSWDF, or dispositioned in accordance with ARARs identified in Appendix A (if they contain hazardous materials).

4.2.4.8 Smoke detectors

Some installed smoke detectors in buildings or structures may be considered mixed hazardous waste (based on process knowledge of radioactive source content and suspected lead or silver solder-containing circuitry). Similar materials are currently dispositioned off-site by PORTS using guidance from the U.S. Nuclear Regulatory Commission (NRC) (NRC 2015) that provides for encapsulation of the waste. The resulting waste meets applicable treatment requirements for the hazardous characteristic and also results in a radionuclide concentration that is not regulated as transuranic waste. DOE plans to continue using encapsulation treatment to disposition smoke detectors. Some smoke detectors may be nonsegregatable waste due to the inability to access them safely for removal. In such cases, as described for nonsegregatable universal waste (Section 4.2.4.2), they will be left in place to be managed as part of the demolition waste.

4.2.4.9 Actions to reduce worker hazards

In some cases, predemolition removal or processing of items may be needed to improve the safety conditions for demolition workers. The safety issue addressed may be potential energy stored in the item, such as springs under tension or other equipment, material configurations that could cause flying debris beyond normal demolition boundaries, materials that produce physical hazards at the demolition site, or chemical hazards.

Hazard reduction may also include removal of loose chemical or radiological contamination (e.g., brushing, wiping, vacuuming) or actions to affix contamination in place. If wet methods are necessary for decontamination and determined to meet waste minimization requirements, the wastewater will be collected and characterized to ensure compliance with NPDES permit levels or compliance with water quality standards identified in the ARARs prior to discharge. In some cases, contaminated equipment may be specifically packaged or wrapped to facilitate handling during demolition or removed for disposal during deactivation to eliminate the hazard. Surface decontamination and other hazard reduction efforts will be performed on a case-by-case basis, depending upon contamination levels, the specific contaminants of concern, and the objective of the hazard reduction effort.

Key ARARs associated with this work include 10 *CFR* 850.31 and 850.32 for management and disposition of beryllium-contaminated equipment, and *OAC* 3745-1 for water quality standards. The paragraph above identifies methods for compliance with these standards. Safety programs relevant to the topic in this section are further discussed in Section 6.2.

4.2.5 Utility and System Deactivation

The Process Buildings ROD states: "Deactivation of utilities and specialty systems, such as criticality alarms and security alarms, will occur throughout the predemolition process when they are no longer needed. While some utilities can be deactivated early in the process, others will require characterization, hazard abatement, and equipment removal to be completed in the building (or a major section of the building) before deactivation. In some cases, it may be necessary to construct temporary utility access or systems to support demolition activities or other PORTS facility functions."

Key ARARs include 40 *CFR* 262.11(a) and *OAC* 3745-52-11(A) for characterization of solid waste, which requires the generator to determine if the waste is listed or exhibits hazardous characteristics.

4.2.5.1 Utility disconnects

Utility disconnects will be performed in and around buildings and structures as part of deactivation. Utility disconnects performed under this plan may include modification or removal of portions of utilities or related buildings/structures identified in the DFF&O, as also identified under Section 4.2.2.4. Utilities to be disconnected include, but are not limited to, the plant air system, the sanitary water and sanitary sewer systems, the plant process power system, the plant telephone system, the criticality accident alarm system, the fire alarm system, and the plant steam/condensate system. Hazardous energy sources will be controlled for worker protection (primarily electricity and pressurized gases or liquids). Air gapping and sealing methods will ensure that contaminants (sewage or hazardous liquid drains) are isolated from the demolition construction area activities and the workers, and that the remaining distribution systems are in a safe and operable condition. Utilities will not be disconnected until hazards that are managed or monitored by these utilities have been properly addressed or other measures are in place. Storm sewer systems will generally not be isolated during deactivation, to maintain the control of rainwater from the industrial areas of PORTS. In some cases, modifications of the storm sewer system may be required and other utilities may also need to be maintained (such as electrical power to sump pumps) to maintain the system as operable. Limited electrical services may remain upon completion of this scope of work (either as original power to a building or structure or as temporary new connections necessary during the interim period before demolition) and utilities considered necessary for personnel or safety may also be retained.

Soils disturbed during utility disconnects will be managed as described in Section 4.2.6.1. Fugitive dust and erosion control management during soil disturbances will be performed in compliance with the ARARs identified in Appendix A.

The key ARAR concerning management of fugitive dust is *OAC* 3745-17-08. Fugitive dust emissions arising from utility disconnect activities will be addressed as needed to minimize or eliminate visible fugitive dust using such control measures as water misting or pretreatment with dust suppression chemicals or fixatives.

4.2.5.2 Underground storage tank draining and deactivation

Any existing USTs (e.g., those that support back-up diesel generators) will be taken out of service as a remedial action under the DFF&O, when determined to be appropriate. Deactivation activities will include removal and reuse/disposal of the tank inventory such that there is no more than 1 in. of residue or 0.3 percent by volume of the total capacity of the UST system, and disconnecting/air gapping the

supply lines from the tank. Vent pipes will be maintained until tank removal. Final removal of such tanks will be planned during at- and below-grade demolition.

Key ARARs related to this activity are *OAC* 1301:7-9-12(E)(3)(a-c) for removing a UST from service for greater than 90 days, *OAC* 1301-7-9-12(C) for handling regulated hazardous substances removed from a UST system, and *OAC* 1301:7-9-12(G)(1)(c) for maintaining a UST in a safe condition.

4.2.6 Site Restoration and Demobilization

The Process Buildings ROD states: "Equipment and materials used in these activities will be demobilized from the area. Temporary site restoration may be used if actions in the area are phased and significant time will elapse between phases. Temporary restoration will be done to ensure that the area is safe for workers and to minimize the migration of any contamination remaining in the area."

4.2.6.1 Site restoration

Where soil has been disturbed, recontouring will be performed where necessary to promote natural drainage and prevent ponding of storm water. Permanent grading and seeding to promote positive drainage will be used in the area if future construction activities will not occur within 12 months. Stabilization of disturbed soil areas shall be initiated in accordance to the time frames specified in the General Permit for Construction Activity, Part II.B, Tables 1 and 2.

4.2.6.2 Demobilization

Demobilization will be required upon completion of discrete deactivation activities that required mobilization and site preparation work. Demobilization includes removal of equipment and materials and waste from the work area, except waste that is being staged for future on-site disposal. Removal of equipment includes removal of temporary buildings and structures such as trailers. Note that such structures may be retained for additional uses. For example, temporary shower and locker buildings installed in support of deactivation may be retained to support demolition actions in the same area or may support deactivation of another structure nearby.

Deactivation work that involves soil disturbance requires management of the excavated soil. Soils excavated for utility isolations which adhere to piping or structures removed, or otherwise must be excavated as an integral part of the remedial action pursuant to the DFF&O (see DFF&O Section 5.e.), are considered residual soils. Any soil excavated as part of this scope of work (such as during utility disconnection activities) that is within the area of contamination (AOC) described in Section 6.1.7 of this plan (see also Appendix B of the Waste Disposition ROD), whether contaminated or potentially contaminated with TCE, will be returned to the excavation without further characterization or special handling. Excess soil (i.e., soil that cannot be returned to the excavation area) will be managed in accordance with the provisions of the AOC and will be considered for use as fill at the OSWDF and dispositioned in accordance with ARARs identified in Appendix A and the OSWDF WAC.

Key ARARs for management of excess soil include *OAC* 3745-17-08(B) for fugitive dust and management of water discharges per the General Permit for Construction Activity, Part III.G.2 "Controls". Fugitive dust emissions arising from demobilization activities will be addressed as needed to minimize or eliminate visible fugitive dust using such control measures as water misting or pretreatment with dust suppression chemicals or fixatives.

4.3 WASTE AND MATERIALS DISPOSITION AND TRANSPORTATION ACTIVITIES DESIGN

Management of waste inventories at PORTS is currently implemented under a waste management program that complies with DOE, state, and federal requirements. Upon Ohio EPA concurrence with this Comprehensive Process Buildings RD/RA Work Plan, PORTS activities related to management and disposition of the existing waste stored at PORTS will be conducted under the requirements of the Waste Disposition ROD and Process Buildings ROD, as applicable. This section provides the design for management and disposition of: (1) existing wastes at PORTS included in the scope of the Process Buildings and Waste Disposition RODs, and (2) waste generated by deactivation activities. Activities described in this section will be conducted in accordance with the ARARs provided in Appendix A. The project-specific details, including design and associated ARARs, for management and disposition of demolition waste will be provided in the respective demolition plans.

The following work categories from the two RODs are addressed in this remedial design:

- Waste packaging
- Recycling/reuse
- Material or waste staging
- Waste certification/verification
- Waste transportation
- Treatment (waste preparation for disposition)
- On-site waste disposal
- Off-site disposition.

Section 5 provides additional information about the waste disposition programs and approaches to be employed.

4.3.1 Waste Packaging

The Process Buildings ROD states: "Once a building or structure is demolished, the waste will either be loaded directly into packages (including trucks) or be staged temporarily prior to being packaged and transported. All packaging will be in compliance with ARARs."

Selection of packaging for waste and materials is dependent on material handling needs; chemical, physical, and radiological characteristics of the waste or material; transportation requirements; WAC; and other considerations. Waste or material intended for disposition off site requires packaging that meets the requirements of Title 49 *CFR* based on the waste or material to be dispositioned. Under Title 49 *CFR*, some materials and wastes may not require additional packaging (e.g., clean metal for recycling may be transported in a dump truck or certain wastes for which the existing condition provides compliant containment may qualify as packaging for transport).

Waste intended for disposal on site will be disposed in bulk, if practical, but conventional packaging may be required during interim management (staging or storage) or disposal, dependent on the characteristics of the waste. Some wastes to be stored prior to on-site disposal may require packaging for storage but may be bulked (unpackaged) to facilitate bulk management before transport to the OSWDF.

Key ARARs that apply to packaging of waste include DOE Manual 435.1-1(IV)(L)(1) (relating to waste management for LLW) and 40 *CFR* 761.65(c)(6) defining container requirements for storage of PCB waste. Packaging for LLW will consider the planned duration of storage and will include venting

if the materials may result in pressure or flammable or explosive gas buildup. All containers used to store PCBs will be nonleaking and chemically compatible with the material being stored.

4.3.2 Recycling/Reuse

Materials of potential economic value to DOE, such as recyclable metals, may be retained to allow recovery or future recycling. If no viable pathway for recovery or reuse is identified, these materials will be disposed on site or off site in compliance with the applicable WAC and applicable requirements. Additional criteria are presented under Section 4.2.2.5, including identification that some recycling will continue to be conducted as a pre-D&D activity.

Key ARARs that apply to recycling/reuse include 40 *CFR* 261.6(a)(3)(ii) and *OAC* 3745-51-06 (A)(3)(b) which exclude certain scrap metal from regulation as solid waste. Off-site recycling will comply with the applicable requirements of 40 *CFR* 300.440.

4.3.3 Material or Waste Staging and Storage

During deactivation, internal structures and equipment may be removed and accumulated within the building/structure in preparation for demolition. The accumulation of bulk LLW for on-site disposal will be confined within the building of generation or building suitable for storage of the waste and managed under appropriate radiological controls. For wastes with regulatory compliance considerations beyond radioactivity (i.e., other regulated hazards), these wastes will be placed in staging or storage locations and will be managed according to their respective hazards and associated requirements (such as double-bagging of friable asbestos). Staging and storage of materials or waste will occur primarily for the following purposes:

- Waste eligible for disposal in the OSWDF has not yet been accepted for disposal at the OSWDF or staging at the IMTA. This includes waste generated prior to OSWDF availability for receiving waste and also includes deactivation waste retained in a building or structure or designated storage area to be included as part of the waste from demolition of the building or structure.

- Waste for off-site disposal or treatment is being accumulated in order to collect sufficient volume for cost-effective transportation, treatment, or disposal or awaiting final characterization or certification or other precursor steps for disposition.

- Materials are being accumulated for recycling or reuse opportunities.

In-process staging also occurs temporarily during waste moves conducted on site, such as when an item is moved between buildings. Waste may be placed temporarily to facilitate material handling or exchange, to schedule pick up, or other similar situations. This type of in-process staging is considered part of the daily operations and not a formal staging or storage activity.

The Process Buildings ROD states that once a building or structure is demolished, the waste will either be loaded into packages (including vehicles transporting the waste to on-site disposal) or will be staged temporarily, including at the location of generation, at the OSWDF (including the IMTA), or at a rail loading station (ROD Section 12.2.1). In application to demolition activities the “location of generation” is broadly interpreted to include areas within the demolition project work area or areas contiguous to the project area, since the intent of staging is to facilitate the project handling, sizing, inspection, load-out, and other activities for the waste and its movement to the OSWDF.

The Process Buildings ROD further states that hazardous and other waste may be accumulated and stored in appropriate storage areas at PORTS consistent with ARARs (ROD Section 13.2.3). This general strategy is employed primarily for deactivation wastes generated for off-site disposition, permitting these wastes to be removed from the location of generation and stored appropriately for the waste type while final characterization, packaging, and transportation preparations are completed; however, some wastes for on-site disposal may also be removed from the building of generation to facilitate demolition, such as wastes that must be managed in a manner different from the bulk debris that will result from demolition of buildings and structures. Management of D&D wastes will also be consistent with the Waste Disposition ROD ARARs.

Deactivation wastes that do not meet OSWDF WAC, such as those being removed specifically to prepare a building or structure to meet the OSWDF WAC upon demolition, and materials to be recycled, will be packaged and managed for off-site disposition and may be moved to other locations for accumulation and storage activities to be conducted in compliance with ARARs, consistent with existing site operations for these types of materials/waste. Storage for these materials and waste is intended to allow suitable volumes to be collected for cost-effective recycling, waste treatment, or waste disposal (as applicable).

Deactivation wastes that meet the OSWDF WAC that are generated prior to the operational period of the OSWDF may be stored as identified in the Process Buildings ROD; specifically, they may be accumulated and stored in appropriate storage areas at PORTS in a manner that is compliant with ARARs. These wastes may also be retained at the location of generation, if storage space is available and suitable. Waste staged or stored for disposal in the OSWDF will be integrated into transportation and disposal activities in a reasonable timeframe after the OSWDF becomes available.

Waste removed from the generating project building/structure will be tracked in the site waste management database to retain applicable information (such as process knowledge, characterization values, and attributes) necessary for compliant management and for WAC compliance. This includes waste destined for off-site treatment and disposal as well as waste removed from the building of generation for storage. Deactivation wastes that will be retained in the area of generation for inclusion as part of the demolition wastes from the building or structure will be tracked in the site waste management database if they are containerized. Other noncontainerized waste disconnected during deactivation and being retained in the building for on-site disposal as part of the demolition waste (e.g., disconnected electric motors, piping, etc.) or as waste streams separate from the demolition waste for disposal in the OSWDF (e.g., stacked transite panels) will be managed as part of the existing building or structure inventory.

Staged and stored materials and waste from deactivation will be managed in compliance with ARARs and the TSCA Compliance Agreement, as applicable, and will be containerized or covered to the extent required or appropriate based on the waste type, contaminant(s), staging/storage location and features, and duration of staging/storage necessary. For example, regulated asbestos waste generated from abatement actions in buildings may be containerized in addition to double-bagging required by *OAC* 3745-20-05, *Standard for asbestos waste handling*, to facilitate handling and storage.

Temporary staging of wastes may also occur as the result of in-process management activities, such as the movement of wastes from the building of generation to a storage, treatment, or disposal location (e.g., OSWDF or IMTA).

Wastes resulting from demolition actions will be managed primarily in bulk during the demolition processes and the follow-on in-process sizing, sorting, material handling, and loading operations

associated with WAC-compliant transport, handling, and disposal at the OSWDF (or movement to the IMTA). In-process waste staging of demolition waste will comply with ARARs. Some demolition wastes will require containerization during staging and transport. Demolition areas are anticipated to use berms or other engineered controls or practices to control run-on and runoff and air emissions. Demolition plans to be submitted at a later date will include plans for these activities.

ARARs that apply are dependent upon the materials or waste being staged or stored. Materials and waste will be managed in compliance with ARARs and will be containerized to the extent necessary, required or, appropriate for the waste type; the location; and the duration of staging or storage. The following examples of staging and storage are provided to illustrate the wide variety of waste and materials management that may be employed and a sampling of ARARs involved:

- Radiologically contaminated equipment removed during deactivation may remain at the project site staged for on-site disposal, but will be managed per DOE Manual 435.1-1(IV)(N)(3), i.e., stored in a location and manner that protects the integrity of the waste for the expected time of storage, which includes consideration for selection of a location away from areas where workers spend extended time periods.

- Category II nonfriable ACM transite panels staged for on-site disposal will be stacked for later movement to the OSWDF. Degraded panels determined to be friable or likely to become friable will be managed as regulated ACM and will be placed in leak-tight containers in compliance with 40 *CFR* 61.150(a) and *OAC* 3745-20-05(B).

- Beryllium-containing dusts (such as from beryllium-contaminated equipment decontamination activities) will be placed in sealed, impermeable bags, containers, or enclosures to prevent the release of beryllium dust during handling and transportation (as required by 10 *CFR* 850.32[b]).

- Universal wastes (such as mercury-containing equipment) staged for off-site recycling will be placed in closed, labeled containers that are structurally sound and adequate to prevent breakage (as required by 40 *CFR* 273.33[c][1] and *OAC* 3745-273-33[C][1]) and will typically be placed in containers acceptable for use as compliant transportation packaging to avoid the need for repackaging for off-site shipment. Per 40 *CFR* 273.35(a) and (b) and *OAC* 3745-273-35(A) and (B), universal waste will not be accumulated for longer than 1 year unless accumulation of such quantities of universal waste is necessary to facilitate proper recovery, treatment, or disposal.

- Circuit boards and other electronic wastes identified as hazardous by toxic characteristic for lead or silver will be staged in containers that comply with the applicable requirements in 40 *CFR* 265.171 through 173 (Subpart I) and *OAC* 3745-66-70 to 3745-66-73 awaiting shipment off site for treatment.

- Used (non-PCB) oils recovered from equipment will be containerized and staged in compliance with oil storage secondary containment requirements and managed in compliance with *OAC* 3745-279-22 (e.g., containers labeled as “used oil” and overpacked or transferred if leaking).

4.3.4 Waste Certification/Verification

Waste being sent for treatment or for disposal is subject to requirements imposed by the receiving site (i.e., WAC). The process of verifying that WAC are met prior to transport of the waste is waste certification, a QA verification process. DOE Order 435.1 requires waste certification for all radioactive waste. For waste to be disposed at the OSWDF, the final waste certification authority is the WAO, a work unit within the prime contractor’s organization operationally independent from the contractor’s

project work units executing the remedial action work (see Section 6.3 of the WAC Implementation Plan). For off-site waste disposition, the waste management program at PORTS performs the verification that receiving facility criteria have been met prior to waste shipment. For radioactive waste being disposed at the DOE NNSS, a dedicated independent waste certification official determines the WAC have been met before the waste can be shipped.

DOE Manual 435.1 1(IV)(J)(2) requirement for waste certification for LLW is a key ARAR. Radioactive wastes, whether destined for on-site or off-site disposition, will be certified to meet the requirements of the receiving facility prior to authorizing transport.

4.3.5 Waste and Materials Transportation

Waste transportation includes on-site and off-site transportation activities to support disposition of materials and waste. Transportation of waste or other hazardous materials off site will be accomplished in compliance with the requirements of 49 *CFR* Subtitle B, Subchapter C, *Hazardous Materials Regulations*, and other transportation regulations. Off-site transportation will be by truck, rail, or a combination of the two.

The most significant portion (by volume or mass) of the waste transportation associated with the implementation of this remedy will be on-site transport to the OSWDF or IMTA. On-site transportation will typically not require compliance with the hazardous materials regulations as defined in 49 *CFR* 171-180 since PORTS is a contiguous site managed by DOE and transportation will be accomplished within the site boundary. However, DOE policy requires adherence to an approved equivalent program that adopts substantive requirements of the regulations. On-site transportation will be made in compliance with a DOE-approved on-site transportation program and the requirements of the WAC Implementation Plan. In addition to providing the details of the WAC for the OSWDF and waste stream segregation and approval processes, the WAC Implementation Plan specifies the means of transport to the OSWDF or IMTA, using dump trucks, flatbed trucks, and roll-off boxes. It also specifies the waste acceptance protocols and processes to be employed.

On-site transportation to the OSWDF will be facilitated through the designation (or construction) and utilization of haul routes for project waste transportation (which may include utilization of site rail infrastructure). Within Perimeter Road, one or more temporary haul routes will be established (see Figure 2 for current conceptual routes) connecting from the project area(s) to the planned primary haul access route for the OSWDF, the IMTA Haul Road (or similar rail access structure). Haul route designation and construction, where necessary, are discussed in Section 4.2.2.2. DOE's preference is for dedicated haul routes, where practical and cost beneficial, to separate heavy truck traffic from site worker and other nonproject traffic. Operation, maintenance, and monitoring required for hauling of waste from the point of generation to the OSWDF will be addressed in OSWDF O&M Plan identified in the Comprehensive OSWDF RD/RA Work Plan.

4.3.6 Treatment (Waste Preparation for Disposition)

Waste materials generated by deactivation may require preparation for disposition, including various processing or treatment steps. Both the Process Buildings ROD and Waste Disposition ROD authorize processing and treatment steps as parts of their remedies. The Process Buildings ROD, Description of the Selected Remedy, includes the following statements:

- "Allows for the disassembly and/or size reduction of the PGE and piping and the removal and treatment (as needed) of the uranium deposits or the recyclable/reusable materials on Site."

- "Provides for the segregation and size reduction, treatment, and packaging of waste streams by waste type, in accordance with ARARs and disposal facility WAC in preparation for disposition."

The Waste Disposition ROD, Description of the Selected Remedy, allows for treatment in three cases, two of which are included in this scope, and includes the following statements:

- "Centralized treatment such as size reduction and decontamination by physical or chemical (washing) processes to allow waste to meet an on-Site or off-Site WAC or recycling and/or reuse requirements. The location of a centralized treatment system can be anywhere on Site, including near the OSDC [OSWDF]."

- "Treatment of any DFF&O waste that may be conducted at an off-Site disposal facility prior to disposal. DOE will obtain the necessary approvals/authorizations, as applicable, and will meet all applicable requirements, including meeting the WAC, for the on-Site disposal of any DFF&O waste which is treated off-Site and returned to DOE for disposal in the OSDC [OSWDF]/CAMU."

Processing (such as segregation or size reduction) or treatment (such as macroencapsulation) of wastes or materials may be necessary to achieve the WAC for on-site or off-site disposition, depending on the characteristics of the waste or material or regulatory categorization. Processing or treatment may be performed on site or off site.

Deactivation waste that requires only additional size reduction processing (i.e. deactivation steps, such as fluid draining, have already been completed) to meet the OSWDF WAC may be relocated for sizing and disposal processing to the X-326 slab, where the necessary configuration includes, but is not limited to, personnel safety features for such work, infrastructure for collecting impacted water for treatment, and where air emissions monitoring for associated air contaminants is being conducted.

In addition, size reduction activities may be performed at the X-747A Material Storage Yard on items with no known loose radiological contamination or PCB contamination. Items with radiological contamination to be size reduced will generally be limited to fixed contamination. Environmental controls will ensure that size reduction activities are compliant with ARARs and mitigate and minimize the spread of contamination and demonstrate that size reduction activities will be protective of human health and the environment. The following controls will be in place:

- Radiological controls will be in place for worker protection, and radiological air monitoring will be in place to detect any contamination that becomes airborne.

- The appropriate Industrial Hygiene monitoring for worker protection will be determined by the Industrial Hygiene organization.

- Particulate air emissions during the size reduction operations will be controlled through the use of dust suppression equipment (e.g. misting).

- High-volume air monitors will be located adjacent to 18th Street on the north side of the X-747A Material Storage Yard and 16th Street to the south side. High-Volume air monitors will monitor for particulate matter and uranium. For work performed at the X-326 slab, air monitoring is already established and will continue to be operated during work and debris staging activities.

- There are four catch basins within the X-747A Material Storage Yard that drain to the X-230J7 East Holding Pond. Inlet protection consistent with the Ohio Department of Natural Resources Rainwater and Land Development Manual will be applied to each of the catch basins to mitigate the discharges of solids and other incidental contaminants such as oil and grease. For work performed at the X-326 slab, impacted water will be collected by existing systems for treatment.

- Steps will be taken to ensure that any equipment, vehicle, or rolling stock are drained of any fluids prior to shearing.

Treatment performed at an off-site location will be accomplished by an appropriately qualified and/or licensed vendor, including 40 CFR 300.440. Waste for off-site disposal that cannot meet transportation requirements without treatment will be processed or treated at PORTS prior to off-site disposition.

For wastes that may be disposed in the OSWDF following treatment to meet ARARs or specified criteria, waste treatment may be performed on site at PORTS or could be performed off site and returned for on-site disposal. On-site processing and treatment may include a wide range of activities, from simple absorption of free liquids to processing to meet RCRA treatment standards. In the event future unanticipated on-site treatment of RCRA hazardous waste is required following concurrence with this work plan, necessary permit information will be provided to Ohio EPA as part of a future design deliverable, if applicable, or as a stand-alone submittal if a design submittal is not relevant, consistent with the approach employed in Section 6.1.4 of this work plan for permits otherwise required. If a centralized treatment facility, as provided for under the Waste Disposition ROD, is needed, a separate design plan would be submitted for Ohio EPA concurrence.

Containerized nuclear material inventories exceeding 20 percent enrichment are prohibited by the Waste Disposition ROD from on-site disposal. Nuclear materials, including those exceeding this enrichment level, may be downblended to reduce enrichment or otherwise managed to address applicable DOE security requirements. Downblending may occur in the X-705 or another suitable location, such as the X-345. Grouting operations associated with downblending are anticipated to be operated in both X-330 and X-333 during deactivation activities in those buildings. Additional information on downblending and grouting is provided in Section 4.2.4.1 and in the Process Buildings Deactivation RD/RA Work Plan, Sections 4.2.2.4 and 4.2.5.2. Grouting as hazardous waste treatment is also discussed in Section 6.1.4.

DOE may also use on-site treatment, such as stabilization processing, as described in Section 4.2.4.1.

Key ARARs include 40 *CFR* 268.45(a) and *OAC* 3745-270-45(A), which provide alternative treatment standards for hazardous debris and soils. CAMU-ineligible debris or soils found to be hazardous, either characteristic or listed, would be eligible for treatment under the alternative standards. An additional key ARAR is DOE Order 458.1(4)(b) and (c), which reflects one of the controls that would apply to the downblending of uranium compounds.

4.3.7 On-site Waste Disposal

Waste hauling, IMTA operations, and waste placement at the OSWDF are not included in the scope of this work plan; however, activities to prepare deactivation waste for acceptance, transport, and disposal are included. Deactivation waste that is eligible for disposal at the OSWDF in compliance with the requirements of the WAC Implementation Plan, including considerations for waste type prohibitions and waste form and size criteria, will be managed to meet applicable administrative requirements for

waste stream documentation, preapproval, and waste certification/verification processes implemented through the WAO.

As an overarching remedy implementation strategy, deactivation activities in each building and structure are designed to remove waste prohibited from disposal in the OSWDF prior to demolition. Waste remaining in buildings and structures following completion of deactivation will meet the acceptance requirements of the OSWDF, once properly sized and packaged, as required in the WAC Implementation Plan.

Inspection and receipt of waste by the OSWDF will be conducted in accordance with the OSWDF WAC Implementation Plan. In the event that noncompliant wastes are found, the waste will be returned to the generating project to address noncompliant content, per the WAC Implementation Plan.

4.3.8 Off-site Disposition

LLW, hazardous waste, waste required to be managed under TSCA, or universal waste generated as a result of the activities conducted under this Comprehensive Process Buildings RD/RA Work Plan that does not meet the OSWDF WAC will be dispositioned off site. The maximum volume of material subject to decomposition is limited at the OSWDF. Decomposable wastes and other wastes requiring special handling for on-site disposal will be managed in accordance with the OSWDF design requirements and may be directed off site in order to optimize on-site disposal operations or optimize on site capacity utilization for specific waste sources or categories. Similarly, timing and logistics considerations may also require that wastes that are otherwise suitable for on-site disposal be sent off site in order to support project execution efficiencies or for the safety of the workforce.

Materials may also be dispositioned off site for recycle and reuse. Recycling or reuse alternatives may include recycling of noncontaminated metals or other materials considered of value to DOE or the Community Reuse Organization. Evaluation of materials for recycling or reuse is a standard part of the waste programs operated by the site prime contractor. Current DOE prohibitions on general release for recycling of radiologically contaminated materials preclude many materials from consideration (see Section 4.2.2.5 for additional details on recycling options).

A wide variety of off-site treatment and disposal options are available to DOE, depending on the nature of the waste. As with on-site disposal, off-site treatment vendors and disposal facilities provide WAC that must be met, which may include waste segregation requirements, size limits, constituent limits, packaging criteria, and administrative requirements. These requirements will be met and verified before wastes are shipped. As identified in Section 4.3.5, all transportation requirements will also be met for off-site shipments.

Wastes generated under this work plan and treated and/or disposed off site will be treated and/or disposed in accordance with 40 *CFR* 300.440. Materials generated under this work scope and deemed acceptable for recycle will be recycled off-site in compliance with applicable rules, including 40 *CFR* 300.440, and in accordance with DOE policies and protocols.

4.4 POSTACTION APPEARANCE AND STATUS

Upon completion of deactivation, deactivated buildings and structures will meet the following standardized demolition readiness conditions: items remaining in the buildings, including the structures, are compliant with the OSWDF WAC Components 1 and 2 to the extent achievable based on the deactivation activities described in Section 4.2, as well as the assumptions made for the CAMU Supplement to the Waste Disposition RI/FS; equipment and materials remaining in the buildings pose

no credible basis under any conditions for a nuclear criticality event (criticality incredible) and meet the OSWDF WAC; utilities have been isolated, except for the storm sewer and limited electrical service; and the building or structure has been secured to prevent unauthorized entry.

4.5 DESIGN CHANGES/FIELD CHANGE NOTICES DURING REMEDIAL ACTION

During remedial action, unforeseen conditions and changes in approaches can lead to major or minor modifications to the work plan. Per Section 3.4.2 of Attachment B of the DFF&O, the following changes require Ohio EPA review and concurrence prior to implementation:

- Those that involve the deletion or addition of a major component of a concurred-with or approved, as applicable, remedy

- Any changes that may result in an increase of the exposure to chemicals of concern and/or risk to human health, safety, or the environment as compared to the remedy performance standards presented in this work plan

- Those that result in a significant delay in the completion of the remedial action

- Any other changes that alter or are outside of the scope or intent of the concurred-with work plan and the remedial design.

The field change notice process will be used to obtain Ohio EPA review and concurrence of any of the aforementioned changes should they occur during implementation of the remedial action. Per the DFF&O, Ohio EPA will be notified of other changes for the remedial action made during construction through the DFF&O Quarterly Progress Reports.

5. WASTE MANAGEMENT AND TRANSPORTATION ACTIVITIES

LLW, hazardous waste, waste required to be managed under TSCA, universal waste, or mixed waste generated as a result of the activities conducted under this Comprehensive Process Buildings RD/RA Work Plan that does not meet the OSWDF WAC will be dispositioned off site. Categories of waste to be dispositioned off site as a result of deactivation activities include, but are not limited to, the following:

- Used oils
- Batteries
- Refrigerants and coolants
- Noninstalled electronic equipment
- Mercury capsules
- Lead
- Light bulbs and lamps, including crushed light bulbs and lamps
- Fuels
- Chemicals (including solvents, acids, and bases)
- Cylinders containing depleted uranium hexafluoride (UF_6) oxides or depleted UF_6 oxides removed from cylinders
- Uranium residues (deposits) removed and containerized from the PGE and piping systems during the building deactivation process, regardless of enrichment
- Barrier material from X-330 and X-333 converters.

As discussed in more detail in other sections of the document, a portion of the waste generated as a result of deactivation will meet the requirements for disposal at the OSWDF and will be staged or stored in compliance with ARARs (see Section 4.3.3) and transported and disposed per ARARs and OSWDF requirements. Deactivation waste that will meet the OSWDF WAC upon sizing and packaging, as necessary, may be retained in the building of generation for disposal as part of the demolition waste or may be disposed as part of the deactivation activities.

As stated in Section 4.3, the project-specific details, including design and associated ARARs, for management, transportation, and disposition of demolition waste will be provided in the respective demolition plans to be submitted for each demolition project.

The volumes of waste dispositioned as a result of deactivation or demolition will be documented in the corresponding FWCR for that project. Volumes of deactivation waste staged at the location of generation for on-site disposal will be dispositioned along with demolition wastes generated from the building and documented as demolition waste in the respective demolition FWCR.

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6. SUPPORT PLANS

This section provides the Regulatory Compliance Plan and Health and Safety Plan for deactivation activities. Requirements for QC and waste management are also provided.

6.1 REGULATORY COMPLIANCE PLAN

The following sections constitute a Regulatory Compliance Plan for the work scope encompassed by this Comprehensive Process Buildings RD/RA Work Plan, including identification of permits that would otherwise be required as specified by the DFF&O. The plan also provides an overview of regulatory elements of concern for the work plan scope, including impacts to existing PORTS permits and agreements and an ARARs crosswalk that describes compliance plans for each ARAR associated with the deactivation remedial action (see Appendix A). ARARs compliance associated with demolition activities will be addressed in the project-specific demolition design submittals. In addition, this Regulatory Compliance Plan provides a section on mitigation measures for impacts to cultural resources and wetlands, which allows the presentation of more detailed information on how some location-specific ARARs will be met. A discussion of green and sustainable work practices is also presented. Finally, a brief discussion about the PORTS AOC as defined in the CAMU Supplement to the Waste Disposition RI/FS is included as it is related to management of any soil excavated as part of this scope of work.

Should other activities be identified as necessary to support this action, impacts to the ARARs, ARARs compliance, and environmental permits will be evaluated. A field change notice, as described in Section 4.5, will be submitted to Ohio EPA for appropriate concurrence if such activities require changes to this Regulatory Compliance Plan (e.g., changes to permit information or addition of ARARs from the list presented in Appendix A).

6.1.1 Compliance with ARARs Approach

In accordance with the requirements of the DFF&O and pursuant to Ohio's laws and regulations, on-site remedial actions are required to comply with ARARs unless waived in accordance with the DFF&O. The ARARs include only federal and state environmental or facility siting laws/regulations; they do not include occupational safety or worker radiation protection requirements. Additionally, per the DFF&O and 40 *CFR* 300.400(g)(3), other advisories, criteria, or guidance may be considered in determining remedies (TBCs).

The ARARs/TBCs listed in Appendix A of this work plan are those ARARs presented in the Process Buildings ROD and the Waste Disposition ROD that are pertinent to the scope of activities encompassed by this work plan. TBCs will be met with the same degree of rigor as an ARAR. Not all ARARs/TBCs will apply to all remedial activities. The crosswalk in Appendix A includes a compliance approach for each requirement applicable to the deactivation remedial action.

6.1.2 Cultural Resources and Mitigation of Impacts

This section describes the mitigation measures being conducted with respect to the scope of work described in this work plan. The following mitigation activities will be performed to document and comprehensively interpret the DOE-built environment at PORTS:

- Collection and evaluation of items recovered from PORTS buildings and structures for potential future display by DOE or others.

- A Comprehensive Summary Report (Fluor-BWXT Portsmouth LLC [FBP] 2014) summarizing all National Historic Preservation Act of 1966-related studies (prehistoric, historic-era, and DOE-era) has been completed and provides a better understanding of the breadth of history at PORTS.

- Taking of panoramic photographs at regular intervals during and after demolition to be archived with panoramic photos that were taken during plant construction.

- A Historic Context Report (DOE 2017d) has been completed and provides a detailed description of PORTS Cold War-era core processing buildings and structures.

- DOE has developed the PORTS Virtual Museum. The Virtual Museum was released to the public in January 2012. The Virtual Museum is a website designed to provide a detailed historic description of the PORTS site with photos, video, and anecdotal information from employees and retirees. The virtual museum documents specific information about the PORTS buildings and structures. DOE continues to update the Virtual Museum on a regular basis. The Virtual Museum is accessible at the following link: http://www.portsvirtualmuseum.org.

- Public outreach to local school districts and others are ongoing and will continue until the DOE-Environmental Management mission is complete at PORTS. Outreach includes both active and passive measures, ranging from presentations to the provision of items for display and the publication of documents and updates about the site for members of the public.

6.1.3 Impacts to Current Permits and Agreements

Each area is addressed in relation to the deactivation design submitted with this plan and anticipated approach for demolition. Impacts to current permits and agreements not identified in this section will be addressed in the project-specific demolition plan or submitted as a stand-alone document.

6.1.3.1 TSCA Compliance Agreement

Activities under this work scope (deactivation and demolition) will be conducted in compliance with the TSCA Compliance Agreement, any superseding version of this agreement, and any alternate approaches approved by EPA. This agreement includes compliance measures for the management, storage, and disposal of PCB wastes and certain other measures, including air sampling and spill cleanup in a specific subset of PORTS buildings and structures. Air sampling will continue as required by the TSCA Compliance Agreement.

PCB spill provisions will continue to be implemented throughout the deactivation effort in accordance with the TSCA Compliance Agreement, as applicable.

6.1.3.2 National Pollutant Discharge Elimination System Permit

Most deactivation activities under the scope of this work plan will not have an impact on NPDES compliance, nor will an NPDES permit modification be required. Wastewater sources from the buildings, such as storm water runoff, will not be disconnected during deactivation. Modification, removal, or replacement of buildings, structures, and infrastructure included in the NPDES permit will require appropriate modification of the permit. Other deactivation activities will be conducted in accordance with the NPDES permit or appropriate modifications sought. Treatment systems installed for NPDES compliance purposes may be removed once the source of contaminated wastewater has been eliminated or the source rerouted to other appropriate treatment systems.

During demolition, above-grade structures removal may be completed within a bermed area to collect project runoff and direct it to impacted water treatment. Design of berms (or other methods to manage impacted project water), related collection systems, and methods to protect subgrade structures (such as tunnels) from rainwater and impacted waste intrusion will be included in demolition plans, as applicable to specific buildings and structures. Any impacts to the PORTS NPDES permit would be addressed in a treatment process design submittal.

6.1.3.3 Title V Permit

Air sources managed under Title V will primarily be impacted by deactivation activities, resulting in their removal. As these sources are removed from service, the profile for PORTS in Ohio EPA's "eBusiness Center" Air Services database will be updated to reflect their removal.

6.1.3.4 RCRA Part B Permit

RCRA Part B permitted storage areas will be closed in accordance with the closure requirements in the Part B permit. Closure of RCRA Part B permitted storage areas is not being conducted under this work plan.

6.1.3.5 Wetlands

As identified in Section 2.1.2, approximately 3 acres of wetlands will potentially be impacted by the implementation of the remedial actions identified, including equipment operation and material staging. In actual execution, deactivation and demolition activities will be designed to avoid or minimize impacts to wetlands where possible, pursuant to the Process Buildings ROD. Erosion and sediment controls will be implemented in accordance with ARARs to minimize or mitigate indirect impacts to these natural resources.

A comprehensive wetlands and stream mitigation plan addressing impacts associated with planned deactivation, demolition, waste disposition, and site restoration actions at PORTS is under development. Since deactivation, demolition, waste disposition, and site restoration activities will be implemented in phases over many years, actual wetland impacts could differ from those anticipated. If unanticipated wetland and stream impacts occur during the implementation of deactivation, demolition, waste disposition, and site restoration actions at PORTS, DOE will work with Ohio EPA to quantify any new impacts and adjust mitigation plans accordingly.

6.1.4 Identification of Permits Otherwise Required

In accordance with DFF&O Section V(9), no federal, state, or local permits are required for remedial actions conducted entirely on site. Where permits would otherwise have been required, Attachment B of the DFF&O provides additional delineation of responsibilities: "When DOE proposes a response action regulated under CERCLA that, in the absence of CERCLA section 121(e)(1) and the NCP, would require a federal or State permit, DOE shall include in the submittal:

a) Identification of each permit that would otherwise be required.

b) Identification of the substantive standards, requirements, criteria, or limitations which would have had to have been met to obtain each such permit.

c) Explanation of how the response action proposed will meet the standards, requirements, criteria, or limitations identified in subparagraph b immediately above."

The process for identifying permits otherwise required includes the following steps:

- Identify Sources. Identify the new sources needed to support deactivation/demolition. New sources can include actual new sources of air or wastewater emissions, or increased emissions from existing sources or new and different pollutants discharged from existing sources.

- Perform Calculations. Perform calculations to quantify the pollutants expected to be discharged.

- Compare to Regulations. Compare calculated results to regulations to determine whether or not they would otherwise trigger permit requirements.

- Evaluate Permit Requirements. If calculated results would otherwise trigger permit requirements, then determine the necessary controls required to meet the substantive requirements.

Table 4 identifies on-site work activities addressed in this work plan that would otherwise have required a permit, identifies substantive requirements from the associated ARARs, and identifies the actions being taken to meet the substantive requirements. Each entry in the table refers to a corresponding subsection of additional explanatory text below that includes background information and additional explanation of the process to be employed. If additional work under this work plan is identified that would have otherwise required a permit, based on the process identified above, permit otherwise required information will be submitted as part of a related future design deliverable or as a stand-alone submittal.

6.1.4.1 UST out-of-service permit

The deactivation of equipment (e.g., emergency generators) supplied by USTs will trigger permitting actions pursuant to *OAC* 1301:7-9-10 involving an out-of-service permit.

6.1.4.2 Permit for removal of a UST

The permanent removal of a UST, UST piping, or UST containment components would otherwise require the prior issuance of a permit pursuant to *OAC* 1301:7-9-10.

6.1.4.3 General Permit for Construction Activity

Construction activities disturbing 1 or more acres of total land, or that are part of an overall activity disturbing 1 or more acres of total land, are eligible for coverage under Ohio EPA's General Permit for Construction Activity.

6.1.4.4 Bulb and lamp crusher air permit

Segregatable lamps and bulbs will be removed from buildings and structures under Section 4.2.4.2 and ARARs Table A.2. For radiological buildings/structures, management of lamps and bulbs may utilize a bulb and lamp crusher to provide flexibility of management in consideration of the resources required to perform radiological survey to release for recycle. Bulbs generated from radiological buildings/structures will be managed as hazardous waste from the point of generation to the point of crushing and will be dispositioned off site.

The bulb and lamp crusher will be a commercially available unit equipped with emission controls for mercury and particulate. The unit will be able to be affixed to a standard 55-gal drum. Manufacturer's information for a typical unit is included in Appendix C.

Table 4. Permit Otherwise Required Information

Permit Otherwise Required	Substantive Requirements to Obtain the Permit	Action to Meet the Substantive Requirements
UST Out-of-service Permit (see Section 6.1.4.1)	• Remove the contents of the UST such that there is no more than 1 in. of residue or 0.3 percent by volume of the total capacity of the UST system. • Ensure all vent lines remain open and functioning. • Cap and secure all other lines, pumps, manways, and ancillary equipment.	• These substantive requirements of an out-of-service permit will be met by the actions in this work plan (Section 4.2.5.2).
Permit for Removal of a UST (see Section 6.1.4.2)	• Remove all portions of the UST system from the ground • Clean and remove the UST system according to all of the following applicable standards: o API Recommended Practice 1604-01: Closure of Underground Petroleum Storage Tanks o API Publication 2015-2001: Safe Entry and Cleaning Petroleum Storage Tanks o National Institute for Occupational Safety and Health: Criteria for a Recommended Standard for Working in Confined Space. • Once empty and clean, monitor the UST system to ensure that explosive vapors do not accumulate above a level that creates a hazardous or unsafe condition. • Ensure that the UST is free of residue and liquid, is rendered unusable, and is free of explosive vapors before the UST leaves the site; no UST may be reused for any purpose unless prior written approval is obtained from the State Fire Marshal. • Remove all backfill from the tank cavity excavation, piping trenches, and dispensing unit areas; handle according to PCS rules *OAC* 1301:7-9-16 and 17; (see Table 4.2 - Re-Use Action Levels). • Remove no more than one foot of native soil from the sidewalls, bottom of the tank cavity excavation, piping trenches, and dispensing unit areas. • Perform a closure assessment per *OAC* 1301: 7-9-12(I).	• Completion of a closure assessment and removal of the tank and piping systems in accordance with the ARARs included in this work plan. The closure assessment will require the removal of all material from the UST, inspection of the excavation cavity, proper management of accumulated wastewater, and soil sampling as required for the purposes of comparison to action levels, which will either demonstrate no further action required or additional investigation and remediation required.

Table 4. Permit Otherwise Required Information (Continued)

Permit Otherwise Required	Substantive Requirements to Obtain the Permit	Action to Meet the Substantive Requirements
General Permit for Construction Activity (see Section 6.1.4.3)	• Discharges must be composed entirely of storm water. • Design, install, and maintain effective E&S control to minimize discharge of pollutants. These controls are to minimize erosion, minimize the amount of soil exposed during construction, minimize disturbance of steep slopes, minimize sediment discharges, preserve topsoil where feasible, and provide temporary and permanent soil stabilization. • Dewatering activities related to trenches and excavation must be managed by appropriate controls. • Sediment control structures shall be functional throughout the course of earth-disturbing activities and altered as appropriate to address changing drainage patterns. • E&S controls shall be based on the most current editions of the ODNR Rainwater and Land Development Manual.	• Use erosion control practices (e.g., temporary seeding, mulching, permanent seeding, temporary rolled erosion control products, flexible growth medium, silt fencing, inlet protection, filter socks, compost berm) during grubbing and earth disturbing activities, designed in accordance with the standards provided in the Ohio Manual.
	• Design, install, and implement pollution prevention measures to minimize the discharge of pollutants from vehicle washing and minimize the exposure of precipitation to building materials, products, construction wastes, trash, landscape materials, and chemicals.	• Collect non-storm-water effluents or verify they comply with NPDES permit discharge limits.
	• Discharge of hazardous substances in the storm water discharge(s) from a construction site must be minimized.	• Implement chemical spill and leak procedures.
	• Prohibited discharges include washout of concrete (unless controlled), fuels, oils, and other pollutants used in vehicle and equipment operation and maintenance, and soaps and solvents in vehicle and equipment washing.	• Collect non-storm-water effluents or verify they comply with NPDES permit discharge limits.
Bulb and lamp crusher air permit (see Section 6.1.4.4)	• As a fugitive emission, the bulb crusher would be subject to reasonably available control technology and the more stringent of the following standards: o no visible emissions (EPA Method 9) or o 0.030 grain of particulate emissions per dry standard cubic ft of exhaust gasses.	• The unit will be equipped with high-efficiency particulate air filtration. Periodic observations will be made of the unit. If visible emissions are noted inside of the building, qualified personnel will perform an EPA Method 9 reading at the nearest building egress point.

Table 4. Permit Otherwise Required Information (Continued)

Permit Otherwise Required	Substantive Requirements to Obtain the Permit	Action to Meet the Substantive Requirements
Bulb and lamp crusher treatment permit (see Section 6.1.4.5)	• Generator Standards (*OAC* 3745-52) • General Facility Standards for New Facilities (*OAC* 3745-54) • Use and Management of Containers (*OAC* 3745-55).	• Conduct bulb crushing and resulting waste management in accordance with the ARARs included in this work plan. (Appendix A) which includes waste characterization, the use of proper containers, configuration of the area to protect it from precipitation, the use of trained and qualified operators, and the availability of communication equipment for emergency response purposes. The resultant waste will be manifested and shipped to a TSD facility for further treatment and disposal.
	• Waste analysis plan (*OAC* 3745-270-07[A][5]).	• A waste analysis plan will be developed to ensure the proper waste codes are applied. It is assumed that the crushed bulbs will be hazardous for lead (D008) and mercury (D009).
Grouting treatment permit (see Section 6.1.4.6)	• Generator Standards (*OAC* 3745-52) • General Facility Standards for New Facilities (*OAC* 3745-54) • Use and Management of Containers (*OAC* 3745-55) • Treatment standards for waste not requiring a specific treatment technology (*OAC* 3745-270-48).	• Conduct grouting of hazardous waste and resulting waste management in accordance with the ARARs included in this work plan (Appendix A), which includes waste characterization, the use of proper containers, configuration of the area to protect it from precipitation, the use of trained and qualified operators, and the availability of communication equipment for emergency response purposes. The resultant treated waste will be manifested and shipped to a TSD facility for disposal. The operation involves the preparation of the grout material and the addition of the materials to be grouted into a grout material of acceptable consistency. All operations are controlled with HEPA filtration.
	• Waste analysis plan (*OAC* 3745-270-07[A][5]).	• A waste analysis plan will be developed specific to the waste stream being grouted to demonstrate compliance with applicable treatment standards based on the characterization of the materials being grouted.

Table 4. Permit Otherwise Required Information (Continued)

Permit Otherwise Required	Substantive Requirements to Obtain the Permit	Action to Meet the Substantive Requirements
Grouting treatment permit (see Section 6.1.4.6) (continued)	• Immobilization treatment standard (*OAC* 3745-270-45), for waste meeting the definition of debris.	• Wastes that contain or are otherwise mixed with deposit material and meet the definition of debris will be grouted to meet the immobilization technology standard. Deposits that are grouted will be disposed off site as LLW. Debris that is grouted will be disposed off site as mixed LLW.
Fluorine treatment permit (see Section 6.1.4.7)	• Generator Standards (*OAC* 3745-52) • General Facility Standards for New Facilities (*OAC* 3745-54) • Use and Management of Containers (*OAC* 3745-55) • Specified treatment technology standards (*OAC* 3745-270-40 and *OAC* 3745-270-42).	• Conduct fluorine treatment and resulting waste management in accordance with the ARARs included in this work plan (Appendix A).
	• Waste analysis plan (*OAC* 3745-270-07[A][5]).	• A waste analysis plan will be developed to demonstrate compliance with applicable treatment standards based on the characterization of the materials, including evaluation of final waste products.
Fluorine treatment air permit to install (see Section 6.1.4.8)	• The source complies with all applicable emission limits and will not adversely affect public health, safety, or the environment or cause odors or other nuisances.	• The fluorine gas is not radiologically contaminated. An evaluation of air emissions will be conducted once the treatment process is determined and finalized.

API = American Petroleum Institute
ARAR = applicable or relevant and appropriate requirement
E&S = Erosion and Sediment
EPA = U.S. Environmental Protection Agency
HEPA = high-efficiency particulate air
LLW = low-level (radioactive) waste
NPDES = National Pollutant Discharge Elimination System
OAC = Ohio Administrative Code
ODNR = Ohio Department of Natural Resources
TSD = treatment, storage, disposal
UST = underground storage tank

Based on a potential throughput of 30 lamps/minute, DOE has determined that an air permit to install and operate would otherwise be required based on the potential to emit particulate matter in excess of 10 lb/day (706 lb/day based on maximum throughput of 30 lamps per minute for 1,440 minutes/day). Mercury emissions under the worst case scenario would not exceed the de-minimus emissions established for hazardous air pollutants at *OAC* 3745-15-05(C)(5). Radionuclide emissions will meet protectiveness of employees at the source and will be monitored through existing programs and procedures to control contamination to mitigate the spread of contamination. The emissions will be discharged within the building and as such are considered a fugitive source. Fugitive sources are monitored through the PORTS ambient air monitoring network in compliance with National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart H. Fugitive source emissions and the associated dose assessment are reported in the Annual NESHAP Radionuclide Emission Report.

6.1.4.5 Bulb and lamp crusher treatment permit

Lamps and bulbs are currently handled as universal waste and are covered under Section 4.2.4.2 *Universal Waste* and ARARs Table A.2. The purpose for a bulb and lamp crusher is to provide flexibility

for bulb and lamp management in consideration of the resources required to perform radiological survey to release for recycle.

Bulb and lamp crushing constitutes hazardous waste treatment in the State of Ohio, therefore DOE has concluded that a RCRA hazardous waste treatment, storage, and disposal (TSD) permit would otherwise be required. However, the scope of bulb and lamp crushing conducted on-site relates to the management of the accumulation of the crushed bulb and lamp material which is assumed to be a characteristically hazardous waste for toxicity for lead (D008), mercury (D009), barium (D005), and cadmium (D006) based on the type of lamp or bulb crushed (fluorescent or incandescent). Collected drums of the crushed material would be shipped off-site to a permitted TSD facility for treatment and disposal.

6.1.4.6 Grouting waste treatment permit

Deposits and debris that are characterized as hazardous may be grouted using an existing grouting system located in the X-345 building. The grouting of materials characterized as hazardous waste constitutes hazardous waste treatment in the State of Ohio. The scope of the grouting operation conducted on site relates to the mixing of grout material with other materials, such as radiological holdup materials (deposits) or recovered process gas removal media, sampling the resultant mixture to ensure treatment standards are met, and accumulation of containers of the solidified mixture for disposal. The existing system was initially installed to grout accountable materials for which safeguards and security were applied. Deposit materials that are grouted will be disposed off site as LLW. Debris that is grouted will be disposed off site as mixed LLW.

Where wastes to be grouted meet the definition of debris, they will be grouted to meet the immobilization technology standard in *OAC* 3745-270-45, otherwise they will meet treatment standards of *OAC* 3745-270-48.

The process involves moving the wastes to be grouted into the X-345 building and into a staging/storage area appropriately constructed for the storage of hazardous waste pursuant to ARARs. One empty 55-gal drum will be put into position under a high-efficiency particulate air drum ring that will be used to catch fugitive particulates. Grout will be mixed in an electric powered grout mixer located in the vehicle trap area. Once the grout is the proper consistency, it will be pumped through hoses attached with cam-lock fittings into the grouting station. A small amount of grout will be pumped into the receiving drum and then the waste material will be added from the waste container. The drum will then continue to be filled with a predesignated amount of grout. An electric hand-held mixer with a mixing paddle will be placed in the drum and operated to ensure that an even mixture is achieved. A building layout and process description are included in Appendix D.

6.1.4.7 Fluorine waste treatment permit

Fluorine was used in processes related to uranium enrichment at PORTS, and excess inventories and quantities in pipelines and equipment are considered hazardous waste under RCRA (hazardous waste code P056, as defined in *OAC* 3745-51-33). It is anticipated that the current inventory of approximately 285 lb of fluorine gas in three storage tanks in the X-342B will need to be processed and treated when it is assured that this gas will no longer be needed. Processing/neutralization would constitute treatment. The exact processes to be used for this treatment have yet to be specified. However, the treatment will meet the technology-specific treatment standard specified for fluorine in *OAC* 3745-270-40 for nonwastewaters (ADGAS followed by NEUTR), as further described in *OAC* 3745-270-42. Appropriate and pertinent treatment information will be provided to Ohio EPA through a field change notice FCN once the treatment process has been determined and finalized.

6.1.4.8 Fluorine waste treatment air permit

Fluorine treatment will be a short-term temporary processing activity, but process equipment is expected to have the potential to emit greater than 10 lb/day in air emissions based on desired throughput, exceeding the de minimis permit exemption threshold identified in *OAC* 3745-15-05; therefore, an air permit to install is included as a permit otherwise required. The projected quantity of CF_4 that will be generated during the treatment of the fluorine is 350 lb. Carbon tetrafluoride is not a criteria air pollutant (*OAC* 3745-31-01) nor is it a hazardous air pollutant (Section 112 of the Clean Air Act).

6.1.5 Green and Sustainable Work Practices

Sustainable practices that enhance environmental, energy, and transportation management performance are implemented at PORTS. The following scope of work activities are considered to support the stated mission of this program:

- Allowing auxiliary equipment and piping eligible for the OSWDF to remain on site for disposal, reducing transportation requirements.

- Recycling of materials removed from the building or structure, where cost beneficial and in compliance with 40 *CFR* 300.440 and DOE policies and requirements.

- Implementation of sound waste minimization and pollution prevention practices.

- Optimizing the amount of water used for fugitive dust control.

- Considering the use of biodiesel in heavy equipment.

In addition, language will be placed in subcontracts encouraging the use of recycled products, energy-efficient trailers and equipment, and other green and sustainable practices.

6.1.6 Spill Response

This scope of work is being conducted as a remedial action under the DFF&O. Waste generated as a result of spills of hazardous waste and solid waste that occur while conducting this scope of work are considered D&D waste for disposition purposes.

Spill kits will be maintained at the buildings and structures. Additionally, PORTS maintains an adequate supply of spill control equipment to respond to spills at the plant. Other spill response equipment is maintained throughout the site where response personnel can promptly access them. Materials maintained at the buildings and structures include booms, absorbent materials, spill pads, socks, gloves, tools, etc. The PORTS Fire Department in X-1007 is operational 24 hours per day, maintains a spill response trailer, and is capable of responding to emergencies at PORTS.

Spills and releases that may occur during implementation of this action will be responded to immediately and recovered material dispositioned in accordance with ARARs as identified in Appendix A. For clarity in planning response actions, DOE considers the following three spill classifications: incidental, minor, and significant. Responses to these spills are further described below.

A spill of hazardous substances of less than 1 gal is considered an incidental spill. These spills will be cleaned up and managed as appropriate but will not entail any special notifications or location tracking. Examples of these types of spills are leaks/releases of less than 1 gal from heavy equipment.

A spill of a hazardous substance to environmental media of greater than 1 gal, or any spill of hazardous waste regardless of volume (except spills of hazardous waste meeting the definition of a significant spill or release), is considered a minor spill. Minor spills contained within the project area will be cleaned up and managed primarily by project personnel with the appropriate regulatory and waste management support. Minor spills will be reported to Emergency Management and/or the Plant Shift Superintendent. Ohio EPA will be notified by documenting the spill in the FWCR, and the spill locations will be identified using Geographic Information System equipment. The FWCR discussed in Section 7.3.2 will document the material spilled; the date, time and location of the spill; the actions taken to remove the spill; and disposition of the waste generated. DOE will ensure adequate excavation is completed in the spill area (i.e., the spill area will be overexcavated).

A significant spill or release infers that there are serious consequences to human health or the environment requiring immediate and coordinated spill response. Ohio EPA will be promptly informed of any significant spills, including significant spills of any legally reportable quantity of any particular substance. For the purposes related to the scope of this project, the definition of a significant spill or release includes the following examples:

- A fire that causes the release of toxic fumes
- A fire that spreads, possibly igniting materials at other locations or causing heat-induced explosions
- The spill that results in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard
- The spill that cannot be contained on PORTS, resulting in off-PORTS soil contamination and/or groundwater or surface water pollution
- A release into the environment of a petroleum product with the potential for impacting streams by causing a sheen, or a significant quantity of oil (i.e., 25 gal or greater) that has reached or can potentially reach beyond the project boundary.

The Plant Shift Superintendent is delegated the responsibility by PORTS management to supervise site emergency response activities, including responses to significant spills and releases. The Plant Shift Superintendent is authorized to make protective action recommendations for both on-site personnel and off-site populations in the case of a significant release.

PORTS emergency protocols and other regulatory-required spill response plans (e.g., RCRA, Contingency Plan or PORTS Spill Prevention Control and Countermeasures Plan) will be consulted and utilized as appropriate, or as required.

6.1.7 Designation of AOC and CAMUs

In Appendix B of the Waste Disposition ROD, a portion of the PORTS site has been identified as an AOC. The AOC boundary is identified in the ROD and encompasses much of the PORTS site, including most of the area within Perimeter Road. Per the CAMU Supplement to the Waste Disposition RI/FS, “Using the AOC would allow for the unencumbered movement of D&D wastes, waste not within DFF&O (non-DFF&O waste), and other remediation waste within the confines of the AOC, without triggering the generation of hazardous waste that would result in the need for additional handling requirements to be implemented.”

In addition to the AOC designation, the Waste Disposition ROD designates the OSWDF as a TSD CAMU and the IMTA as a treatment and storage CAMU. While the AOC and CAMU allow for movement of the waste without implementing placement under land disposal requirements, a treatment level for TCE (the sole identified PHC) was identified by Ohio EPA and DOE and became part of the OSWDF WAC. CAMU-eligible waste contaminated with TCE will be disposed on site in accordance with the WAC Implementation Plan.

Detailed information about the CAMU designation and identification of the AOC is provided in the CAMU Supplement to the Waste Disposition RI/FS.

6.1.8 National Emission Standards for Hazardous Air Pollutants

Deactivation activities will not lead to an increase of radionuclide emissions; therefore, additional modeling for National Emission Standards for Hazardous Air Pollutants compliance will not be required. Where air emissions sources exist, deactivation activities (rather than demolition activities) are expected to result in their removal. When sources are removed from service, monitoring and other functions will no longer be required. Appropriate notifications will be made once the sources are removed from service and continuous monitoring has been eliminated.

Potential airborne radionuclide emissions from demolition activities will be evaluated after building deactivation is complete and before demolition per 40 *CFR* 61.92 to ensure that no member of the public receives an effective dose equivalent greater than 10 mrem per year. These evaluations will be included in the future demolition plans as well as any controls necessitated by these evaluations.

6.2 ENVIRONMENT, HEALTH, AND SAFETY PLAN

DOE places the health and safety of personnel performing work at PORTS above all other goals. The goal is zero accidents and injuries. This goal is supported by implementation of an Integrated Safety Management System (ISMS) for work at PORTS. One of the central themes of ISMS is evaluation of all work to identify potential hazards to the workforce. Hazards are eliminated or controlled or the work is not to be performed. Preference is given to the control of hazards through implementation of engineering and/or administrative controls rather than reliance only on the use of PPE to control hazards. Implementation of ISMS will occur throughout the work activities as a fundamental tool to ensure safety for the workforce.

Workforce safety goals are implemented by the prime contractor through workforce training and the implementation of health and safety requirements in procedures. Health and safety practices are based on the *Worker Safety and Health Program* (FBP 2016), which implements job hazard analysis during the planning of work activities, to identify and mitigate hazards in advance of work authorization. Subcontractors are required to adhere to the *Worker Safety and Health Program* or submit an equivalent for approval by the DOE prime contractor (currently FBP).

Deactivation and demolition activities involve radiological, chemical, and mechanical/physical hazards. Radiological controls, industrial hygiene, and industrial safety are integrated into daily work practices and controls are customized for the specific work being conducted. The health and safety controls will differ based upon the nature and concentration of contaminants and potential exposure modes from the work. Prework surveys are performed when contaminants are potentially present at hazardous levels to provide information for establishing controls and monitoring requirements.

Monitoring performed during implementation of this scope of work will include air/radiological and industrial hygiene monitoring for worker protection, as applicable. Monitoring is performed near

contaminant dispersing activities (such as a cutting operation on equipment) and for ambient/background conditions when the overall work environment has the potential for airborne hazards.

The risk from slips, trips, and falls resulting from working on uneven ground or equipment-related accidents is also always present. Daily reminders during the prejob Safety Task Assignments briefings and inclusion of the risk mitigation methods into work assignments are used to control these risks. Housekeeping emphasis will also be a constant project focal area to further reduce the potential for these types of accidents.

6.3 QUALITY ASSURANCE

Quality measures will be implemented during sampling, analysis, and data management to ensure that the resulting data is of known and defensible quality. Sampling to support this remedial action will adhere to the requirements of the SADQ.

Throughout the implementation of actions under the scope of this Comprehensive Process Buildings RD/RA Work Plan, existing PORTS-specific QA program requirements (compliant with DOE Order 414.1D, *Quality Assurance*, and the American Society of Mechanical Engineers *Quality Assurance Requirements for Nuclear Facility Operations*, NQA-1) will be applied to ensure that the appropriate level of rigor, review, and independent evaluation are employed.

In the event of the need to construct significant remedy elements in support of demolition activities, associated construction QA components will be included in a project-specific design plan in accordance with DFF&O Task IV requirements.

For waste eligible for on-site disposal, additional QA elements are provided through the WAO. The WAO, which is an organization independent from site project organizations, will provide oversight and independent review throughout the waste planning, generation, transport, and waste acceptance processes, as defined in the WAC Implementation Plan. During waste planning, the WAO is available to provide waste generators with a better understanding of the forms and process that the generator must complete to document the waste and its characterization. In the course of reviewing the submitted waste characterization forms and supporting information and data, the WAO has the authority to reject the document and require additional data collection, which may include sample collection and analysis, to demonstrate compliance with the requirements of the OSWDF WAC and WAC Implementation Plan. During waste generation, transport, and acceptance, the WAO reviews waste and tracking forms and completes independent visual inspections of waste being loaded and unloaded. The WAO will also participate in deactivation project walkdowns as an independent verifier.

6.4 WASTE MANAGEMENT AND TRANSPORTATION

Waste management and transportation activities are addressed in Section 5 and specific remedial design elements implementing waste management and transportation are provided in Section 4.3. The handling, storage, transportation, and disposal of waste will be conducted in accordance with the ARARs presented in Appendix A for on-site activities and in accordance with applicable regulations for off-site activities.

Sitewide waste management processes (including the WAO for waste destined for OSWDF disposal) ensure that waste generator responsibilities are met for adequate characterization of waste in accordance with ARARs (or applicable regulations and orders for waste leaving the site). PORTS has established programmatic and procedural documents specifying protocols for characterization, packaging, storage and inspection, and transport of waste. Project-specific waste management practices achieve similar objectives whether the waste will be dispositioned off site or on site. Characterization of waste is

documented and maintained along with required shipping papers and declarations to preserve a complete record for the waste stream.

Personnel from the site Waste Management program manage waste for off-site disposition once waste generators provide necessary characterization information and complete containerization of the waste. Waste Management maintains interfaces with off-site treatment and disposal vendors, completes necessary vendor profiles, and ensures that the waste is properly transported and disposed. The Waste Management program ensures independent certification for all waste to be shipped off site, thus ensuring that the waste generated by the project is compliantly managed, transported, and disposed.

The requirements for waste acceptance, on-site transport, and disposal of waste are identified in the WAC Implementation Plan. The requirements for waste management operations in support of on-site disposal are also incorporated in site operating procedures.

6.5 SAMPLING PLAN

The DFF&O requires development and submittal of sampling plans for Ohio EPA review and concurrence when samples are needed for remedy level design, remedy verification, and five-year review, including:

- Sampling necessary to complete predesign studies supporting remedial design
- Sampling for on-site hazardous waste treatment to demonstrate compliance with alternate treatment standards
- Sampling for waste streams to demonstrate compliance with CAMU adjusted treatment standards for TCE (the only identified PHC)
- Sampling conducted as part of a performance standard verification plan
- Sampling conducted as a part of a five-year review work plan.

Routine sampling activities will occur throughout deactivation, such as sampling performed to finalize waste characterization, sampling associated with existing environmental permits, or to provide data for safe and compliant work performance. DOE does not believe that these operational types of sampling activities will require prior Ohio EPA review for concurrence, although results from these types of sampling activities will be made available on request. Characterization activities for buildings and structures, which will ultimately become demolition waste for on-site disposal, are similar to other waste disposition characterization activities being performed, such as characterization of containerized waste for off-site disposition. These characterization activities are planned and implemented consistent with the requirements of the SADQ. No new sampling plans that require Ohio EPA concurrence have been identified for implementation of the deactivation design presented in this work plan. In the event that sampling activities that require Ohio EPA concurrence are needed in the future to support activities under this work plan, a SAP will be submitted or included in an associated design submittal, as applicable.

Preparation of SAPs for Ohio EPA review and concurrence may be required for sampling in support of remedy design (such as described above), associated performance standard verification, and five-year reviews. When applicable, SAPs will be included with associated design submittals and will be identified as needed in support of five-year reviews in the Five-year Review Work Plan required by the DFF&O.

If sampling that is subject to Ohio EPA review and concurrence is required as part of planned actions, a sampling plan, including information required in Section 4.2 of Attachment B to the DFF&O and adhering to the requirements of the SADQ, will be transmitted.

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7. PROJECT ORGANIZATION, COST, AND SCHEDULE

This section discusses the organization that will be used to implement this project, along with a cost estimate, key schedule components, and associated milestones, as required under the DFF&O.

7.1 ORGANIZATION

DOE and its contractors will ensure that each RD/RA activity (such as deactivation, demolition, site restoration, and waste management) is appropriately staffed with qualified personnel or contractors with appropriate experience and expertise to complete the task in compliance with the applicable requirements and safety and quality objectives. The project organization for this work scope is shown in Figure 6.

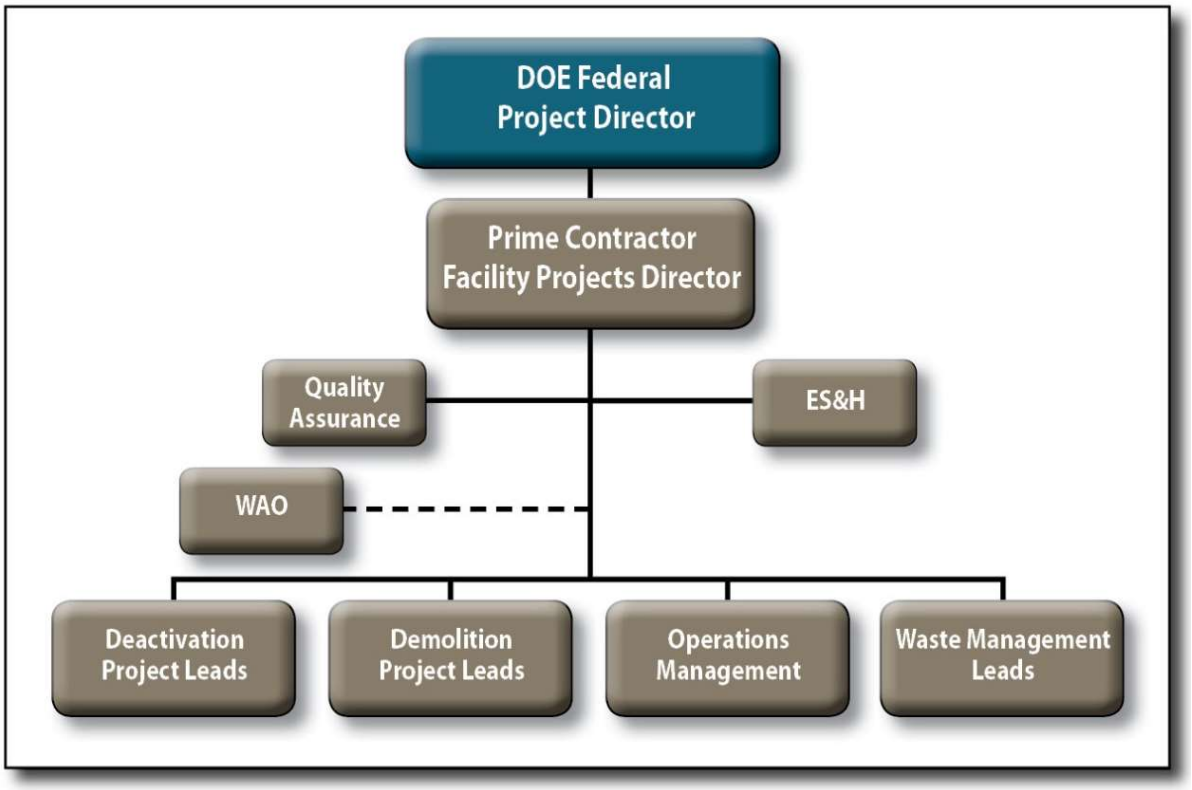

Figure 6. Facility Projects Organization

Trained and qualified personnel will be provided, as required by DOE Acquisition Regulation Clause, 48 *CFR* 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*. Planning for the wide variety of work activities to be performed under this scope occurs within DOE and its prime contractor; organizations are currently in place that employ the work force with skill sets necessary to complete detailed planning and execution of the tasks contemplated under this scope.

Some tasks will be subcontracted to qualified commercial entities with the equipment and experienced personnel to perform the specific tasks. Subcontractor evaluation and selection processes will be used to ensure that work is placed with entities with the capabilities required. DOE's prime contractor maintains an oversight role of subcontracted work activities to ensure technical, safety, and quality objectives are achieved.

7.1.1 DOE Federal Project Director

The DOE Federal Project Director has the responsibility for obtaining the funding to implement the work. DOE also oversees the prime contractor effort and is Ohio EPA's primary point of contact. It is DOE's responsibility to ensure that Ohio EPA has access to the area and receives relevant information and submittals in a timely manner.

7.1.2 Prime Contractor Facility Projects Director

The prime contractor Facility Projects Director has the responsibility for planning and implementing this work, including scheduling and estimating the work, obtaining resources, conducting field work, documenting the plans and the work, enforcing contract provisions, and providing DOE information in a timely manner.

The Facility Projects Director is accountable to the prime contractor's senior management staff and to the DOE Project Director for activities under the purview of this work plan, including the following:

- Managing personnel and subcontractors assigned to the scope of work
- Ensuring contractor-initiated change orders are properly evaluated and managed with technical input from subject matter experts
- Facilitating timely and sufficient implementation of PORTS oversight and support functions (e.g., QA/QC, safety and health, waste management, etc.) on procedures and/or deliverables
- Ensuring project planning is integrated with other site functional areas and projects, including the OSWDF project
- Providing project status reports and documenting and managing field changes through accepted processes
- ARARs compliance.

7.1.3 Prime Contractor Deactivation and Demolition Project Leads

The prime contractor Deactivation and Demolition Project Leads report directly to the prime contractor Facility Projects Director to plan and oversee the deactivation, demolition, and site restoration activities to be accomplished in the field safely, within budget, and on schedule. Responsibilities of these project leads include the following:

- Coordinating with support organizations and personnel, including functional groups, to ensure work is properly planned and resources are available for completion of work
- Reviewing project documents and work packages to ensure work is planned and executed according to requirements and plans concurred with by Ohio EPA
- Overseeing subcontracted resources and ensuring contractor-initiated change orders are properly evaluated and managed with technical input from subject matter experts
- Resolving nonconformances on deactivation/demolition activities and/or deliverables
- ARARs compliance.

7.1.4 Waste Management Leads

The prime contractor Waste Management Lead(s) reports to the Facility Projects Director to implement the characterization, handling, storage, treatment, packaging, tracking, transportation, and disposal of waste from the project. The Waste Management Lead(s) are responsible for implementation of PORTS Waste Management Program for this project, including the following:

- Coordinating with support organizations and personnel, including functional groups, to ensure waste management work is properly planned and resources are available for completion of work
- Managing waste management personnel assigned to execute day-to-day activities on the project
- Interface with treatment, disposal, and transportation vendors regarding any off-site treatment, transportation, or disposition of waste
- For off-site waste disposition, implementing QC measures to ensure that waste generated by the project is compliantly managed, certified, transported, and disposed
- ARARs compliance.

7.1.5 Operations Management Leads

The prime contractor Operations Management Lead(s) reports directly to the prime contractor Facility Projects Director and is responsible for management of the site union labor force or other subcontractors conducting the deactivation and on-site transportation activities under this scope of work. Responsibilities of the Operations Management Lead include:

- Ensuring adequate personnel resources are assigned to the project and that personnel are properly trained and qualified
- Coordinating with support organizations and personnel, including functional groups, to ensure work is properly planned and resources are available for completion of work
- Resolving nonconformances and ensuring worker safety.

7.1.6 Other Key Support Organizations

Other organizations within the prime contractor at PORTS will provide critical support to the execution of the remedial action project. Several of the support organizations of key importance to the remedy implementation are described below.

The QA organization provides independent oversight of many activities at PORTS on behalf of senior site management and maintains a program and procedural framework and environment at the site that promotes improvement and monitors performance of site activities against written requirements.

The Environmental, Safety, and Health organizations at PORTS provide resources for meeting environmental and health and safety requirements and also perform independent evaluation of site performance and compliance.

The WAC Implementation Plan defines the role of the WAO, which will provide independent verification to both the waste generation and disposal processes for on-site disposal at the OSWDF. The WAO will

serve in an oversight function for compliant implementation of the OSWDF WAC. The full list of responsibilities assigned to the WAO are defined in the WAC Implementation Plan.

7.2 COST

The DFF&O, Attachment B, SOW requires refinement of the cost estimate developed in the feasibility study to reflect the detailed plans and specifications being developed for a remedial action project. The cost estimate is to include both capital and O&M costs and be based on the entire anticipated duration of the project. Table 5 presents the project cost estimate for the scope of work included in this Comprehensive Process Buildings RD/RA Work Plan based on post-RI/FS PORTS life cycle estimating activities presented as cumulative unescalated costs by category.

Table 5. Cost Estimate

Cost Element	Present Worth Estimate
Services, Infrastructure, and Support	$1,252,000,000
Deactivation and Demolition	$598,000,000
Waste Management	$1,132,000,000
Overall	**$2,982,000,000**

7.3 SCHEDULE

7.3.1 Construction Schedule

The project activities included in this work scope represent a major project. Sequencing of remedial action activities within a building or structure will generally occur as described in Section 3, including deactivation of the DFF&O Attachment H buildings, structures, and infrastructure (with the exception of the large process buildings X-326, X-330, and X-333, and their associated tie lines and portal structures), phased demolition (above-grade followed by at- and below-grade) for all DFF&O Attachment H buildings and structures (except X-114A), site restoration, and management and transportation for disposition of resulting materials and waste. Scheduling and coordination of these actions is implemented through the organization described in Section 7.1. Long-term impacts to a continuous remedy implementation schedule are not anticipated, and would only be expected as a result of funding shortfalls. Other impacts, such as weather delays, are being considered in design planning.

These project activities are expected to require decades to complete. Simultaneous deactivation and demolition work may occur, depending on available funding. Specific sequencing and scheduling will be contingent on funding levels, work force considerations, and technical considerations (such as utilities redistribution planning, OSWDF fill materials needs, and final contouring plans). DOE will keep Ohio EPA updated on progress and plans through routine status meetings and through quarterly reports as identified in Section 8.

The general sequence of DFF&O-required documents and field implementation for the PORTS buildings and structures remedial design and remedial action are shown in Table 6 with key predecessor events identified. Besides deactivation activities focused on achieving demolition readiness, deactivation includes work such as S&M and housekeeping; therefore, deactivation activities will effectively be ongoing until either removal of buildings/structures by demolition or demonstration that building/ structure actions are complete (such as identification of clean buildings/structures for reuse).

Table 6. Sequence of Events for Remedy Implementation

Decision/Task	2014	2015	2016	2017	2018	2019	2020-2045	> 2045
Process Buildings RI/FS								
Process Buildings ROD								
Waste Disposition RI/FS								
Waste Disposition ROD								
Process Buildings Deactivation RD/RA Work Plan								
- Deactivation & Waste Management								
Comprehensive RD/RA Work Plan								
- Deactivation								
- Demolition Designs								
- Demolition & Site Restoration								
- Waste Management								
Five-Year Reviews								
Reporting								

Note:
Years indicated represent fiscal year.

RD/RA = remedial design/remedial action
RI/FS = remedial investigation/feasibility study
ROD = Record of Decision

Due to the complexity and long duration of the PORTS overall remedial action project, the DFF&O established a quarterly and annual reporting process for DOE. The DFF&O Projected Milestone Activities Report will establish any necessary milestones; the DFF&O Quarterly Progress Reports will document progress on the project and discuss upcoming activities. Additionally, demolition plans to be submitted later will provide additional schedule and activity detail. A separate Remedial Action Implementation Plan will not be required.

7.3.2 Milestones

The DFF&O, Table 1B requires that each RD/RA work plan sets Milestones for submitting the remedial design, if applicable, and for initiating remedial action. The Milestones set in this work plan are provided in Table 7, which also includes target dates for other activities of interest. Because this work plan includes the remedial design for deactivation, a separate Milestone for submittal of the deactivation remedial design is not required. Milestones for future demolition designs and field work to be conducted under this work plan will be identified in the DFF&O Annual Milestone report.

Table 7. Deactivation and Demolition Milestones

Milestone/Target	Due Date
Initiate remedial action under this RD/RA work plan.	Deactivation activities, which includes building/structure S&M and waste management activities, will be initiated under this plan within 30 days after concurrence by Ohio EPA.[a]
Submit draft FWCR for deactivation field projects for four original DFF&O Attachment H building/ structure groupings addressed by this work plan.	Within 120 days after completion of field activities, excluding completion of waste disposition.[b]
Disposition of waste generated by building deactivation that is prohibited from on-site disposition.	Target Date within 2 years of generation of the waste.[c]

Notes:
[a]This activity is a milestone as defined in the DFF&O.
[b]FWCRs for deactivation activities will be submitted for four of the original seven DFF&O Attachment H buildings/structures addressed by this work plan (X-700 [including X-700A], X-705 [including X-705D and X-705E], X-710, and X-720). Note that deactivation of the other three original DFF&O Attachment H buildings are addressed in the Process Buildings Deactivation RD/RA Work Plan. Reporting on deactivation activities for other buildings/structures addressed by this work plan will be included with reporting on demolition activities, following completion of the demolition. The DFF&O Quarterly Progress Report will be used to keep Ohio EPA informed on field activities progress as specified in the DFF&O.
[c]These Target Dates are a projection of activities to be performed for FY+3 and beyond and has been established for the out years beyond the FY+2 year. In accordance with the DFF&O, Section VII, Paragraph 20.c, this Milestone is not subject to the Review of Submissions section of the orders and will be tracked as a nonenforceable Target date. These target dates will be reviewed annually and updated as necessary in the Projected Milestone Activities, Target Activities, and Milestones for the Decontamination and Decommissioning at PORTS Report.

DFF&O = *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*
FWCR = Field Work Completion Report
FY = fiscal year
Ohio EPA = Ohio Environmental Protection Agency
PORTS = Portsmouth Gaseous Diffusion Plant
RD/RA = remedial design/remedial action
S&M = surveillance and maintenance

8. REPORTING REQUIREMENTS

During implementation of any portion of the remedial action, the progress of the work will be documented in the DFF&O Quarterly Progress Report. A separate quarterly report just for this project will not be submitted. The DFF&O Quarterly Progress Report will provide the details of the work accomplished during the previous quarter.

The list of required submittals applicable to this scope of work is provided in Table 2 (Deactivation) and Table 3 (Demolition/Site Restoration).

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APPENDIX A: ARARS COMPLIANCE MATRIX

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TABLES

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The applicable or relevant and appropriate requirements (ARARs) crosswalk table in this appendix provides a compliance strategy for each ARAR or to-be-considered (guidance) (TBC) associated with the Process Buildings Record of Decision (ROD) and for the portion of the ARARs or TBCs from the Waste Disposition ROD that are applicable to the implementation of the remedial action design scope of work as described in Section 1 of this document. In some instances, it is necessary to allow the demolition design efforts to progress before a specific compliance approach for an ARAR is presented. In these cases, or in cases that the compliance strategy during demolition will differ from that of the deactivation work, the ARARs crosswalk in the demolition plan submittal will provide the compliance strategy.

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Table A.1. Location-specific ARARs

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
		Wetlands				
Presence of wetlands as defined in 10 *CFR* 1022.4	Avoid, to the extent possible, the long-and short-term adverse effects associated with destruction, occupancy, and modification of wetlands.	DOE actions that involve potential impacts to, or take place within, wetlands—**applicable**	10 *CFR* 1022.3(c)	X	X	Direct and indirect impacts to wetlands may occur as a result of deactivation (e.g., underground utility reconfiguration) and demolition activities. Impacts will be minimized with erosion and sediment controls. A Mitigation Plan for PORTS is under development.
	Take action, to extent practicable, to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.		10 *CFR* 1022.3 (a)(7) and (8)	X	X	See above.
	Undertake a careful evaluation of potential effects of any new construction in wetlands. Identify, evaluate, and, as appropriate, implement alternative actions that may avoid or mitigate adverse impacts on wetlands.		10 *CFR* 1022.3 (b) and (d)	X	X	See above.

[a]The requirements portion of the ARARs table is intended to provide a summary of the cited ARAR. The omission of any particular requirement does not limit the scope of the cited ARARs.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Presence of wetlands as defined in 10 *CFR* 1022.4 (continued)	Measures to take to mitigate the adverse effects of actions in wetlands include, but are not limited to, minimum grading requirements, run-off controls, design and construction constraints, and protection of ecology-sensitive areas.		10 *CFR* 1022.13 (a)(3)	X	X	See above.
	If no practicable alternative to locating or conducting the action in the wetland is available, then before taking action, design or modify the action in order to minimize potential harm to or within the wetland, consistent with the policies set forth in Executive Order 11990.		10 *CFR* 1022.14(a)	X	X	See above.
Presence of jurisdictional wetlands	Except as provided under the CWA Sect. 404(b)(2), no discharge of dredged or fill material into an aquatic ecosystem is permitted if there is a practicable alternative that would have less adverse impact on the aquatic ecosystem or if it will cause or contribute to significant degradation of the waters of the United States.	Actions that involve the discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands—**applicable**	40 *CFR* 230.10 (a) and (c)	X	X	No dredging is planned for this project.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Presence of jurisdictional wetlands (continued)	Except as provided under the CWA Sect. 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps in accordance with 40 *CFR* 230.70 *et seq*. are taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.		40 *CFR* 230.10(d)	X	X	See above.
Presence of wetlands as defined under *OAC* 3745-1-02(B)(90)	Wetlands designated uses, as assigned in accordance with *OAC* 3745-1-54(B)(2), shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions in accordance with the substantive wetland avoidance, minimization, and compensatory mitigation requirements of the paragraphs (D) and (E) of *OAC* 3745-1-54.	Activity that would cause loss of wetlands as defined under *OAC* 3745-1-02(B)(90)—**applicable**	*OAC* 3745-1-54 (B)(1) *OAC* 3745-1-51 through -54	X	X	Direct and indirect impacts to wetlands may occur as a result of deactivation (e.g., underground utility reconfiguration) and demolition activities. Impacts will be minimized with erosion and sediment controls.
	Wetland narrative criteria in *OAC* 3745-1-51(A) shall be protected to prevent significant adverse impacts on the hydrology necessary to support the biological and physical characteristics naturally present in wetlands				X	See above.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Presence of wetlands as defined under *OAC* 3745-1-02(B)(90) (continued)	Wetland narrative criteria in *OAC* 3745-1-51(B) shall be protected to prevent significant adverse impacts on water quality necessary to support existing habitat and populations of wetland flora and fauna and to prevent conditions conducive to the establishment or proliferation of nuisance organisms				X	See above.
Presence of "isolated" wetlands as defined under *RC* 6111.02	No person shall engage in the filling of an isolated wetland unless authorized to do so pursuant to the substantive requirements of a general or individual state isolated wetland permit.	Actions that involve the discharge of dredged or fill material into "isolated wetlands"—**applicable**	*RC* 6111.021 – 6111.028	X	X	Impacts will be minimized with erosion and sediment controls.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Presence of "isolated" wetlands as defined under *RC* 6111.02 (continued)	Must comply with the following substantive requirements and conditions of this permit: • Only suitable material free of toxic contaminants in other than trace quantities shall be used as fill material. • Use of asphalt and rubber tires as fill is prohibited. • Wetland narrative and chemical criteria in *OAC* 3745-1-51 and 3745-1-52 shall be maintained in isolated wetlands wholly or partially avoided. • Visible signage, as detailed in the general permit, shall be placed around the delineated boundary of the avoided wetlands.	Category 1 or 2 "isolated wetlands" of a total of ½ acre or less—**TBC** Category 1 or 2 "isolated wetlands" of a total of ½ acre or less—**TBC**	Ohio General Permit for Filling Category 1 and Category 2 Isolated Wetlands (effective April 10, 2007)	X	X	Direct and indirect impacts to wetlands may occur as a result of deactivation (e.g., underground utility reconfiguration) and demolition activities. Impacts will be minimized with erosion and sediment controls. Signage will be placed around the wetlands to be protected during site construction activities.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Presence of "isolated" wetlands as defined under *RC* 6111.02 (continued)	Mitigation is required either on or off site, or at a mitigation bank within the same USACE district as the project location. Mitigation must be conducted in accordance with the ratios established in the general permit depending on the wetland category designation. The mitigation site shall be protected in perpetuity, and appropriate practicable management measures including vegetative buffers shall be implemented to restrict harmful activities that jeopardize the mitigation.	Actions that involve the discharge of dredged or fill material into Category 1 or 2 "isolated wetlands" of a total of ½ acre or less—**TBC**	Ohio General Permit for Filling Category 1 and Category 2 Isolated Wetlands (effective April 10, 2007)	X	X	The PORTS Mitigation Plan will be submitted separately and will identify on-site wetland and stream mitigation areas.
		Aquatic resources				
Location encompassing aquatic ecosystem as defined in 40 *CFR* 230.3(c)	Except as provided under Sect. 404(b)(2), no discharge of dredged or fill material into an aquatic ecosystem is permitted if there is a practicable alternative that would have less adverse impact on the aquatic ecosystem or if it will cause or contribute to significant degradation of the waters of the U.S.	Action that involves discharge of dredged or fill material into waters of the United States—**applicable**	40 *CFR* 230.10 (a) and (c) *OAC* 3745-32-05	X	X	No dredging is planned for this project.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Location encompassing aquatic ecosystem as defined in 40 *CFR* 230.3(c) (continued)	Except as provided under Sect. 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps in accordance with the substantive provisions of 40 *CFR* 230.70 *et seq*. are taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.		40 *CFR* 230.10(d) *OAC* 3745-32-05	X	X	No dredging is planned for this project.
	Consideration of mitigation will occur throughout the activity and includes avoiding, minimizing, rectifying, reducing, or compensating for resource losses. Losses will be avoided to the extent practicable. Compensation may occur on-site or at an off-site location. Mitigation requirements generally fall into three categories:	Action that involves discharge of dredged or fill material into waters of the United States—**applicable**	33 *CFR* 320.4 (r)(1)		X	Direct and indirect impacts to wetlands may occur as a result of deactivation (e.g., underground utility reconfiguration) and demolition activities. Impacts will be minimized with erosion and sediment controls. Signage will be placed around the wetlands to be protected during site construction activities.
	Minor project modifications considered feasible (cost, constructability, etc.) and that, if adopted, result in a project that generally meets the purpose and need.		33 *CFR* 320.4 (r)(1)(i)		X	See above.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Criteria for decision by director	The directors shall evaluate the criteria in *OAC* 3745-32-05 and shall not issue a Section 401 water quality certification unless he determines that the applicant has demonstrated that the discharge of dredged or fill material to waters of the state or the creation of any obstruction or alteration in waters of the state will not prevent or interfere with the attainment or maintenance of applicable water quality standards or not result in a violation of any applicable provision of sections of the Federal Water Pollution Control Act listed in *OAC* 3745-32-05(2).	Action that involves aquatic habitat alterations caused by an activity and associated construction disturbances that would result in the loss of an existing or designated stream use—**applicable**	*OAC* 3745-32-05		X	Direct and indirect impacts to wetlands may occur as a result of deactivation (e.g., underground utility reconfiguration) and demolition activities. Impacts will be minimized with erosion and sediment controls. Signage will be placed around the wetlands to be protected during site construction activities.
Criteria applicable to all waters	Water quality criteria in *OAC* 3745-1-04 shall be applied to all surface waters of the state including mixing zones to every extent practical and possible as determined by the director.	Actions that may result in the lowering of water quality	*OAC* 3745-1-04		X	Appropriate controls and the continued maintenance of existing holding ponds and treatment systems will ensure that all wastewater discharged will result in receiving waters being free from floating debris, scum, discoloration, sheen, or otherwise cause a nuisance.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
		Cultural resources				
Presence of archaeological resources	Must provide for the preservation of significant historical and archeological data which might otherwise be irreparably lost or destroyed as a result of any alteration of terrain caused as a result of any Federal construction project.	Federal agency construction or excavation projects that would cause the irreparable loss or destruction of significant historic or archeological resources or data— **applicable**	16 USC 469	X	X	Archaeological experts determined that all of the area within Perimeter Road was significantly disturbed during plant construction and deactivation and demolition work inside Perimeter Road would have no impact on archaeological resources.
Presence of human remains, funerary objects, sacred objects, or objects of cultural patrimony for Native Americans	Must stop activities in the area of the discovery and take reasonable effort to secure and protect the objects discovered before resuming activity.	Federal agency construction or excavation activities that inadvertently discover Native American cultural items on Federal lands or lands under Federal control— **applicable**	25 USC 3002(d) 43 *CFR* 10.4 (c) and (d)(2)	X	X	Activities will immediately cease should human remains and/or Native American cultural items be inadvertently discovered. Work activities will recommence at direction of DOE.
Presence of historic properties	Federal agencies must take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion on the National Register.	Federal agency undertaking that may impact historic properties listed or eligible for inclusion on the National Register of Historic Places— **applicable**	16 USC 470f 36 *CFR* 800.1(a)	X	X	Mitigation measures to preserve historical data are taken through collection of artifacts and development of HAER photographs and documentation of selected PORTS facilities.

Table A.1. Location-specific ARARs (Continued)

Location	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Presence of historic properties (continued)	Federal agencies must initiate measures to assure that where, as a result of Federal action, a historic property is to be substantially altered or demolished, timely steps are taken to make or have made appropriate records.	Substantial alteration or demolition of a historic property—**applicable**	16 USC 470h-2(b)	X	X	Mitigation measures to preserve historical data are taken through collection of artifacts and development of HAER photographs and documentation of selected PORTS facilities

ARAR = applicable or relevant and appropriate requirement
CFR = Code of Federal Regulations
CWA = Clean Water Act
DOE = U.S. Department of Energy
HAER = Historic American Engineering Record
NRHP = National Register of Historic Places
OAC = Ohio Administrative Code
PB = process building
PORTS = Portsmouth Gaseous Diffusion Plant
RC = Ohio Revised Code
ROD = Record of Decision
TBC = to-be-considered
USACE = U.S. Army Corps of Engineers
USC = United States Code
WD = waste disposition

Table A.2. Action-specific ARARs

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
		Site Preparation, Construction, and Excavation Activities				
Activities causing release of air pollutants	Shall not cause the emission or escape into the open air from any source or sources whatsoever of smoke, ashes, dust, dirt, grime, acids, fumes, gases, vapors, odors, or any other substances or combinations of substances in such manner or in such amounts as to endanger the health, safety, or welfare of the public, or cause unreasonable injury or damage to property.	Activities causing the release of air pollution nuisances as defined in *OAC* 3745-15-07(A)—**applicable**	*OAC* 3745-15-07	X	X	Control of emissions will be through the use of appropriate control mechanisms and will be such that nuisance conditions do not occur.
	The operation of a hazardous waste facility shall not cause, permit, or allow the emission there from of any particulate matter, dust, fumes, gas, mist, smoke, vapor, or odorous substance that unreasonably interferes with the comfortable enjoyment of life or property by persons living or working in the vicinity of the facility or that is injurious to public health.	Site where hazardous waste will be managed such that air emissions may occur—**applicable**	*RC* 3734.02(I)	X		Control of emissions will be through the use of appropriate control mechanisms and will be such that nuisance conditions do not occur.

[a]The requirements portion of the ARARs table is intended to provide a summary of the cited ARAR. The omission of any particular requirement does not limit the scope of the cited ARARs.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Activities causing fugitive dust (particulate) emissions	Shall take reasonable achievable control measures to prevent particulate matter from becoming airborne. Reasonable achievable control measures shall include, but are not limited to, the following:	Fugitive emissions from transportation, land-disturbing, or building alteration activities located in areas identified in Appendix A to *OAC* 3745-17-08, except as exempted under *OAC* 3745-17-08(A)(3)—**relevant and appropriate**	*OAC* 3745-17-08(B)	X	X	Control of fugitive dust will be accomplished through water misting and/or the use of fixatives as appropriate. Application will be proactive to ensure unacceptable emissions of fugitive dust will not occur.
	• Use, where possible, of water or chemicals for control of dust and in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;		*OAC* 3745-17-08(B)(1)	X	X	Control of fugitive dust will be accomplished through water misting and/or the use of fixatives as appropriate. Application will be proactive to ensure unacceptable emissions of fugitive dust will not occur.
	• Periodic application of asphalt, oil (excluding used oil), water, or other suitable chemicals on dirt or gravel roads and parking lots, materials stock piles, and other surfaces that can create airborne dusts, or the use of canvas or other suitable coverings for all materials stockpiles and stockpiling operations except temporary stockpiles;		*OAC* 3745-17-08(B)(2) and (6)	X	X	Control of fugitive dust will be accomplished through water misting and/or the use of fixatives as appropriate. Application will be proactive to ensure unacceptable emissions of fugitive dust will not occur.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Activities causing fugitive dust (particulate) emissions (continued)	• Install and use hoods, fans, and other equipment to adequately enclose, contain, capture, vent, and control the fugitive dust at the point(s) of capture to the extent possible with good engineering design. Equipment must meet the efficiency requirements of *OAC* 3745-17-08(B)(3)(a) and (b);		*OAC* 3745-17-08(B)(3)	X	X	Existing air pollution control equipment will be maintained to the extent possible to control emissions. Equipment will be maintained until sources are deactivated and/or removed.
	• Use of adequate containment methods during sandblasting or similar operations;		*OAC* 3745-17-08(B)(5)	X	X	If sandblasting or similar operations are used during deactivation and/or construction (demolition), then adequate containment methods will be used.
	• Cover, at all times, open-bodied vehicles when transporting materials likely to become airborne;		*OAC* 3745-17-08(B)(7)	X	X	Vehicles loads will be covered if transported materials are likely to become airborne.
	• Pave and maintain roadways in a clean condition; and		*OAC* 3745-17-08(B)(8)	X	X	Paved roadways will be maintained in a clean condition and as necessary the application of fugitive dust measures will be implemented.
	• Promptly remove, in such a manner as to minimize or prevent resuspension, earth or other material from paved streets onto which this material has been deposited by trucking or earth moving equipment or erosion by water or other means.		*OAC* 3745-17-08(B)(9)	X	X	Paved roadways will be maintained in a clean condition and as necessary the application of fugitive dust measures will be implemented.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Airborne radionuclide emissions	Emissions of radionuclides to the ambient air from DOE facilities shall not exceed those amounts that would cause any member of the public to receive an EDE of 10 mrem per year.	Radionuclide air emissions to the ambient air from DOE facilities—**applicable**	40 *CFR* 61.92	X	X	Activities will be evaluated using appropriate dispersion modeling prior to demolition activities taking place to ensure compliance with this standard. If an impact is determined through this modeling the use of fixatives or other appropriate measures will be used. The application of fugitive dust controls discussed above will minimize impacts to workers.
Air emissions from process vents in treatment of VOC contaminated water	Except as provided in paragraphs (C), (D) and (H) of *OAC* 3745-15-05 and division (B) of section 3704.011 of the Revised Code, any air contaminant source is exempt from Chapter 3704 of the Revised Code and rules adopted thereunder, unless the potential emissions of any one of the following exceeds 10 lb/day: particulate matter, sulfur dioxide, nitrogen oxides, organic compounds, carbon monoxide, lead or any other air contaminant.	Air emissions from an air contaminant source— **applicable**	*OAC* 3745-15-05(B)		X	The control of existing process vents associated with the groundwater treatment facilities will be maintained until the systems are removed from operations. New treatment systems installed for the control of VOC-contaminated wastewater will be evaluated against the identified thresholds.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Radiation protection of the public and the environment	Except as provided in 458.1(4)(b)(1)(c), exposure to individual members of the public from radiation shall not exceed a total EDE of 0.1 rem/year (100 mrem/year), exclusive of the dose contributions from background radiation, any medical administration the individual has received, or voluntary participation in medical/research programs.	Radionuclide emissions from all exposure modes from all DOE activities (including remedial actions) at a DOE facility—**TBC**	DOE Order 458.1(4)(b) and (c)	X	X	All control systems will remain operational until active sources are deactivated. Additional controls will be used so the EDE is not exceeded. Current environmental monitoring activities will continue. The application of fugitive dust controls discussed above (under Activities causing fugitive dust [particulate] emissions) will minimize impacts to workers and the public.
	Shall use, to the extent practicable, procedures and engineering controls based on sound radiation protection principles to achieve doses to members of the public that are ALARA.		DOE Order 458.1(4)(d)	X	X	All control systems will remain operational until sources are deactivated. Additional controls will be used, if needed, to ensure the EDE is not exceeded. Current environmental monitoring activities will continue. The application of fugitive dust controls discussed above (under Activities causing fugitive dust [particulate] emissions) will minimize impacts to workers and the public.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Radiation protection of the public and the environment (continued)	Except as provided in *OAC* 3701:1-38-13(C), exposure to individual members of the public from radiation shall not exceed 1 millisievert (mSv) (0.1 rem) in a year, exclusive of the dose contributions from background radiation, any medical administration the individual has received, or voluntary participation in medical/research programs.	Conducting operations that release radioactivity—**relevant and appropriate**	*OAC* 3701:1-38-13 (A)(1)		X	See above.
	The dose in any unrestricted area from external sources, exclusive of the dose contribution from patients administered radioactive material and released in accordance with *OAC* 3701:1-58-30 or equivalent U.S. nuclear regulatory agency or agreement state regulations, shall not exceed 0.02 mSv (0.002 rem) in any 1 hour.		*OAC* 3701:1-38-13 (A)(2)		X	See above.
Management, storage and disposal of LLW	Management, storage, and disposal must be conducted in a manner such that exposure to members of the public to radiation from radioactive waste complies with ALARA process requirements and does not exceed a TED of 25 mrem in a year from all exposure pathways and radiation sources associated with the waste, except for transportation and radon and its decay products.	Management, storage, and disposal of low-level radioactive waste—**TBC**	DOE Order 458.1 (h)(1)(c)		X	Existing radioactive waste practices in compliance with this requirement will be continued, using existing waste management procedures, such as appropriately containerizing radioactive wastes or otherwise controlling release of particulate or gaseous radionuclides.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Activities causing storm water runoff (e.g., demolition)	Dischargers must utilize best management practices to control pollutants in storm water discharges during and after construction, which may include, as appropriate, soil stabilization practices (e.g., seeding), perimeter structural practices (e.g., gabions, silt fences, sediment traps), and storm water management devices as detailed in Part III.G.2 ("Controls") of NPDES OHC000005.	Storm water runoff discharges from land disturbed by construction activity— disturbance of ≥ 1 acre total, except where otherwise exempt as specified in 40 *CFR* 122.26(b)(15)— **applicable**	Authorization for Storm Water Discharges Associated with Construction Activity under NPDES OHC000005, Part III.G.2	X	X	Existing storm sewer system systems and ponds will be maintained in service until demolition to continue existing storm water management practices. Compliance with the established effluent limits will continue. During demolition, impacted surface waters will be managed and treated as necessary. Inlet protection will be installed on catch basins within project boundaries, as applicable.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
			Waste Generation, Characterization, and Segregation			
Characterization of solid waste	Must determine if solid waste is hazardous or is excluded under 40 *CFR* 261.4 [*OAC* 3745 51-04]; and	Generation of solid waste as defined in 40 *CFR* 261.2—**applicable**	40 *CFR* 262.11(a) *OAC* 3745-52-11(A)	X	X	Information for the characterization of waste destined for on-site or off-site disposal will be based on process knowledge and/or available historic data first. Additional characterization of waste will be performed as needed to meet WAC and transportation needs. Hazardous waste determinations will be made for all waste targeted for off-site disposal. LDR status will be determined for hazardous waste shipped off site for treatment or disposal. All waste destined for on-site disposal will be characterized. It is anticipated that process knowledge will be satisfactory to characterize the waste, consistent with EPA 2015 guidance "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste – Final" which states that a facility may apply acceptable knowledge of the waste in lieu of testing the waste.
	Must determine if waste is listed as a hazardous waste in 40 *CFR* Part 261 [*OAC* 3745-51-30 to 3745-51-35]; or	Generation of solid waste that is not excluded under 40 *CFR* 261.4—**applicable**	40 *CFR* 262.11(b) *OAC* 3745-52-11(B)	X	X	
	Must determine whether the waste is identified in subpart C of 40 *CFR* 261 [*OAC* 3745-51-20 to 3745-51-24], characterizing the waste by using prescribed testing methods or applying generator knowledge based on information regarding material or processes used.	Generation of solid waste that is not listed in subpart D of 40 *CFR* 261 and not excluded under 40 *CFR* 261.4—**applicable**	40 *CFR* 262.11(c) *OAC* 3745-52-11(C)	X	X	
	Must refer to Parts 261, 262, 264, 265, 266, 268, and 273 of Chapter 40 [*OAC* 3745-51, 3745-54 to 3745-57, 3745-65 to 3745-69, 3745-205, 3745-256, 3745-266, 3745-270, and 3745-273] for possible exclusions or restrictions pertaining to management of the specific waste.	Generation of solid waste that is determined to be hazardous—**applicable**	40 *CFR* 262.11(d) *OAC* 3745-52-11(D)	X	X	

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Characterization of hazardous waste	Must obtain a detailed chemical and physical analysis of a representative sample of the waste(s) that, at a minimum, contains all the information that must be known to treat, store, or dispose of the waste in accordance with 40 *CFR* 264 and 268 [*OAC* 3745-54 to 3745-57, 3745-205, and 3745-270].	Generation of RCRA hazardous waste for storage, treatment, or disposal—**applicable**	40 *CFR* 264.13(a)(1) and (2) *OAC* 3745-54-13(A)(1) and (2)	X	X	Information for the characterization of waste destined for on-site or off-site disposal will be based on process knowledge and/or available historic data first. Additional characterization of waste will be performed as needed to meet WAC and transportation needs. Hazardous waste determinations will be made for all waste targeted for off-site disposal. LDR status will be determined for hazardous waste shipped off site for treatment or disposal. All waste destined for on-site disposal will be characterized. It is anticipated that process knowledge will be satisfactory to characterize the waste, consistent with EPA 2015 guidance "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste – Final" which states that a facility may apply acceptable knowledge of the waste in lieu of testing the waste.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Determinations for land disposal of hazardous waste	Must determine if the waste meets the treatment standards in 40 *CFR* 268.40, 268.45, or 268.49 [*OAC* 3745-270-40, 3745-270-45, and 3745-270-49] by testing in accordance with prescribed methods or use of generator knowledge of waste.	Generation of RCRA hazardous waste for storage, treatment, or disposal—**applicable**	40 *CFR* 268.7(a) *OAC* 3745-270-07(A)	X	X	Disposal of waste on site will be based on compliance with OSWDF WAC. If off-site shipment of waste is required then treatment standards will be evaluated as well as disposal facility WAC. All waste destined for on-site disposal will be characterized. It is anticipated that process knowledge will be satisfactory to characterize the waste, consistent with EPA 2015 guidance "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste – Final" which states that a facility may apply acceptable knowledge of the waste in lieu of testing the waste.
	Treatment facilities must test their wastes according to the frequency specified in their waste analysis plans to determine if the waste meets the treatment standards in 40 *CFR* 268.40, 268.45, or 268.49 [*OAC* 3745-270-40, 3745-270-45, and 3745-270-49] prior to disposal.	Treatment of RCRA hazardous waste prior to disposal**—applicable**	40 *CFR* 268.7(b) *OAC* 3745-270-07(B)		X	Compliance would be demonstrated in any treatment facility design plans prepared under the RD/RA WP.
	Must determine each EPA Hazardous Waste Number (Waste Code) to determine the applicable treatment standards under 40 *CFR* 268.40 et seq. [*OAC* 3745-270-40 et seq.].	Generation of RCRA hazardous waste for storage, treatment, or disposal—**applicable**	40 *CFR* 268.9(a) *OAC* 3745-270-09(A)	X	X	Per current procedures, all waste is evaluated based on process knowledge or analytical characterization to determine applicable hazardous waste codes.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Determinations for land disposal of hazardous waste (continued)	Must determine the underlying hazardous constituents [as defined in 40 *CFR* 268.2(i) and *OAC* 3745-270-02] in the waste.	Generation of RCRA characteristically hazardous waste (and is not D001 nonwastewaters treated by CMBST, RORGS, or POLYM of Section 268.42, Table 1) for storage, treatment, or disposal—**applicable**	40 *CFR* 268.9(a) *OAC* 3745-270-09(A)	X	X	Per current procedures, all hazardous waste is evaluated based on process knowledge or analytical characterization to determine underlying hazardous constituents.
	Must determine whether the waste meets other applicable treatment standards under 40 *CFR* 268.9 [*OAC* 3745-270-09] for characteristic wastes.	Generation of RCRA characteristically hazardous waste—**applicable**	40 *CFR* 268.9(b) to (d) *OAC* 3745-270-09(B) to (C)	X	X	Per current procedures, all hazardous waste is evaluated based on process knowledge or analytical characterization to determine all applicable codes for characteristic wastes.
Characterization and management of wastewater (e.g., decon water)	On-site wastewater treatment units (including tank systems, conveyance systems, and ancillary equipment used to treat, store or convey wastewater to the wastewater treatment facility) are exempt from the requirements of RCRA Subtitle C standards.	On-site wastewater treatment units subject to regulation under Section 402 or Section 307(b) of the CWA—**applicable**	40 *CFR* 264.1(g)(6) *OAC* 3745-54-01(G)(6)	X	X	All discharge of wastewater or storm water will be in compliance with the existing (or modified) NPDES permit or it will be demonstrated the discharge will comply with water quality standards pursuant to *OAC* 3745-1.
Characterization and management of industrial wastewater	Industrial wastewater discharges that are point source discharges under Section 402 of the CWA, as amended, are not solid wastes for purpose of hazardous waste management.	Generation of industrial wastewater for discharge—**applicable**	40 *CFR* 261.4(a)(2) *OAC* 3745-51-04(A)(2)	X	X	All discharge of wastewater or storm water will be in compliance with the existing (or modified) NPDES permit or it will be demonstrated the discharge will comply with water quality standards pursuant to *OAC* 3745-1.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Characterization of LLW	Shall be characterized using direct or indirect methods and the characterization documented in sufficient detail to ensure safe management and compliance with the WAC of the receiving facility.	Generation of LLW for storage or disposal at a DOE facility—**TBC**	DOE M 435.1-1 (IV)(I)	X	X	Per current procedures, characterization of LLW will be based on process knowledge and/or available historic data first. Additional NDA measurements or sampling will be used as necessary to meet WAC and transportation needs.
	Characterization data shall, at a minimum, include the following information relevant to the management of the waste:		DOE M 435.1-1 (IV)(I)(2)	X	X	Per current procedures, characterization of LLW will be based on process knowledge and/or available historic data first. Additional NDA measurements or sampling will be used to meet WAC and transportation needs. Volumes, weights, containers, and radionuclide content will be determined and documented based on the OSWDF WAC Implementation Plan or the off-site disposal facility requirements.
	• Physical and chemical characteristics;		DOE M 435.1-1 (IV)(I)(2)(a)	X	X	See above.
	• Volume, including the waste and any stabilization or absorbent media;		DOE M 435.1-1 (IV)(I)(2)(b)	X	X	See above.
	• Weight of the container and contents;		DOE M 435.1-1 (IV)(I)(2)(c)	X	X	See above.
	• Identities, activities, and concentrations of major radionuclides;		DOE M 435.1-1 (IV)(I)(2)(d)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Characterization of LLW (continued)	• Characterization date;		DOE M 435.1-1 (IV)(I)(2)(e)	X	X	See above.
	• Generating source; and		DOE M 435.1-1 (IV)(I)(2)(f)	X	X	See above.
	• Any other information that may be needed to prepare and maintain the disposal facility performance assessment, or demonstrate compliance with performance objectives.		DOE M 435.1-1 (IV)(I)(2)(g)	X	X	See above.
Packaging of solid LLW for storage (e.g., radioactively contaminated debris)	Shall be packaged in a manner that provides containment and protection for the duration of the anticipated storage period and until disposal is achieved or until the waste has been removed from the container.	Storage of LLW in containers at a DOE facility—**TBC**	DOE M 435.1-1 (IV)(L)(1)(a)	X	X	Deactivation wastes that will be stored in containers will primarily be stored indoors in appropriate containers. If the need arises that outdoor storage is required for these wastes, then the waste will be stored in the appropriate containers and sealed to prevent precipitation in-leakage. Off-site shipments of waste will be in appropriate containers and will comply with all applicable DOT and DOE regulations. Management of demolition waste will be described in the demolition plan.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Packaging of solid LLW for storage (e.g., radioactively contaminated debris) (continued)	Vents or other measures shall be provided if the potential exists for pressurizing or generating flammable or explosive concentrations of gases within the waste container. Containers shall be marked such that their contents can be identified.		DOE M 435.1-1 (IV)(L)(1)(b) and (c)	X	X	Deactivation wastes that will be stored in containers will primarily be stored indoors in appropriate containers. If the need arises that outdoor storage is required for these wastes, then the waste will be stored in the appropriate containers and sealed to prevent precipitation in-leakage. Off-site shipments of waste will be in appropriate containers and will comply with all applicable DOT and DOE regulations. Management of demolition waste will be described in the demolition plan.
Segregation of scrap metal for recycle	Material is not subject to RCRA requirements for generators, transporters, and storage facilities under 40 *CFR* Parts 262 through 266, 268, 270, or 124 [*OAC* 3745-50-40 to 3745-50-235 or 3745-52, 3745-53, 3745-54 to 3745-57, 3845-65 to 3745-69, 3745-205, 3745-256, 3745-266, and 3745-270].	Scrap metal, as defined in 40 *CFR* 261.1(c)(6) intended for recycle—**applicable**	40 *CFR* 261.6 (a)(3)(ii) *OAC* 3745-51-06 (A)(3)(b)	X	X	Scrap metal to be evaluated for recycling will be segregated from other waste and placed in a clearly defined area to ensure proper evaluation.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Management of recyclable materials for precious metal recovery	Recyclable materials being collected, transported or stored that are being reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these must be managed in accordance with the substantive requirements of *OAC* 3745-266-70.	Management of recyclable materials for precious metal recovery—**applicable**	*OAC* 3745-266-70	X	X	Recycling of scrap metal will be by a facility appropriately vetted for environmental performance and licensed. It is not expected that precious metals will be discovered in economically significant amounts.
Management of spent lead acid batteries being reclaimed	Spent lead acid batteries being collected, transported and stored prior to regeneration must be managed in accordance with particular hazardous waste requirements depending on permit status and whether they are being reclaimed through regeneration or in other ways. Management options are detailed in 40 *CFR* 266.80 [*OAC* 3745-266-80]. Spent lead acid batteries can also be managed as universal wastes under 40 *CFR* 273 [*OAC* 3745-273].	Management of spent lead acid batteries being reclaimed—**applicable**	40 *CFR* 266.80 *OAC* 3745-266-80	X	X	Spent lead-acid batteries will be shipped off site for recycling or disposal. Spent lead-acid batteries with radiological contamination will be managed as mixed waste and shipped off site for disposal.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Decontamination of radioactively contaminated equipment and building structures	Property potentially containing residual radioactive material must not be released or cleared from DOE control unless it is either demonstrated not to contain residual radioactive material based on process and historical knowledge, radiological monitoring or surveys, or a combination of these; or the property is evaluated and appropriately monitored or surveyed in accordance with DOE Order 458.1(4)(k)(3)(b).	Residual radioactive material on equipment and building structures intended for unrestricted use—**TBC**	DOE Order 458.1 (4)(k)(3)	X	X	Release of contaminated property, if appropriate, will be consistent with DOE Order 458.1. Knowledge of the property is considered and radiological surveys meet the requirement of the Order.
Release of radiological materials or scrap metal for reuse	Before being released, property shall be monitored or surveyed to determine the types and quantities of residual radioactive material within the property; the quantities of removable and total residual radioactive material on property surfaces (including residual radioactive material on or under any coating); and that contamination within or on the property is in compliance with applicable DOE Authorized Limits of DOE Order 458.1(4)(k)(6).	Radionuclide-contaminated materials and equipment intended for recycle or reuse—**TBC**	DOE Order 458.1 (4)(k)(3)(b)(1)–(2) and (4)	X	X	Release of contaminated property, if appropriate, will be consistent with DOE Order 458.1. Knowledge of the property is considered and radiological surveys meet the requirements of the Order.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Release of radiological materials or scrap metal for reuse (continued)	Where potentially contaminated surfaces are difficult to access for measurement (as in some pipes, drains, and ductwork), such property may be released after case-by-case evaluation and documentation based on both the history of its use and available measurements sufficient to demonstrate that the unsurveyable surfaces are likely to meet DOE Authorized Limits.		DOE Order 458.1 (4)(k)(3)(b)(3)	X	X	Release of contaminated property, if appropriate, will be consistent with DOE Order 458.1. Knowledge of the property is considered and radiological surveys meet the requirements of the Order.
Torch cutting of metal coated with paint that may contain PCBs	No person may openly burn PCBs. Combustion of PCBs by incineration as approved under Section 761.60(a) or (e), or otherwise allowed under Part 761, is not open burning.	Management of PCB waste for storage or disposal—**applicable**	40 *CFR* 761.50(a)(1)	X	X	Burning of PCBs will not be conducted. The use of cutting torches on equipment containing PCBs or having paint containing PCBs will not be allowed.
Management of PCB items	Any person removing from use a PCB Item containing an intact and nonleaking PCB article must dispose of it in accordance with Section 761.60(b), or decontaminate it in accordance with Section 761.79. PCB Items where the PCB Articles are no longer intact and nonleaking are regulated for disposal as PCB bulk product waste under Section 761.62(a) or (c).	Management of PCB waste for storage or disposal—**applicable**	40 *CFR* 761.50(b)(2)	X		During deactivation PCB articles may be stored or placed in storage containers if appropriate, and managed in appropriate storage areas until the OSWDF is available to receive. Otherwise, articles will be disposed off site at appropriate licensed and permitted facilities. Management of PCB items during demolition will be described in the demolition plan.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Demolition of a facility containing RACM	Remove all RACM from the facility before demolition and follow the procedures for asbestos emission control and RACM handling as appropriate and detailed in 40 *CFR* 61.145(c)(1) through (7) [*OAC* 3745-20-04(A)(1) through (7)].	Demolition of a facility that contains RACM exceeding the volume requirements of 40 *CFR* 61.145(a)(1) [*OAC* 3745-20-02(B)]—**applicable**	40 *CFR* 61.145(a)(1) *OAC* 3745-20-04 (A)(1)	X		Abatement contractors will be selected based on appropriate qualifications and will use appropriate control techniques.
	RACM need not be removed before demolition if: • It is Category I nonfriable ACM that is not in poor condition and is not friable;		40 *CFR* 61.145 (c)(1)(i) *OAC* 3745-20-04 (A)(1)(a)	X		Category I and II nonfriable ACM that is not practical to remove and has low potential for fiber release during the D&D process may be left in place for building demolition and disposal at the OSWDF. The determination of nonfriability is based on process knowledge and the definition of friability which is based on crumbled, pulverized, or reduced to powder by hand pressure.
	• It is on a facility component that is encased in concrete or other similarly hard material and is adequately wet whenever exposed during demolition;		40 *CFR* 61.145 (c)(1)(ii) *OAC* 3745-20-04 (A)(1)(b)	X		See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Demolition of a facility containing RACM (continued)	• It is not accessible for testing and was, therefore, not discovered until after demolition began and, as a result of the demolition, the material cannot be safely removed (exposed RACM and asbestos-contaminated debris must be adequately wet at all times); or		40 *CFR* 61.145 (c)(1)(iii) *OAC* 3745-20-04 (A)(1)(c)	X		See above.
	• It is Category II nonfriable ACM and the probability is low that the materials will become crumbled, pulverized, or reduced to powder during demolition.		40 *CFR* 61.145 (c)(1)(iv) *OAC* 3745-20-04 (A)(1)(d)	X		See above.
Management of ACM prior to disposal	Discharge no visible emissions to the outside air or use one of the emission control and waste treatment methods specified in paragraphs (a)(1) through (a)(4) of 40 *CFR* 61.150 [paragraphs (B)(1) through (B)(4) of *OAC* 3745-20-05].	Generation, collection, processing, packaging, and transportation of any asbestos-containing waste material that is not Category I or II nonfriable ACM waste that did not become crumbled, pulverized, or reduced to powder [40 *CFR* 61.150(a)(5)]—**applicable**	40 *CFR* 61.150(a) *OAC* 3745-20-05(B)	X	X	Adequate wetting of ACM will be applied to ensure no visible emissions.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Management of ACM prior to disposal (continued)	For facilities demolished where the RACM is not removed prior to demolition according to §§61.145(c)(i) – (iv) [*OAC* 3745-20-04(A)(1) or (D)], adequately wet ACM at all times after demolition and keep wet during handling and loading for transport. Such ACM does not have to be sealed in leak-tight containers or wrapping but may be transported and disposed of in bulk in leak-tight transport vehicles that are securely covered or enclosed and cause no visible emissions.		40 *CFR* 61.150(a)(3) *OAC* 3745-20-05 (B)(2)	X		See above.
	As applied to demolition and renovation, the requirements of 40 *CFR* 61.150(a) [*OAC* 3745-20-05(B) and (C)] do not apply to Category I or II nonfriable ACM that has not been crumbled, pulverized, or reduced to powder.		40 *CFR* 61.150(a)(5) *OAC* 3745-20-05 (B)(5)	X		See above.
	All asbestos-containing waste material shall be deposited as soon as practicable at a waste disposal site operated in accordance with the provisions of 40 *CFR* 61.154 [*OAC* 3745-20-06] or an EPA-approved site that converts RACM and asbestos-containing waste materials into nonasbestos (asbestos-free) materials according to the provisions of 40 *CFR* 61.155 [*OAC* 3745-20-13].		40 *CFR* 61.150 (b)(1) - (2) *OAC* 3745-20-05(A)	X	X	Adequate wetting of ACM will be applied to ensure no visible emissions. Transite panels will be packaged as required in the OSWDF Impacted Material Placement Plan.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Management of ACM prior to disposal (continued)	The requirements of 40 *CFR* 61.150(b)(1) and (2) do not apply to Category I nonfriable ACM that is not RACM.		40 *CFR* 61.150(b)(3)	X	X	Transite panels will be packaged as required in the OSWDF Impacted Material Placement Plan.
Characterization and management of universal waste	A large quantity handler of universal waste is prohibited from disposing, diluting, or treating universal waste except in accordance with 40 *CFR* 273 [*OAC* 3745-273-33 or 3745-273-37].	Generation of universal waste [as defined in 40 *CFR* 273 and *OAC* 3745-273] for disposal—**applicable**	40 *CFR* 273.31 *OAC* 3745-273-31	X		Universal waste will not be diluted. Disposal of universal waste will be accomplished by an appropriately licensed and permitted disposal or recycle facility. Limited quantities of universal waste that cannot be segregated during deactivation will become part of a heterogeneous demolition waste stream for on-site disposal.
	A large quantity handler of universal waste must manage universal waste in accordance with 40 *CFR* 273 [*OAC* 3745-273-33] in a way that prevents releases of any universal waste or component of a universal waste to the environment.		40 *CFR* 273.33 *OAC* 3745-273-33(A)	X	X	Universal waste will be managed to prevent release of universal waste or a component of universal waste into the environment.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Characterization and management of universal waste (continued)	A large quantity handler of universal waste must contain any universal waste battery that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. Container must be closed, structurally sound, compatible with the contents of the battery, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.	Generation of universal waste batteries [as defined in 40 *CFR* 273.9 and *OAC* 3745-273-02] — **applicable**	40 *CFR* 273.33(a)(1) *OAC* 3745-273-33 (A)(1)		X	See above. Containers used for universal waste batteries will be structually sound and will remain closed when not being used.
	A large quantity handler of universal waste pesticide must contain the pesticide in a container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. A leaking pesticide container must be put into an overpack container, tank, or transport container, as detailed in 40 *CFR* 273.33(b) [*OAC* 3745-273-33(B)].	Generation of universal waste pesticides [as defined in 40 *CFR* 273.9 and *OAC* 3745-273-03] — **applicable**	40 *CFR* 273.33(b) *OAC* 3745-273-33 (B)(1) – (4)		X	Large quanities of universal waste pesticides are not expected to be generated.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Characterization and management of universal waste (continued)	A large quantity handler of universal waste must contain any mercury-containing equipment that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container.	Generation of universal waste mercury-containing equipment [as defined in 40 *CFR* 273.9 and *OAC* 3745-273-04] — **applicable**	40 *CFR* 273.33(c)(1) *OAC* 3745-273-33 (C)(1)		X	Containers used for universal waste mercury-containing equipment will be structually sound and will remain closed when not being used.
	Container must be closed, structurally sound, compatible with the contents of the thermostat, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.					
	May remove the mercury-containing ampule or the open original housing holding the mercury from mercury-containing equipment and manage and dispose of it in accordance with regulations.		40 *CFR* 273.33 (c)(2) – (4) *OAC* 3745-273-33 (C)(2) – (4)		X	Universal waste will be labeled as appropriate.
	Must label or mark the universal waste to identify the type of universal waste.		40 *CFR* 273.34 *OAC* 3745-273-34	X	X	Universal waste will be labeled as appropriate.
	Batteries, or container or tank in which the batteries are contained, must be labeled or marked clearly with any one of the following phrases: “Universal Waste – Battery(ies)” or “Waste Batter(ies)” or “Used Battery(ies).”		40 *CFR* 273.34(a) *OAC* 3745-273-34(A)		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Characterization and management of universal waste (continued)	A container, tank, transport vehicle or vessel in which recalled or unused pesticides are contained must be labeled or marked clearly with the label that was on or accompanied the product and the word "Universal Waste – Pesticide(s)" or "Waste – Pesticide(s)."		40 *CFR* 273.34 (b) and (c) *OAC* 3745-273-34 (B) and (C)		X	Large quanities of universal waste pesticides are not expected to be generated.
	Mercury-containing equipment or a container in which the equipment is contained must be labeled or marked clearly with any of the following phrases: "Universal Waste – Mercury-Containing Equipment" or Waste Mercury-Containing Equipment" or "Used Mercury-Containing Equipment."		40 *CFR* 273.34(d)(1) *OAC* 3745-273-34 (D)(1)		X	Universal waste will be labeled as appropriate.
	Mercury-containing thermostats or containers containing only these thermostats must be labeled or marked clearly with any of the following phrases: "Universal Waste – Mercury Thermostat(s)" or "Waste Mercury Thermostat(s)" or "Used Mercury Thermostat(s)."		40 *CFR* 273.34(d)(2) *OAC* 3745-273-34 (D)(2)		X	Universal waste will be labeled as appropriate.
	May accumulate waste for no longer than 1 year from the date the waste is generated or received from another handler unless the requirements of 40 *CFR* 273.35(b) [*OAC* 3745-273-35 (B)] are met.		40 *CFR* 273.35(a) *OAC* 3745-273-35(A)	X	X	Universal waste will not be accumulated for longer than 1 year unless accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Characterization and management of universal waste (continued)	May accumulate universal waste for longer than 1 year from the date the universal waste is generated or received from another handler if such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal. However, the handler bears the burden of proving that such activity was solely for this purpose.		40 *CFR* 273.35(b) *OAC* 3745-273-35(B)	X	X	Universal waste will not be accumulated for longer than 1 year unless accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal.
	Shall ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relative to their responsibilities during normal facility operations and emergencies.		40 *CFR* 273.36 *OAC* 3745-273-36	X	X	All employees managing universal waste will be appropriately trained and qualifed.
	A large quantity handler of universal waste must immediately contain all releases of universal wastes and other residues from universal wastes, and must determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements.		40 *CFR* 273.37 *OAC* 3745-273.37	X	X	All releases of universal waste will be contained. Recovered material will be managed as hazardous waste. Limited quantities of universal waste that cannot be segregated during deactivation will become part of a heterogeneous waste stream for on-site disposal.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Characterization and management of universal waste (continued)	Must keep a record of each shipment of universal waste received and sent from the facility and retain record for at least 3 years. Record must include waste handler, shipper, or destination facility name and address, quantity and type of waste, and date shipment left or was received at facility.		40 *CFR* 273.39 *OAC* 3745-273.39	X	X	Appropriate records of universal waste shipments will be maintained.
Management of universal waste lamps (fluorescent, mercury vapor)	A large quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage of hazardous constituents under reasonably foreseeable conditions.	Generation of universal waste lamps [as defined in 40 *CFR* 273.9 and *OAC* 3745-273-05]—**applicable**	40 *CFR* 273.33(d)(1) *OAC* 3745-273-33 (D)(1)	X	X	All containers used for lamps will be structually sound and will remain closed when not being used. Limited quantities of universal waste lamps that cannot be segregated during deactivation will become part of a heterogeneous waste stream for on-site disposal.
	A large quantity handler of universal waste lamps must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment.		40 *CFR* 273.33(d)(2) *OAC* 3745-273-33 (D)(2)	X	X	All releases of universal waste will be contained. Recovered material will be managed as hazardous waste.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Management of universal waste lamps (fluorescent, mercury vapor) (continued)	Each lamp or container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: "Universal Waste-Lamp(s)," or "Waste Lamps," or "Used Lamps."		40 *CFR* 273.34(e) *OAC* 3745-273-34(E)	X	X	Universal waste will be labeled as appropriate.
	Mark or label the individual item with the date the lamp(s) became a waste, or mark or label the container or package with the date the wastes were received.		40 *CFR* 273.35(c) *OAC* 3745-273-35(C)	X	X	Universal waste will be labeled as appropriate.
Management of used oil	Used oil shall not be stored in a unit other than a tank, container, or RCRA regulated unit.	Generation and storage of used oil, as defined in 40 *CFR* 279.1 [*OAC* 3745-279-01 (A)(12)], that meets the applicability requirements of 40 *CFR* 279.10 —**applicable**	40 *CFR* 279.22(a) *OAC* 3745-279-22(A)	X	X	Used oil will be stored only in appropriate tanks and/or containers.
	Containers and aboveground tanks used to store used oil must be in good condition (no severe rusting, apparent structural defects, or deterioration) and not leaking (no visible leaks).		40 *CFR* 279.22 (b)(1)and (2) *OAC* 3745-279-22 (B)(1) and (2)	X	X	Used oil will be stored only in appropriate tanks and/or containers. Tanks and containers will be of appropriate quality. Leaking containers will be over-packed or contents transferred to another nonleaking container.
	Containers and aboveground tanks used to store used oil and fill pipes used to transfer used oil into USTs must be labeled or marked clearly with the words "Used Oil."		40 *CFR* 279.22 (c)(1) and (2) *OAC* 3745-279-22 (C)(1)	X	X	Used oil containers will be labeled as appropriate.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Management of used oil (continued)	Upon detection of a release of used oil to the environment, a generator must stop the release; contain, cleanup, and properly manage the released used oil; and, if necessary, repair or replace any leaking used oil storage containers or tanks prior to returning to service.	Release of used oil to the environment—**applicable**	40 *CFR* 279.22(d) *OAC* 3745-279-22(D)	X	X	Spill and releases of used oil to the environment will be contained and cleaned up. Leaking tanks and containers will be either repaired or removed from service.
Disposal of hazardous used oil	Used oils that are identified as a hazardous waste and cannot be recycled in accordance with *OAC* 3745-279 must be managed in accordance with the hazardous waste management requirements of *OAC* 3745-50 to 3745-69, 3745-205, 3745-256, 3745-266, and 3745-270.	Generation of used oil—**applicable**	40 *CFR* 279.81(a) *OAC* 3745-279-81(A)		X	Used oils that are determined to be hazardous and cannot be recycled will be managed in accordance with the hazardous waste management requirements.
Disposal of nonhazardous used oils	Used oils that are not hazardous wastes and cannot be recycled under *OAC* 3745-279 must be disposed in accordance with the applicable requirements of *OAC* 3745-27, 3745-28, 3745-29, and 3745-30.		40 *CFR* 279.81(b) *OAC* 3745-279-81(B)		X	Used oils that are not hazardous waste will be managed and disposed as solid waste.
Management of PCB waste	Any person storing or disposing of PCB waste must do so in accordance with 40 *CFR* 761, Subpart D.	Storage or disposal of waste containing PCBs at concentrations ≥ 50 ppm—**applicable**	40 *CFR* 761.50(a)	X	X	Storage of PCB waste will be in compliance with the TSCA Compliance Agreement and will be done indoors to ensure no spread of PCB contamination.
	Any person cleaning up and disposing of PCBs shall do so based on the concentration at which the PCBs are found.	Cleanup or disposal of PCB remediation waste as defined in 40 *CFR* 761.3—**applicable**	40 *CFR* 761.61	X	X	PCB waste will be categorized and managed consistent with the as-found concentrations.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Cleanup of new PCB spills	Spills shall be cleaned up in accordance with 40 *CFR* 761, Subpart G, "PCB Spill Cleanup Policy." This policy does not apply to existing spills (old spills which occurred prior to May 4, 1987).	Release into the environment of materials containing PCBs at ≥ 50 ppm, which occurs after May 4, 1987—**applicable**	40 *CFR* 761.125		X	Spills of materials containing PCBs at ≥ 50 ppm will be cleaned up in compliance with the PCB Spill Cleanup Policy.
	There may be exceptional spill situations that require less stringent cleanup or a different approach to cleanup because of factors associated with the particular spill. These factors may mitigate expected exposures and risks or make cleanup to these requirements impracticable.		40 *CFR* 761.120 (a)(4)		X	The cleanup of spills will take into account the spill location and the status of the location relative to ongoing remediation activities. Where applicable, spill cleanup will adhere to the requirements of the TSCA Compliance Agreement.
Decontamination of PCB-contaminated materials prior to use, reuse, distribution in commerce, or disposal as a non-TSCA waste	Chopping (including wire chopping), distilling, filtering, oil/water separation, spraying, soaking, wiping, stripping of insulation, scraping, scarification or the use of abrasives or solvents may be used to remove or separate PCBs to the decontamination standards for liquids, concrete, or nonporous surfaces, as listed in 40 *CFR* 761.79(b).	Generation of PCB wastes, including water, organic liquids, nonporous surfaces (scrap metal from disassembled electrical equipment), concrete, and nonporous surfaces covered with porous surfaces, such as paint or coating on metal—**applicable**	40 *CFR* 761.79(b)	X	X	Decontamination of PCB-contaminated equipment or surfaces is not expected to be performed. PCB-contaminated wastes will be disposed in compliance with established on-site or off-site WAC and material placement requirements or as mandated in the TSCA Compliance Agreement.
Decontamination of water containing PCBs to levels acceptable for discharge	For water discharged to a treatment works or to navigable waters, decontaminate to < 3 µg/L (approximately < 3 ppb) or a PCB discharge limit included in a permit issued under Section 304(b) or 402 of the CWA; or	Discharge of water containing PCBs to a treatment works or navigable waters—**applicable**	40 *CFR* 761.79 (b)(1)(ii)	X	X	PCB-contaminated wastewater and storm water will be discharged in compliance with the site NPDES permit or it will be demonstrated the discharge will comply with water quality standards pursuant to *OAC* 3745-1.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Decontamination of water containing PCBs to levels acceptable for unrestricted use	Decontaminate to ≤ 0.5 µg/L (approximately ≤ 0.5 ppb) for unrestricted use.	Release of water containing PCBs for unrestricted use—**applicable**	40 *CFR* 761.79 (b)(1)(iii)	X	X	Wastewater generated as a result of deactivation and demolition activities will be evaluated for PCB contamination and will be routed through the appropriate treatment system in consultation with Ohio EPA and in recognition of the requirements and compliance approach per 40 *CFR* 761.79(b)(1)(ii) (above). This consultation will ensure the decontamination standard will be met as well as applicable Ohio EPA water quality standards.
Decontamination of organic liquids or nonaqueous inorganic liquids containing PCBs	For organic liquids or nonaqueous inorganic liquids containing PCBs, decontamination standard is < 2 mg/kg (i.e., < 2 ppm) PCBs.	Release of organic liquids or nonaqueous liquid containing PCBs—**applicable**	40 *CFR* 761.79(b)(2)	X	X	Decontamination of PCB contaminated equipment or surfaces are not expected to be performed. Any liquids (organic or nonaqueous) containing PCBs will be shipped off site.
Decontamination of nonporous surfaces in contact with liquid PCBs to levels acceptable for unrestricted use	For nonporous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, ≤ 10 µg PCBs per 100 square centimeters (≤ 10 µg/100 cm^2) as measured by a standard wipe test (40 *CFR* 761.123) at locations selected in accordance with Subpart P of 40 *CFR* 761.	Release of nonporous surfaces in contact with liquid PCBs at any concentration for unrestricted use—**applicable**	40 *CFR* 761.79 (b)(3)(i)(A)	X	X	Decontamination and release of PCB-contaminated equipment or a surface for unrestricted use is not expected to be performed. PCB-contaminated wastes will be disposed in the OSWDF in a compliance with established WAC.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Decontamination of nonporous surfaces in contact with nonliquid PCBs to levels acceptable for unrestricted use	For nonporous surfaces in contact with nonliquid PCBs (including nonporous surfaces covered with a porous surface, such as paint or coating on metal), clean to Visual Standard No. 2, Near-White Blast Cleaned Surface Finish of the NACE. A person shall verify compliance with standard No. 2 by visually inspecting all cleaned areas.	Release of nonporous surfaces in contact with nonliquid PCBs for unrestricted use— **applicable**	40 *CFR* 761.79 (b)(3)(i)(B)	X	X	Decontamination and release of PCB-contaminated equipment or a surface for unrestricted use is not expected to be performed. PCB-contaminated wastes will be disposed in the OSWDF in a compliance with established WAC.
Decontamination of nonporous surfaces in contact with liquid PCBs to levels acceptable for disposal in a TSCA smelter	For nonporous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, decontaminate to < 100 µg/ 100 cm^2 as measured by a standard wipe test (Section 761.123) at locations selected in accordance with Subpart P of 40 *CFR* 761.	Disposal of nonporous surfaces previously in contact with liquid PCBs at any concentration into a smelter operating in accordance with Section 761.72(b)— **applicable**	40 *CFR* 761.79 (b)(3)(ii)(A)	X	X	Decontamination and release of PCB-contaminated equipment or a surface for smelter disposal is not expected to be performed. PCB-contaminated wastes will be disposed in the OSWDF in a compliance with established WAC.
Decontamination of nonporous surfaces in contact with nonliquid PCBs to levels acceptable for disposal in a TSCA smelter	For nonporous surfaces in contact with nonliquid PCBs (including nonporous surfaces covered with a porous surface, such as paint or coating on metal) clean to Visual Standard No. 3, Commercial Blast Cleaned Surface Finish, of the NACE. A person shall verify compliance with Standard No. 3 by visually inspecting all cleaned areas.	Disposal of nonporous surfaces in contact with nonliquid PCBs into a smelter operating in accordance with Section 761.72(b) — **applicable**	40 *CFR* 761.79 (b)(3)(ii)(B)	X	X	Decontamination and release of PCB-contaminated equipment or a surface for unrestricted use is not expected to be performed. PCB-contaminated wastes will be disposed in the OSWDF in a compliance with established WAC.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Decontamination of concrete recently contaminated with PCBs	Decontamination standard for concrete is < 10 µg/100 cm^2 as measured by a standard wipe test (Section 761.123) if the decontamination procedure is commenced within 72 hours of the initial spill of PCBs to the concrete or portion thereof being decontaminated.	Decontamination of concrete within 72 hours of the initial spill of PCBs to the concrete—**applicable**	40 *CFR* 761.79(b)(4)	X	X	Decontamination of PCB-contaminated equipment or surfaces are not expected to be performed. PCB-contaminated wastes will be disposed in the OSWDF in a compliance with established WAC. New spills will be addressed consistent with the TSCA Compliance Agreement.
Disposal of materials previously contaminated with PCBs as non-TSCA waste	Materials from which PCBs have been removed by decontamination in accordance with 40 *CFR* 761.79, not including decontamination wastes and residuals under 40 *CFR* 761.79(g), are considered unregulated for disposal under Subpart D of TSCA (40 *CFR* 761).	Disposal of materials from which PCBs have been removed—**applicable**	40 *CFR* 761.79(a)(4)	X	X	Disposal of waste may be on site or off site in accordance with disposal facility WAC.
Risk-based decontamination of PCB-containing materials	May decontaminate to an alternate risk-based decontamination standard under 40 *CFR* 761.79(h) if the standard does not pose an unreasonable risk of injury to health or the environment.	Decontamination of materials contaminated with PCBs—**applicable**	40 *CFR* 761.79(h)	X	X	It is not anticipated to impose any alternate based decontamination. PCB-contaminated wastes will be disposed in compliance with established WAC.
Management of PCB/radioactive waste	Any person storing such waste ≥ 50 ppm PCBs must do so taking into account both its PCB concentration and radioactive properties, except as provided in 40 *CFR* 761.65(a)(1), (b)(1)(ii) and (c)(6)(i).	Generation of PCB/ radioactive waste for disposal—**applicable**	40 *CFR* 761.50 (b)(7)(i)	X	X	Storage of PCB-contaminated demolition materials will be conducted in such a manner as to prevent the spread of PCB contamination.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Management of PCB/radioactive waste (continued)	Any person disposing of such waste must do so taking into account both its PCB concentration and its radioactive properties.		40 *CFR* 761.50 (b)(7)(ii)	X	X	Disposal of PCB waste will be in accordance with disposal facility WAC. Off-site disposal would be at an appropriately licensed and permitted facility
	If, after taking into account only the PCB properties in the waste, the waste meets the requirements for disposal in a facility permitted, licensed, or registered by a state as a municipal or nonmunicipal nonhazardous waste landfill, then the person may dispose of such waste without regard to the PCBs, based on its radioactive properties alone.		40 *CFR* 761.50 (b)(7)(ii)	X	X	Disposal of PCB waste will be in accordance with disposal facility WAC. Off-site disposal would be at an appropriately licensed and permitted facility (e.g., not in a municipal landfill).
Handling of regulated materials associated with an UST site	The handling, transportation, and disposal of any regulated substance removed from an UST system, regulated soil, backfill materials, ground water, wash water, or other similar materials removed from the system or facility shall be managed in accordance with all applicable federal, state, and local regulations in effect for the type, volume, constituent concentration, and classification of the material.	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12(C)	X		Substances removed from USTs or generated from managing USTs will be evaluated and managed in accordance with all applicable federal, state, and local regulations.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Removing a UST from service for greater than 90 days	Remove the contents of the UST such that there is no more than 1 in. of residue or 0.3 percent by volume of the total capacity of the UST system. Ensure all vent lines remain open and functioning. Cap and secure all other lines, pumps, manways, and ancillary equipment.	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (E)(3)(a-c)	X		Contents will be removed and dispositioned. Existing vents will be maintained usable and open until permanent removal. Other access and lines will be capped and secured.
Permanent removal of a UST system	The UST shall be maintained in a safe condition to ensure that an accumulation of explosive vapors does not occur.	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (G)(1)(c)	X		Deactivated USTs will be maintained in compliance with *OAC* 1301:7-9-12(E)(3) (a-c) until removed.
Closure Assessment of UST systems	Perform a visual site evaluation of the UST site to identify all evidence of past or present operational problems	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (I)(2)(a)	X		Visual inspection will be completed as part of the UST closure assessment process.
	Perform soil sampling biased towards the areas of greatest suspected contamination	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (I)(2)(b)(i-v)	X		Soil sampling conducted as part of UST closure assessment will be biased to ensure collection of samples from the areas of greatest suspected contamination.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Closure Assessment of UST systems (continued)	Remove water from the UST excavation, dispose in an appropriate manner, and conduct water sampling if water cannot be evacuated or recharge occurs.	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (I)(2)(c)	X		Water infiltrating a UST excavation will be removed and dispositioned according to contaminants present. If water infiltration cannot be limited, water in the excavation area will be sampled for determination of necessity for removal, based on contaminants present.
	All samples collected shall be sent to an accredited laboratory for analysis	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (I)(2)(d)	X		Samples requiring laboratory analysis will occur at an accredited laboratory.
	Contaminants of concern are determined based on the analytical group pursuant to *OAC* 1301:7-9-13(H)(1)(c)	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (I)(3)(a)	X		Laboratory analysis of samples will identify the analytical group of the contaminants, as applicable.
	Action level development and comparison; requires action level assumptions to include soils being class 1 soils, that groundwater exists and is used for drinking water; and the final land use will be residential	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (I)(4)(a)	X		Action level development will utilize the default assumptions identified in *OAC* 1301:7-9-12(I)(4)(a)
	Action level development and comparison; requires action level determinations for analytical groups 1, 2, and 3 pursuant to *OAC* 1301:7-9-13(H)(1)(c) to be obtained from Table 1 of *OAC* 1301:7-9-12(I)(4)(b)(i)	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (I)(4)(b)(i)	X		For UST systems that contained petroleum products in analytical group 1, 2 or 3, action levels from Table 1 will be applied.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Closure Assessment of UST systems (continued)	Action level development and comparison; If the analytical results exceed the action levels in Table 1 of *OAC* 1301:7-9-12(b)(i) then proceed to corrective action in accordance with *OAC* 1301:7-9-13(H). If analytical results are below all applicable action levels then no further action is required.	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**applicable**	*OAC* 1301:7-9-12 (I)(4)(c)(i)(a) and (b)	X		Where analytical results exceed the action levels in Table 1, corrective action in accordance with *OAC* 1301:7-9-13(H) will be implemented.
Petroleum UST Corrective Action	A Tier 1 source investigation is to determine the concentrations of chemicals of concern in the source area	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**Relevant and Appropriate**	*OAC* 1301:7-9-13 (H)(1)	X		A Tier 1 Source Investigation will be conducted for petroleum USTs and related equipment and piping and dispensing systems.
	Conduct a determination of the appropriate action levels for an UST site	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**Relevant and Appropriate**	*OAC* 1301:7-9-13 (H)(2)	X		Action levels will be determined based on the requirements presented in the regulation.
	Conduct a Tier 1 delineation to define the vertical and horizontal extent of chemicals of concern in soil and groundwater	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**Relevant and Appropriate**	*OAC* 1301:7-9-13 (I)(1)	X		A Tier 1 Source Investigation will be conducted for petroleum USTs and related equipment and piping and dispensing systems.
	Develop a remedial action plan that describes the remedial action to be undertaken, the proposed target levels identified by chemical of concern and environmental media	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**Relevant and Appropriate**	*OAC* 1301:7-9-13 (N)(1)(a&b)	X		A remedial action plan will be developed that will identify COCs and their respective target levels, the excavation/certification methodology and the management of all soils and waste generated.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Petroleum UST Corrective Action (continued)	Alternative methodologies and technologies may be used if the alternative methodology and technology is at least as effective as those required by this rule	Out of Service, Closure in Place, Permanent Removal, Change in Service, and Closure Assessment of UST Systems—**Relevant and Appropriate**	*OAC* 1301:7-9-13 (R)(1)(a)	X		In the event that an alternative methodology or technology is pursued, the alternative will be demonstrated to be at least as effective as those required under the regulation.
		Storage				
Storage of hazardous wastes restricted from land disposal	Prohibits storage of hazardous waste restricted from land disposal unless the generator stores such waste in tanks, containers, or containment buildings on site solely for the purpose of accumulating such quantities as necessary to facilitate proper recovery, treatment, or disposal.	Accumulation of hazardous wastes restricted from land disposal solely for purpose of accumulation of quantities as necessary to facilitate proper recovery, treatment, or disposal—**applicable**	40 *CFR* 268.50 *OAC* 3745-270-50	X	X	Storage of hazardous waste will be minimized. Storage areas will be identified and controlled to protect human health and the environment. Appropriate containment will be provided based on the hazardous waste encountered.
Temporary storage and accumulation of hazardous waste in containers on site	A generator may accumulate hazardous waste at the facility provided that: • The waste is placed in containers that comply with the applicable requirements in 40 *CFR* 265.171-173 (Subpart I) [*OAC* 3745-66-70 to 3745-66-73],	Accumulation of RCRA hazardous waste on site as defined in 40 *CFR* 260.1—**applicable**	40 *CFR* 262.34 (a)(1)(i) *OAC* 3745-52-34 (A)(1)(a)	X	X	Hazardous waste will be accumulated and managed in appropriate containers that are appropriately labeled.
	• Container is marked with the date upon which each period of accumulation begins,		40 *CFR* 262.34(a)(2) *OAC* 3745-52-34 (A)(2)	X	X	See above.
	• Container is marked with the words “hazardous waste,”		40 *CFR* 262.34(a)(3) *OAC* 3745-52-34 (A)(3)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage and accumulation of hazardous waste in containers on site (continued)	• The generator complies with the requirements in paragraph (A)(5) of rule 3745-270-07 and rules 3745-65-16, 3745-65-30 to 3745-65-37, and 3745-65-50 to 3745-65-56 of the Administrative Code.		40 *CFR* 262.34(a)(4) *OAC* 3745-52-34 (A)(4)	X	X	See above.
	Generator is exempt from all requirements in rules 3745-66-10 to 3745-66-21 and 3745-66-40 to 3745-66-48 of the Administrative Code except for paragraphs (A) and (B) of rule 3745-66-11 and rule 3745-66-14 of the Administrative Code.		40 *CFR* 262.34(a)(1) *OAC* 3745-52-34 (A)(1)(e)	X	X	Hazardous waste will be accumulated and managed in appropriate containers that are appropriately labeled.
	Container must be marked with either the words "Hazardous Wastes" or with other words that identify the contents.	Accumulation of 55 gal or less of hazardous waste or 1 qt or less of acutely hazardous waste at or near any point of generation—**applicable**	40 *CFR* 262.34 (c)(1)(ii) *OAC* 3745-52-34 (C)(1)(b)	X	X	Hazardous waste will be accumulated and managed in appropriate containers that are appropriately labeled.
	For the excess waste, must comply within 3 days with the requirements of *OAC* 3745-52-34(A) or other applicable provisions of Chapter 3745-52 of the Administrative Code. During the 3-day period, comply with *OAC* 3745-52-34(C)(1)(a) and (b). Must mark container holding excess accumulation with the date the excess accumulation began.		40 *CFR* 262.34(c)(2) *OAC* 3745-52-34 (C)(2)	X	X	Hazardous waste will be accumulated and managed in appropriate containers that are appropriately labeled. Any such hazardous waste will be accumulated and stored in accordance with ARARs and will be disposed as soon as practicable given the need to coordinate efficient transportation and disposal management.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Accumulation of rejected shipments of hazardous waste	A generator who receives a shipment of hazardous waste back as a rejected load or residue from a facility in accordance with a manifest discrepancy may accumulate the waste on-site in accordance with paragraphs (A) and (B) or (D), (E), and (F) of *OAC* 3745-52-34 depending on the amount of hazardous waste on site in that calendar month.	Accumulation of RCRA hazardous waste on site as defined in 40 *CFR* 260.10 —**applicable**	40 *CFR* 262.34(m) *OAC* 3745-52-34(M)	X	X	Hazardous waste resulting from a rejected shipment will be accumulated and managed in appropriate containers that are appropriately labeled.
Management of hazardous waste stored in containers	If container is not in good condition (e.g., severe rusting, structural defects) or if it begins to leak, must transfer waste into container in good condition.	Storage of RCRA hazardous waste in containers—**applicable**	40 *CFR* 264.171 *OAC* 3745-55-71	X	X	Hazardous waste will be placed only in containers of acceptable quality. Containers showing signs of significant defects will be over-packed or contents removed to an acceptable container.
	Use container made or lined with materials compatible with waste to be stored so that the ability of the container is not impaired.		40 *CFR* 264.172 *OAC* 3745-55-72	X	X	Appropriate containers will be selected based on compatibility with the waste being stored.
	Keep containers closed during storage, except to add/remove waste.		40 *CFR* 264.173(a) *OAC* 3745-55-73(A)	X	X	Containers used to store hazardous waste will be closed when not in use.
	Open, handle, and store containers in a manner that will not cause containers to rupture or leak.		40 *CFR* 264.173(b) *OAC* 3745-55-73(B)	X	X	Hazardous waste will be accumulated and managed in a manner that will not cause containers to rupture or leak.
Inspection of RCRA container storage area	At least weekly, must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.	Storage of RCRA hazardous waste in containers—**applicable**	40 *CFR* 264.174 *OAC* 3745-55-74	X	X	All hazardous waste storage locations will be evaluated periodically to ensure proper storage.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Operation of a RCRA container storage area	Area must be sloped or otherwise designed and operated to drain liquid from precipitation, or containers must be elevated or otherwise protected from contact with accumulated liquid.	Storage in containers of RCRA hazardous wastes that do not contain free liquids—**applicable**	40 *CFR* 264.175(c) *OAC* 3745-55-75(C)	X	X	The storage of hazardous waste without free liquids will be sloped or designed to drain precipitation or otherwise protect the containers from contact with the liquid from precipitation.
Storage of RCRA hazardous waste with free liquids in containers	Area must have a containment system designed and operated in accordance with 40 *CFR* 264.175(b) [*OAC* 3745-55-75(B)] as follows:	Storage of RCRA hazardous waste with free liquids or F020, F021, F022, F023, F026, and F027 in containers—**applicable**	40 *CFR* 264.175 (a) and (d) *OAC* 3745-55-75 (A) and (D)	X	X	The storage of hazardous waste with free liquids or specified listed contents in containers will be done on an impervious base, designed to protect from contact with accumulated liquids, have sufficient capacity, and be protected from run-on. Spilled or leaked material will be removed in a timely manner.
	• A base must underlie the containers that is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;		40 *CFR* 264.175(b)(1) *OAC* 3745-55-75 (B)(1)	X	X	See above.
	• Base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;		40 *CFR* 264.175(b)(2) *OAC* 3745-55-75 (B)(2)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Storage of RCRA hazardous waste with free liquids in containers (continued)	• Must have sufficient capacity to contain 10% of the volume of containers or volume of largest container, whichever is greater;		40 *CFR* 264.175(b)(3) *OAC* 3745-55-75 (B)(3)	X	X	See above.
	• Run-on into the system must be prevented unless the collection system has sufficient capacity to contain along with volume required for containers; and		40 *CFR* 264.175(b)(4) *OAC* 3745-55-75 (B)(4)	X	X	See above.
	• Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in a timely manner as or necessary to prevent overflow.		40 *CFR* 264.175(b)(5) *OAC* 3745-55-75 (B)(5)	X	X	Any hazardous waste released will be recovered immediately. Any collected precipitation will be removed and discharged through the appropriate treatment system.
Storage of ignitable or reactive waste in containers	Containers holding ignitable or reactive waste must be located at least fifteen meters (50 ft) from the facility's property line.	Storage of ignitable or reactive RCRA hazardous waste in containers—**applicable**	40 *CFR* 264.176 *OAC* 3745-55-76	X	X	No hazardous waste will be stored within 50 ft of the DOE property line.
Storage of incompatible waste in containers	Must not place incompatible wastes in same container unless comply with 40 *CFR* 264.17(b) [*OAC* 3745-54-17(B)].	Storage of "incompatible" RCRA hazardous wastes in containers—**applicable**	40 *CFR* 264.177(a) *OAC* 3745-55-77(A)	X	X	Incompatible wastes will not be placed in the same container.
	Waste shall not be placed in an unwashed container that previously held an incompatible waste or material.		40 *CFR* 264.177(b) *OAC* 3745-55-77(B)	X	X	Incompatible wastes will not be placed in an unwashed container that previously held an incompatible waste or material.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Storage of incompatible waste in containers (continued)	A container holding incompatible wastes must be separated from any waste or nearby materials or must protect them from one another by using a dike, berm, wall, or other device.		40 *CFR* 264.177(c) *OAC* 3745-55-77(C)	X	X	Incompatible wastes will not be placed in the same container.
Design and operation of a hazardous waste facility (e.g., storage areas)	Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.	Construction or setup of a RCRA hazardous waste facility—**applicable**	40 *CFR* 264.31 *OAC* 3745-54-31	X	X	The storage of hazardous waste will be done to prevent releases and protect workers, the environment, and the public. These storage areas will be configured based on the type of waste being managed and the anticipated duration of the storage.
Required equipment	All facilities shall be equipped with the following:		40 *CFR* 264.32 *OAC* 3745-54-32	X	X	Areas where hazardous wastes are stored will have appropriate fire extinguishers. Water spray and communications devices will be provided as appropriate based on the location of the storage area.
	• An internal communications or alarm system capable of providing immediate emergency instruction to facility personnel.		40 *CFR* 264.32(A) *OAC* 3745-54-32(A)	X	X	See above.
	• A device capable of summoning emergency assistance from local police departments, fire departments, or Ohio EPA or local emergency response teams.		40 *CFR* 264.32(B) *OAC* 3745-54-32(B)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Design and operation of a hazardous waste facility (e.g., storage areas) (continued)	• Portable fire extinguishers, fire control equipment, including but not limited to, special extinguishing equipment, such as that using foam, inert gas, or dry chemicals, spill control equipment, and decontamination equipment.		40 *CFR* 264.32(C) *OAC* 3745-54-32(C)	X	X	See above.
	• Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.		40 *CFR* 264.32(D) *OAC* 3745-54-32(D)	X	X	See above.
Hazardous waste facility – security system	Must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of this facility.	Operation of a RCRA hazardous waste facility—**applicable**	40 *CFR* 264.14(a) *OAC* 3745-54-14(A)	X	X	Existing site security measures will continue to be maintained to prevent unauthorized entry into areas used for storing hazardous waste.
	Physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility		40 *CFR* 264.14(1) *OAC* 3745-54-14(A)(1)		X	Existing site security measures will continue to be maintained to prevent unauthorized entry into areas used for storing hazardous waste.
	Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this part.		40 *CFR* 264.14(2) *OAC* 3745-54-14(A)(2)		X	Existing site security measures will continue to be maintained to prevent unauthorized entry into areas used for storing hazardous waste.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Hazardous waste facility – security system (continued)	Must have a 24-hour surveillance system which continuously monitors and controls entry onto the active portion of the facility; or an artificial or natural barrier which completely surrounds the active portion of the facility; and a means to control entry, at all times, through the gates or other entrances to the active portion of the facility.		40 *CFR* 264.14(b) *OAC* 3745-54-14(B)	X	X	Existing site security measures will continue to be maintained to prevent unauthorized entry into areas used for storing hazardous waste.
	Must post a sign with the legend "Danger – Unauthorized Personnel Keep Out" at each entrance to the active portion of a facility and at other locations in sufficient numbers to be seen from any approach in the active portion. Legend must be written in English and be legible from a distance of at least 25 ft.		40 *CFR* 264.14(c) *OAC* 3745-54-14(C)	X	X	Warning signs conforming to the visibility and specific warning requirements will be placed. The warning signs will read "Danger – Unauthorized Personnel Keep Out." The number and locations will be based on the location and configuration of the storage area, but will ensure that the warning is visible at the entrances to the storage areas and other locations based on possible approaches to the storage areas.
Hazardous waste facility – general inspection requirements	Must inspect facility for malfunctions and deterioration, operator errors, and discharges to identify any problems and remedy any deterioration or malfunction of equipment or structures on a schedule that ensures that the problem does not lead to an environmental or human health hazard.	Operation of a RCRA hazardous waste facility— **applicable**	40 *CFR* 264.15 (a) and (c) *OAC* 3745-54-15 (A) and (C)	X	X	Storage areas will be inspected periodically to ensure all control systems and security provisions are functioning properly.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Hazardous waste facility – training requirements	Facility personnel must successfully complete a program of classroom instruction or on-the-job training in accordance with the program outlined in 40 *CFR* 264.16 [*OAC* 3745-54-16] and take part in an annual review of this initial training.	Operation of a RCRA hazardous waste facility— **applicable**	40 *CFR* 264.16 *OAC* 3745-54-16	X	X	Only qualified personnel trained from existing modules will be involved in hazardous waste operations.
Hazardous waste facility – testing and maintenance of equipment	All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, shall be tested and maintained as necessary to assure its proper operation in time of emergency.	Operation of a RCRA hazardous waste facility— **applicable**	40 *CFR* 264.33 *OAC* 3745-54-33	X	X	All equipment provided at hazardous waste storage areas will be inspected and maintained.
Hazardous waste facility – access to communications or alarm system	Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation shall have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required under 40 *CFR* 264.32 [*OAC* 3745-54-32].	Operation of a RCRA hazardous waste facility— **applicable**	40 *CFR* 264.34(a) *OAC* 3745-54-34(A)	X	X	The handling of hazardous waste will be done to prevent releases and protect workers, the environment, and the public. Those involved in the storage of hazardous wastes and inspections of hazardous waste storage areas will have access to communication equipment. This may include, depending on the location where hazardous waste is being handled and facility status, access to the site-wide communication system, cell phones, or radios.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Hazardous waste facility – access to communications or alarm system (continued)	If there is only one employee on the premises while the facility is operating, such employee shall have immediate access to a device capable of summoning external emergency assistance, unless such a device is not required under 40 *CFR* 264.32 [*OAC* 3745-54-32].		40 *CFR* 264.34(b) *OAC* 3745-54-34(B)	X	X	There will always be more than one person on site and access to the Plant Shift Superintendent will always be available.
Hazardous waste facility – required aisle space	Shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be satisfactorily demonstrated that aisle space is not needed for any of these purposes.	Operation of a RCRA hazardous waste facility—**applicable**	40 *CFR* 264.35 *OAC* 3745-54-35	X	X	The storage of hazardous waste will be done to prevent releases and protect workers, the environment and the public. These storage areas will be configured based on the type of waste being managed and the anticipated duration of the storage.
Hazardous waste facility – purpose and implementation of a contingency plan	Substantive requirements will be met to minimize hazards to human health or the environment from fires, explosions or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.	Operation of a RCRA hazardous waste facility—**applicable**	40 *CFR* 264.51(a) *OAC* 3745-54-51(A)	X	X	Existing site response protocols will be maintained to respond to unplanned releases. Incidental releases will be cleaned up immediately. Formal emergency response will only be implemented if the release threatens on-site personnel or has the ability to have off-site impact.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Hazardous waste facility – purpose and implementation of a contingency plan (continued)	Substantive requirements shall be implemented immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.		40 *CFR* 264.51(b) *OAC* 3745-54-51(B)	X	X	Existing site response protocols will be maintained to respond to unplanned releases. Incidental releases will be cleaned up immediately. Formal emergency response will only be implemented if the release threatens on-site personnel or has the ability to have off-site impact.
Hazardous waste facility – content of contingency plan	Comply with the substantive requirements of §§264.51 and 264.56 [rules 3745-54-51 and 3745-54-56 of the Administrative Code] in response to fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility. 40 *CFR* 264.52(a) through (f) [*OAC* 3745-54-52(A) through (F)] describes what must be included in the Plan.	Operation of a RCRA hazardous waste facility—**applicable**	40 *CFR* 264.52 *OAC* 3745-54-52	X	X	Existing site response protocols will be maintained to respond to unplanned releases. Incidental releases will be cleaned up immediately. Formal emergency response will only be implemented if the release threatens on-site personnel or has the ability to have off-site impact.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Hazardous waste facility – emergency coordinator	At all times, there shall be at least one employee either on the facility premises or on call with responsibility for coordinating all internal emergency response measures. This coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the locations and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person shall have the authority to commit the resources needed to implement the contingency plan.	Operation of a RCRA hazardous waste facility—**applicable**	40 *CFR* 264.55 *OAC* 3745-54-55	X	X	There will always be more than one person on site with access to the PSS. The PSS and their support will be thoroughly familiar with the facility's contingency plan, activities at the facility, the locations and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, the PSS has the authority to commit the resources needed to implement the contingency plan.
Hazardous waste facility – emergency procedures	Whenever there is an imminent or actual emergency situation, the emergency coordinator, or his designee when the emergency coordinator is on call, must immediately implement the substantive requirements detailed in 40 *CFR* 264.56 [*OAC* 3745-54-56].	Operation of a RCRA hazardous waste facility—**applicable**	40 *CFR* 264.56 *OAC* 3745-54-56	X	X	Existing site response protocols will be maintained to respond to unplanned releases. Incidental releases will be cleaned up immediately. Formal emergency response will only be implemented if the release threatens on-site personnel or has the ability to have off-site impact.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – applicability	*OAC* 3745-56-50 to 3745-56-59 applies to owners and operators of facilities that store or treat hazardous waste in piles, except as *OAC* 3745-54-01 provides otherwise.	Storage of RCRA hazardous waste in a waste pile—**applicable**	40 *CFR* 264.250(a) *OAC* 3745-56-50(A)	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.
	OAC 3745-56-50 to 3745-56-59 does not apply to owners or operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulation as landfills under *OAC* 3745-57-02 to 3745-57-17.		40 *CFR* 264.250(b) *OAC* 3745-56-50(B)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – applicability (continued)	Owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to regulation under *OAC* 3745-56-51 or *OAC* 3745-54-90 to 3745-54-101, provided that: • Liquids or materials containing free liquids are not placed in the pile; and • Pile is protected from surface water run-on by the structure or in some other manner; and • Pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and Pile will not generate leachate through decomposition or other reactions.		40 *CFR* 264.250(c) *OAC* 3745-56-50(C)	X	X	See above.
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements	A waste pile (except for an existing portion of a waste pile) must have:	Storage of RCRA hazardous waste in a waste pile—**applicable**	40 *CFR* 264.251(a) *OAC* 3745-56-51(A)	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	(1) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or groundwater or surface water) during the active life of the facility. The liner must be:		40 *CFR* 264.251(a)(1) *OAC* 3745-56-51 (A)(1)	X	X	See above.
	• Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climate conditions, the stress of installation, and the stress of daily operation; and		40 *CFR* 264.251 (a)(1)(i) *OAC* 3745-56-51 (A)(1)(a)	X	X	See above.
	• Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of liner due to settlement, compression, or uplift; and		40 *CFR* 264.251 (a)(1)(ii) *OAC* 3745-56-51 (A)(1)(b)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	• Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and		40 *CFR* 264.251 (a)(1)(iii) *OAC* 3745-56-51 (A)(1)(c)	X	X	See above.
	(2) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. Design and operating conditions will be specified to ensure that the leachate depth over the liner does not exceed 30 cm (1 ft). The leachate collection and removal system must be:		40 *CFR* 264.251(a)(2) *OAC* 3745-56-51 (A)(2)	X	X	See above.
	• Constructed of materials that are: (i) chemically resistant to waste managed in the pile and the leachate expected to be generated; and (ii) of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and		40 *CFR* 264.251 (a)(2)(i) *OAC* 3745-56-51 (A)(2)(a)	X	X	See above.
	• Designed and operated to function without clogging through the scheduled closure of the waste pile.		40 *CFR* 264.251 (a)(2)(ii) *OAC* 3745-56-51 (A)(2)(b)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	The owner or operator will be exempted from the requirements of *OAC* 3745-56-51(A) if the Director finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the groundwater or surface water at any future time. In deciding whether to grant an exemption, the Director will consider the factors listed in *OAC* 3745-56-51 (B)(1) through (4).		40 *CFR* 264.251(b) *OAC* 3745-56-51(B)	X	X	See above.
	The owner or operator of each new waste pile unit, each lateral expansion of a waste pile unit, and each replacement of an existing waste pile unit must install two or more liners and a leachate collection and removal system above and between such liners.		40 *CFR* 264.251(c) *OAC* 3745-56-51(C)	X	X	See above.
	The liner system must include:		40 *CFR* 264.251 (c)(1)(i)(A) *OAC* 3745-56-51 (C)(1)(a)(i)	X	X	See above.
	• A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and postclosure care period; and			X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	• A composite bottom liner consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and postclosure care period. The lower component must be designed and constructed of materials to minimize migration of hazardous constituents if a breach in the upper component were to occur. Lower component must be constructed of at least 3 ft (91.0 cm) of compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} cm/s.		40 *CFR* 264.251 (c)(1)(i)(B) *OAC* 3745-56-51 (C)(1)(a)(ii)	X	X	See above.
	The liners must comply with paragraphs (A)(1)(a), (A)(1)(b), and (A)(1)(c) of *OAC* 3745-56-51.		40 *CFR* 264.251 (c)(1)(ii) *OAC* 3745-56-51 (C)(1)(b)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the waste pile during the active life and postclosure care period. Design and operating conditions will be specified to ensure that the leachate depth over the liner does not exceed 30 cm (1 ft). The leachate collection and removal system must comply with *OAC* 3745-56-51(C)(3)(c) and (C)(3)(d).		40 *CFR* 264.251(c)(2) *OAC* 3745-56-51 (C)(2)	X	X	See above.
	The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and postclosure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:		40 *CFR* 264.251(c)(3) *OAC* 3745-56-51 (C)(3)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	• Constructed with a bottom slope of 1 percent or more;		40 *CFR* 264.251 (c)(3)(i) *OAC* 3745-56-51 (C)(3)(a)	X	X	See above.
	• Constructed of granular drainage materials with a hydraulic conductivity of 1×10^{-2} cm/s or more and a thickness of 12 in. (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m^2/s or more;		40 *CFR* 264.251 (c)(3)(ii) *OAC* 3745-56-51 (C)(3)(b)	X	X	See above.
	• Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the waste pile;		40 *CFR* 264.251 (c)(3)(iii) *OAC* 3745-56-51 (C)(3)(c)	X	X	See above.
	• Designed and operated to minimize clogging during the active life and postclosure period; and		40 *CFR* 264.251 (c)(3)(iv) *OAC* 3745-56-51 (C)(3)(d)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	• Constructed with sumps and liquid removal methods of sufficient size to collect and remove liquids from sump and prevent liquids from backing up into drainage layer. Each unit must have its own sump(s). Design of each sump and removal system must provide a method for measuring and recording volume of liquids present in sump and of liquids removed.		40 *CFR* 264.251 (c)(3)(v) *OAC* 3745-56-51 (C)(3)(e)	X	X	See above.
	The owner or operator must collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.		40 *CFR* 264.251(c)(4) *OAC* 3745-56-51 (C)(4)	X	X	See above.
	The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of groundwater.		40 *CFR* 264.251(c)(5) *OAC* 3745-56-51 (C)(5)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	The Director may approve alternative design or operating practices if the owner or operator demonstrates that such design and operating practices, together with location characteristics: (1) will prevent the migration of any hazardous constituent into the groundwater or surface water at least as effectively as the liners and leachate collection and removal systems specified in this rule; and (2) will allow detection of leaks of hazardous constituents through the top liner at least as effectively.		40 *CFR* 264.251(d) *OAC* 3745-56-51(D)	X	X	See above.
	The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm.		40 *CFR* 264.251(g) *OAC* 3745-56-51(G)	X	X	See above.
	The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.		40 *CFR* 264.251(h) *OAC* 3745-56-51(H)	X	X	See above.
	Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.		40 *CFR* 264.251(i) *OAC* 3745-56-51(I)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.		40 *CFR* 264.251(j) *OAC* 3745-56-51(J)	X	X	See above.
Temporary storage or treatment of hazardous waste in waste piles – action leakage rate	The Director will approve an action leakage rate for waste piles subject to OAC 3745-56-51(C) or (D). The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding 1 ft. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).	Storage of RCRA hazardous waste in a waste pile—**applicable**	40 *CFR* 264.252(a) *OAC* 3745-56-52(A)	X	X	DOE does not intend to establish and operate hazardous waste pile for storage or treatment. Hazardous wastes generated during deactivation or demolition will be disposed off site. Should a hazardous waste pile become necessary, it will be established indoors to prevent the migration of hazardous wastes.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – action leakage rate (continued)	To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under paragraph (C) of *OAC* 3745-56-54 to an average daily flow rate (gal/acre/day) for each sump. Unless the Director approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.		40 *CFR* 264.252(b) *OAC* 3745-56-52(B)	X	X	See above.
Temporary storage or treatment of hazardous waste in waste piles – response actions	The owner or operator of waste pile units subject to paragraph (C) or (D) of *OAC* 3745-56-51 must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in *OAC* 3745-56-53(B).	Storage of RCRA hazardous waste in a waste pile—**applicable**	40 *CFR* 264.253(a) *OAC* 3745-56-53(A)	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.
	If the flow rate into the leak detection system exceeds the action leakage rate for any sump, owner or operator must:		40 *CFR* 264.253 (b)(1) – (6) *OAC* 3745-56-53 (B)(1) – (6)	X	X	See above.
	• Notify the director in writing of the exceedance within 7 days of the determination;			X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – response actions (continued)	• Submit a preliminary written assessment to the Director within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;			X	X	See above.
	• Determine to the extent practicable the location, size, and cause of any leak;			X	X	See above.
	• Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;			X	X	See above.
	• Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks; and			X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – response actions (continued)	• Within 30 days after notification that the action leakage rate has been exceeded, submit to the Director the results of the analyses specified in paragraphs (B)(3), (B)(4), and (B)(5) of this rule, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit a report summarizing the results of any remedial actions taken and actions planned.			X	X	See above.
	To make the leak and/or remediation determinations in *OAC* 3745-56-53(B)(3), (B)(4), and (B)(5), the owner or operator must:		40 *CFR* 264.253(c)(1)(i) – (iii) *OAC* 3745-56-53(C)(1)(a) – (c)	X	X	See above.
	• Assess the source of liquids and amounts of liquids by source;			X	X	See above.
	• Conduct fingerprint, hazardous constituent, or other analyses of liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and			X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – response actions (continued)	• Assess the seriousness of any leaks in terms of potential for escaping into the environment; or			X	X	See above.
	• Document why such assessments are not needed.		40 *CFR* 264.253(c)(2) *OAC* 3745-56-53 (C)(2)	X	X	See above.
Temporary storage or treatment of hazardous waste in waste piles – monitoring and inspections	During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:	Storage of RCRA hazardous waste in a waste pile—**applicable**	40 *CFR* 264.254(a) *OAC* 3745-56-54(A)	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.
	• Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and		40 *CFR* 264.254(a)(1) *OAC* 3745-56-54 (A)(1)	X	X	See above.
	• Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural nonuniformities that may cause an increase in the permeability of the liner or cover.		40 *CFR* 264.254(a)(2) *OAC* 3745-56-54 (A)(2)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – monitoring and inspections (continued)	• While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:		40 *CFR* 264.254(b) *OAC* 3745-56-54(B)	X	X	See above.
	• Deterioration, malfunctions, or improper operation of run-on and run-off control systems; and		40 *CFR* 264.254(b)(1) *OAC* 3745-56-54 (B)(1)	X	X	See above.
	• Proper functioning of wind dispersal control systems, where present; and		40 *CFR* 264.254(b)(2) *OAC* 3745-56-54 (B)(2)	X	X	See above.
	• The presence of leachate in and proper functioning of leachate collection and removal systems, where present.		40 *CFR* 264.254(b)(3) *OAC* 3745-56-54 (B)(3)	X	X	See above.
	An owner or operator required to have a leak detection system under *OAC* 3745-56-51(C) must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.		40 *CFR* 264.254(c) *OAC* 3745-56-54(C)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – special requirements for ignitable or reactive waste	Ignitable or reactive waste shall not be placed in a waste pile unless the waste and the waste pile satisfy all applicable requirements of *OAC* 3745-270, and:	Storage of RCRA hazardous waste in a waste pile—**applicable**	40 *CFR* 264.256 *OAC* 3745-56-56	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.
	• Addition of the waste to an existing pile results in waste or mixture no longer meeting the definition of ignitable or reactive waste under *OAC* 3745-51-21 or 3745-51-23 and complies with *OAC* 3745-54-17(B); or		40 *CFR* 264.256(a) *OAC* 3745-56-56(A)	X	X	See above.
	• The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.		40 *CFR* 264.256(b) *OAC* 3745-56-56(B)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – special requirements for incompatible waste	Incompatible wastes, or incompatible wastes and materials (see the appendix to *OAC* 3745-55-99 for examples), shall not be placed in the same pile, unless *OAC* 3745-54-17(B) is complied with.	Storage of RCRA hazardous waste in a waste pile—**applicable**	40 *CFR* 264.257(a) *OAC* 3745-56-57(A)	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.
	A pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments shall be separated from the other materials, or protected from them by means of a dike, berm, wall or other device.		40 *CFR* 264.257(b) *OAC* 3745-56-57(B)	X	X	See above.
	Hazardous waste shall not be piled on the same base where incompatible wastes or materials were previously piled unless the base has been decontaminated sufficiently to ensure compliance with *OAC* 3745-54-17(B).		40 *CFR* 264.257(c) *OAC* 3745-56-57(C)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – closure and postclosure care	At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless *OAC* 3745-51-03(D) applies.	Storage of RCRA hazardous waste in a waste pile—**applicable**	40 *CFR* 264.258(a) *OAC* 3745-56-58(A)	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.
	If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (A) of this rule, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform postclosure care in accordance *OAC* 3745-57-10.		40 *CFR* 264.258(b) *OAC* 3745-56-58(B)	X	X	See above.
	The owner or operator of a waste pile that does not comply with the liner requirements of *OAC* 3745-56-51(A)(1) and is not exempt from them in accordance with *OAC* 3745-56-50(C) or *OAC* 3745-56-51(B) must:		40 *CFR* 264.258(c)(1) *OAC* 3745-56-58 (C)(1)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage or treatment of hazardous waste in waste piles – closure and postclosure care (continued)	Include in the closure plan for the pile in accordance with *OAC* 3745-55-12 both a plan for complying with paragraph (A) of this rule and a contingent plan for complying with paragraph (B) of this rule in case not all contaminated subsoils can be practicably removed at closure; and		40 *CFR* 264.258 (c)(1)(i) *OAC* 3745-56-58 (C)(1)(a)	X	X	See above.
	Prepare a contingent postclosure plan in accordance with *OAC* 3745-55-18 for complying with paragraph (B) of this rule in case not all contaminated subsoils can be practicably removed at closure.		40 *CFR* 264.258 (c)(1)(ii) *OAC* 3745-56-58 C)(1)(b)	X	X	See above.
	Cost estimates calculated in accordance with *OAC* 3745-55-42 and 3745-55-44 for closure and postclosure care of a pile subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent postclosure plan but are not required to include the cost of expected closure under paragraph (A) of this rule.		40 *CFR* 264.258(c)(2) *OAC* 3745-56-58 (C)(2)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage of RCRA remediation waste in a staging pile	May be temporarily stored (including mixing, sizing, blending, or other similar physical operations intended to prepare the wastes for subsequent management or treatment) at a facility provided that the staging pile will be designed to:	Accumulation of nonflowing hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) as defined in 40 *CFR* 260.10— **applicable**	40 *CFR* 264.554(d)(1) *OAC* 3745-57-74	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.
	• Is located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. Staging piles must be designated by the director.		40 *CFR* 264.554(a) *OAC* 3745-57-74(A)		X	See above.
	• Staging piles may be used to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) if the standards and design criteria are followed that the director has designated for that staging pile.		40 *CFR* 264.554(b) *OAC* 3745-57-74(B)		X	See above.
	• Knowledge of the waste pile must be sufficient to establish the required standards		40 *CFR* 264.554(c) *OAC* 3745-57-74(C)		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage of RCRA remediation waste in a staging pile (continued)	• Facilitate a reliable, effective and protective remedy;		40 *CFR* 264.554 (d)(1)(i) *OAC* 3745-57-74 (D)(1)(a)	X	X	See above.
	• Prevent or minimize releases of hazardous wastes and constituents into the environment, and minimize or adequately control cross-media transfer, as necessary, to protect human health and the environment (e.g., through the use of liners, covers, run on/run off controls, as appropriate).		40 *CFR* 264.554 (d)(1)(ii) *OAC* 3745-57-74 (D)(1)(b)	X	X	See above.
	• The staging pile must not operate for more than 2 years, except when the director grants an operating term extension. The 2-year limit, or other operating term specified by the director in the permit, closure plan, or order, is measured from the first time remediation waste is placed into a staging pile. Must maintain a record of the date when remediation waste is first placed into the staging pile for the life of the permit, closure plan, or order, or for 3 years, whichever is longer.		40 *CFR* 264.554(d)(1)(iii) *OAC* 3745-57-74(D)(1)(c)		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage of RCRA remediation waste in a staging pile (continued)	In setting the design standards for staging piles, the director will consider the following factors: • Length of time the pile will be in operation • Volumes of wastes you intend to store in the pile • Physical and chemical characteristics of the wastes to be stored in the unit; • Potential for releases from the unit; • Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and Potential for human and environmental exposure to potential releases from the unit.		40 *CFR* 264.554(d)(2) *OAC* 3745-57-74(D)(2)		X	See above.
	Must not place ignitable or reactive remediation waste in a staging pile unless: • Waste has been treated, rendered, or mixed before it was placed in the staging pile so that the waste is no longer ignitable or reactive under §261.21 or §261.31 (*OAC* 3745-52-21 or 52-31), and 40 *CFR* 264.17(b) [*OAC* 3745-54-17(B)] has been complied with; or	Storage of ignitable or reactive remediation waste in staging pile—**applicable**	40 *CFR* 264.554(e) *OAC* 3745-57-74(E) 40 *CFR* 264.554(e)(i) *OAC* 3745-57-74(E)(1)		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage of RCRA remediation waste in a staging pile (continued)	• Remediation waste is managed to protect it from exposure to any material or condition that may cause it to ignite or react.		40 *CFR* 264.554(e)(ii) *OAC* 3745-57-74(E)(2)		X	See above.
	Must not place incompatible wastes in same pile unless comply with 40 *CFR* 264.17(b) [*OAC* 3745-54-17(B)].	Storage of "incompatible" remediation waste in staging pile—**applicable**	40 *CFR* 264.554(f)(1) *OAC* 3745-57-74 (F)(1)	X	X	See above.
	Incompatible wastes must be separated from any waste or nearby materials or must protect them from one another by using a dike, berm, wall, or other device.		40 *CFR* 264.554(f)(2) *OAC* 3745-57-74 (F)(2)	X	X	See above.
	Must not pile remediation waste on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with 40 *CFR* 274.17(b) [*OAC* 3745-54-17(B)].		40 *CFR* 264.554(f)(3) *OAC* 3745-57-74 (F)(3)	X	X	See above.
	Placing hazardous remediation wastes into a staging pile does not constitute land disposal of hazardous waste or create a unit that is subject to the minimum technological requirements of Section 3004(o) of RCRA.	Placement of hazardous remediation wastes into a staging pile—**applicable**	40 *CFR* 264.554(g) *OAC* 3745-57-74(G)		X	See above.
	A staging pile may operate for up to 2 years after hazardous remediation waste is first placed into the pile.		40 *CFR* 264.554(h) *OAC* 3745-57-74(H)		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage of RCRA remediation waste in a staging pile (continued)	The director may grant one operating term extension of up to 180 days beyond the operating term limit allowed under 40 *CFR* 264.554(h) [*OAC* 3745-57-74(H)] if he determines that continued operation of the staging pile will not pose a threat to human health and the environment; and that it is necessary to ensure timely and efficient implementation of remedial actions at the facility. The director may, as a condition of the extension, specify further standards and design criteria, as necessary, to ensure protection of human health and the environment.		40 *CFR* 264.554(i) *OAC* 3745-57-74(I)		X	See above.
Temporary storage of PCB waste in a non-RCRA regulated area	Except as provided in 40 *CFR* 761.65(b)(2), (c)(1), (c)(7), (c)(9), and (c)(10), after July 1, 1978, facilities used for the storage of PCBs and PCB Items designated for disposal shall comply with the requirements in 40 *CFR* 761.65(b)(1).	Storage of PCBs and PCB Items at concentrations ≥ 50 ppm for disposal—**applicable**	40 *CFR* 761.65(b)	X	X	Storage of PCB waste will be done indoors during the deactivation phase of the project, to ensure no spread of PCB contamination.
	The facilities shall meet the following criteria:		40 *CFR* 761.65(b)(1)	X	X	See above.
	• Adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB Items;		40 *CFR* 761.65 (b)(1)(i)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage of PCB waste in a non-RCRA regulated area (continued)	• Adequate floor that has continuous curbing with a minimum 6-in.-high curb. Floor and curb must provide containment volume equal to at least two times the internal volume of the largest PCB article or container or 25% of the internal volume of all articles or containers stored there, whichever is greater. *Note*: 6-in. minimum curbing not required for area storing PCB/radioactive waste;		40 *CFR* 761.65 (b)(1)(ii)	X	X	See above.
	• No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area;		40 *CFR* 761.65 (b)(1)(iii)	X	X	See above.
	• Floors and curbing constructed of Portland cement, concrete, or a continuous, smooth, nonporous surface as defined in §761.3 that prevents or minimizes penetration of PCBs; and		40 *CFR* 761.65 (b)(1)(iv)	X	X	See above.
	• Not located at a site below the 100-year flood water elevation.		40 *CFR* 761.65 (b)(1)(v)	X	X	See above.
Temporary storage of PCB waste in a RCRA-regulated area	Does not have to meet storage unit requirements in 40 *CFR* 761.65(b)(1) provided unit is stored in compliance with RCRA and PCB spills are cleaned up in accordance with Subpart G of 40 *CFR* 761.	Storage of PCBs and PCB items at concentrations ≥ 50 ppm for disposal—**applicable**	40 *CFR* 761.65 (b)(2)(i) to (iv)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage of PCB waste in containers	Container(s) shall be marked as illustrated in 40 *CFR* 761.45(a).	Storage of PCBs and PCB items at concentrations ≥ 50 ppm for disposal—**applicable**	40 *CFR* 761.40(a)(1)	X	X	Containers used to store PCBs and PCB items at concentrations ≥ 50 ppm will be labeled appropriately.
	Storage area must be properly marked as required by 40 *CFR* 761.40(a)(10).		40 *CFR* 761.65(c)(3)	X	X	PCB wastes will be stored in a manner to prevent the migration of PCB contamination and in compliance with obligations pursuant to the TSCA Compliance Agreement.
	Any leaking PCB items and their contents shall be transferred immediately to a properly marked nonleaking container(s).		40 *CFR* 761.65(c)(5)	X	X	Any PCB article, article container, or equipment that is found to be leaking will be immediately controlled, liquids drained and transferred to nonleaking containers.
	Except as provided in 40 *CFR* 761.65(c)(6)(i) and (ii), container(s) shall be in accordance with requirements set forth in DOT HMR at 49 *CFR* 171-180.		40 *CFR* 761.65(c)(6)	X	X	All containers used to store PCBs will be nonleaking and chemically compatible with the material being stored. All appropriate DOT regulations will be followed should off-site disposal be implemented for regulated PCB items.
	Items shall be dated when they are removed from service and the storage shall be managed so that PCB items can be located by this date. [Note: Date should be marked on the container.]	PCB items (includes PCB wastes) removed from service for disposal—**applicable**	40 *CFR* 761.65(c)(8)	X	X	PCB wastes will be stored in a manner to prevent the migration of PCB contamination and in compliance with obligations pursuant to the TSCA Compliance Agreement.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Risk-based storage of PCB remediation waste or bulk product waste prior to disposal	May store in a manner other than prescribed in 40 *CFR* 761.65 if the method will not pose an unreasonable risk of injury to health or the environment.	Storage of PCB remediation waste or bulk product waste prior to disposal—**applicable**	40 *CFR* 761.61(c) 40 *CFR* 761.62(c)	X	X	PCB wastes will be stored in a manner to prevent the migration of PCB contamination and in compliance with obligations pursuant to the TSCA Compliance Agreement, with the exception of the storage time limit of 180 days. If PCB remediation waste or PCB bulk product is generated during deactivation and does not require off-site disposal, it will remain in the building for future demolition. If PCB remediation waste or PCB bulk product waste is generated during deactivation and requires off-site disposal, this waste will be managed as TSCA waste. Specific management of PCB remediation waste or bulk product waste will be addressed in demolition plans.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Temporary storage of bulk PCB remediation waste or PCB bulk product waste in a TSCA waste pile	Waste must be placed and managed in accordance with the design and operation standards, including liner and cover requirements and run-off control systems, in 40 *CFR* 761.65(c)(9).	Storage of bulk PCB remediation waste or PCB bulk product waste at cleanup site or site of generation—**applicable**	40 *CFR* 761.65 (c)(9)(i)	X	X	PCB wastes will be stored in a manner to prevent the migration of PCB contamination and in compliance with obligations pursuant to the TSCA Compliance Agreement, with the exception of the storage time limit of 180 days. If PCB remediation waste or PCB bulk product is generated during deactivation and does not require off-site disposal, it will remain in the building for future demolition. If PCB remediation waste or PCB bulk product waste is generated during deactivation and requires off-site disposal, this waste will be managed as TSCA waste. Specific management of PCB remediation waste or bulk product waste will be addressed in demolition plans.
	Requirements of 40 *CFR* 761.65(c)(9) of this part may be modified under the risk-based disposal option of Section 761.61(c).		40 *CFR* 761.65 (c)(9)(iv)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Storage of PCB/radioactive waste in containers	For liquid wastes, containers must be nonleaking. For nonliquid wastes, containers must be designed to prevent buildup of liquids if such containers are stored in an area meeting the containment requirements of 40 *CFR* 761.65(b)(1)(ii); and	Storage of PCB/radioactive waste in containers other than those meeting DOT HMR performance standards—**applicable**	40 *CFR* 761.65 (c)(6)(i)(A) 40 *CFR* 761.65 (c)(6)(i)(B)	X	X	PCB wastes will be stored in a manner to prevent the migration of PCB contamination and in compliance. Liquid PCB wastes will be stored in nonleaking containers of acceptable quality.
	For both liquid and nonliquid wastes, containers must meet all substantive requirements pertaining to nuclear criticality safety.		40 *CFR* 761.65 (c)(6)(i)(C)	X	X	Storage and disposal of waste will be evaluated as appropriate by Nuclear Criticality Safety to ensure safe storage.
Temporary staging and storage of LLW	Shall not be readily capable of detonation, explosive decomposition, reaction at anticipated pressures and temperatures, or explosive reaction with water.	Management and storage of LLW at a DOE facility—**TBC**	DOE M 435.1-1 (IV)(N)(1)	X	X	Waste will be characterized, and as appropriate, will be conditioned to ensure the waste is not capable of detonation, explosive decomposition, reaction at anticipated pressures and temperatures, or explosive reaction with water.
	Shall be stored in a location and manner that protects the integrity of waste for the expected time of storage.		DOE M 435.1-1 (IV)(N)(3)	X	X	Storage of LLW will be conducted to ensure the waste remains unaffected by storage location.
	Staging of LLW shall be for the purpose of accumulation of such quantities of waste as necessary to facilitate transportation, treatment, and disposal.		DOE M 435.1-1 (IV)(N)(7)	X	X	LLW will be staged to support efficient on-site or off-site transportation and disposal.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
			Treatment/Disposal			
Disposal of RCRA-prohibited hazardous waste in a land-based unit	May be land disposed only if it meets the applicable requirements in the table "Treatment Standards for Hazardous Waste" at 40 *CFR* 268.40 (*OAC* 3745-270-40) before land disposal. The table lists either "total waste" standards, "waste-extract" standards, or "technology-specific" standards [as detailed further in 40 *CFR* 268.42 (*OAC* 3745-270-42)].	Land disposal, as defined in 40 *CFR* 268.2, of RCRA prohibited waste [as listed in 40 *CFR* 268.20 to .39 (*OAC* 3745-270-20 to -39)] —**applicable**	40 *CFR* 268.40(a) *OAC* 3745-270-40(A) 40 *CFR* 268.30 to 268.40 *OAC* 3745-270-30 to -40 40 *CFR* 268.42 *OAC* 3745-270-42	X	X	Hazardous waste in the current permitted RCRA Part B inventory will be either disposed off site in accordance with off-site receiving facility WAC (and applicable treatment standards) or transferred to new on-site RCRA permitted storage areas. Newly generated hazardous waste generated during activities under the RD/RA work plan will be shipped to an off-site disposal facility in accordance with disposal facility WAC (and applicable treatment standards). Treatment for specific waste streams may be conducted on-site or off site. Treatment standards expressed as specified technology will be implemented. Treatment of hazardous waste on site will meet the substantive requirements of a RCRA treatment permit which include Generator Standards (*OAC* 3745-52); General Facility Standards for New Facilities (*OAC* 3745-54); and Use and Management of Containers (*OAC* 3745-55).

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of RCRA-prohibited hazardous waste in a land-based unit (continued)	For characteristic wastes (D001 – D043) that are subject to the treatment standards, all underlying hazardous constituents must meet the UTSs specified in 40 *CFR* 268.48 (*OAC* 3745-27048).	Land disposal of restricted RCRA characteristic wastes (D001-D043) that are not managed in a wastewater treatment unit that is regulated under the CWA, that is CWA equivalent, or that is injected into a Class I nonhazardous injection well—**applicable**	40 *CFR* 268.40(e) *OAC* 3745-270-40(E) 40 *CFR* 268.48 *OAC* 3745-270-48	X	X	Hazardous waste in the current permitted RCRA Part B inventory will be either disposed off site in accordance with off-site receiving facility WAC (and applicable treatment standards) or transferred to new on-site RCRA permitted storage areas. Newly generated hazardous waste generated during activities under the RD/RA work plan will be shipped to an off-site disposal facility in accordance with disposal facility WAC (and applicable treatment standards).
	May be land disposed if the wastes no longer exhibit a characteristic at the point of land disposal, unless the wastes are subject to a specified method of treatment other than DEACT in 40 *CFR* 628.40 (*OAC* 3745-270-48), or are D003 reactive cyanide.	Land disposal of RCRA-restricted characteristic wastes—**applicable**	40 *CFR* 268.1 (c)(4)(iv) *OAC* 3745-270-01 (C)(4)	X	X	Hazardous waste in the current permitted RCRA Part B inventory will be either disposed off-site in accordance with off-site receiving facility WAC (and applicable treatment standards) or transferred to new on-site RCRA permitted storage areas. Newly generated hazardous waste generated during activities under the RD/RA work plan will be shipped to an off-site disposal facility in accordance with disposal facility WAC (and applicable treatment standards).

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of RCRA-prohibited hazardous waste in a land-based unit (continued) *Debris*	May be land disposed if treated prior to disposal as provided under the "Alternative Treatment Standards for Hazardous Debris" in 40 *CFR* 268.45(a)(1)-(5) [*OAC* 3745-270-45(A)(1)-(5)] unless it is determined under 40 *CFR* 261.3(f)(2) [*OAC* 3745-51-03(F)(2)] that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste specific treatment standard provided in 40 *CFR* 268.40 (*OAC* 3745-270-40) for the waste contaminating the debris.	Land disposal, as defined in 40 *CFR* 268.2 (*OAC* 3745-270-02), of RCRA-restricted hazardous debris—**applicable**	40 *CFR* 268.45(a) *OAC* 3745-270-45(A)	X	X	Hazardous debris and soils generated during deactivation are generated within an established area of contamination, and relate to that generated during utility isolations where excavation is required, is at a depth where saturated soils are encountered and TCE contamination is confirmed to be present. Debris with TCE contamination will be removed and managed as hazardous waste in accordance with ARARs and the AOC and disposed in the OSWDF in accordance with the WAC, or shipped off site to an appropriately permitted off-site disposal facility.
	The hazardous debris must be treated for each "contaminant subject to treatment," which must be determined in accordance with 40 *CFR* 268.45(b) [*OAC* 3745-270-45(B)].		40 *CFR* 268.45(b) *OAC* 3745-270-45(B)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of RCRA-prohibited hazardous waste in a land-based unit (continued) *Soils*	May be land disposed if treated prior to disposal according to alternative treatment standards of 40 *CFR* 268.49(c) [*OAC* 3745-270-49(C)] or according to the UTSs specified in 40 *CFR* 268.48 (*OAC* 3745-270-48) applicable to the listed hazardous waste and/or applicable characteristic of hazardous waste if the soil is characteristic.	Land disposal, as defined in 40 *CFR* 268.2 (*OAC* 3745-270-02), of RCRA-restricted hazardous soils—**applicable**	40 *CFR* 268.49 (b) and (c) *OAC* 3745-270-49 (B) and (C)	X	X	Waste will be disposed in the OSWDF provided it can meet the WAC. All requirements associated with the OSWDF CAMU designation will be met. Soils may be returned to the excavation under the AOC concept. Other wastes will be disposed at an appropriately licensed and permitted disposal facility.
Variance from a treatment standard for RCRA-restricted hazardous wastes	A variance from a treatment standard may be approved if: • It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard; or • It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard even through such treatment is technically possible. *NOTE:* Variance approval will be granted through the DFF&O document approval process and included in the appropriate DFF&O document.	Generation of a RCRA hazardous waste requiring treatment prior to land disposal—**applicable**	40 *CFR* 268.44 *OAC* 3745-270-44	X	X	It is not expected that a treatment variance will be required for any newly generated hazardous waste. If such a variance becomes necessary or appropriate, this work plan will be appended to include the necessary justification and information.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of treated hazardous debris	Debris treated by one of the specified extraction or destruction technologies on Table 1 of this section and which no longer exhibits a characteristic is not a hazardous waste and need not be managed in RCRA subtitle C facility. Hazardous debris contaminated with listed waste that is treated by an immobilization technology must be managed in a RCRA subtitle C facility.	Treated debris contaminated with RCRA-listed or characteristic waste—**applicable**	40 *CFR* 268.45(c) *OAC* 3745-270-45(C)	X	X	Waste will be disposed in the OSWDF provided it can meet the WAC. All requirements associated with the OSWDF CAMU designation will be met. Other wastes will be disposed at an appropriately licensed and permitted disposal facility.
Disposal of hazardous debris treatment residues	Except as provided in 268.45(d)(2) and (d)(4) [*OAC* 3745-270-45(D)(2) and (D)(4)], treatment residues must be separated from the treated debris using simple physical or mechanical means, and such residues are subject to the waste-specific treatment standards for the waste contaminating the debris. Layers of debris removed by spalling are hazardous debris that remains subject to treatment standards.	Residues from the treatment of hazardous debris—**applicable**	40 *CFR* 268.45 (d)(1) – (5) *OAC* 3745-270-45 (D)(1) – (5)	X	X	Waste will be disposed in the OSWDF provided it can meet the WAC. All requirements associated with the OSWDF CAMU designation will be met. Other wastes will be disposed at an appropriately licensed and permitted disposal facility.
Prohibition of dilution to meet LDRs	Except as provided under 40 *CFR* 268.3(b) [*OAC* 3745-270-03(B)], must not in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with land disposal restriction levels.	Land disposal, as defined in 40 *CFR* 268.2 (*OAC* 3745-270-02), of RCRA-restricted hazardous soils—**applicable**	40 *CFR* 268.3(a) *OAC* 3745-270-03(A)	X	X	Dilution will not be a substitute for treatment.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal requirements for particular RCRA waste forms and types	Must not be placed in a landfill unless the waste and the landfill meet applicable provisions of 40 *CFR* 268 and: The resulting waste, mixture, or dissolution of material no longer is reactive or ignitable.	Disposal of ignitable or reactive RCRA waste—**applicable**	40 *CFR* 264.312(a) *OAC* 3745-57-12(A)		X	Waste will be disposed in the OSWDF provided it can meet the WAC. All requirements associated with the OSWDF CAMU designation will be met. Other wastes will be disposed at an appropriately licensed and permitted disposal facility.
	40 *CFR* 264.17(b) [*OAC* 3745-54-17(B)] is complied with.				X	See above.
	May be landfilled without meeting 40 *CFR* 264.312(a) [*OAC* 3745-57-12(A)], provided wastes are disposed of in such a way that they are protected from any materials or conditions which may cause them to ignite; Must be disposed of in nonleaking containers which are carefully handled and placed to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes;	Disposal of ignitable or reactive RCRA waste [except for prohibited wastes which remain subject to treatment standards in 40 *CFR* 268.40 *et seq*.]—**applicable**	40 *CFR* 264.312(b) *OAC* 3745-57-12(B)		X	Waste will be disposed in the OSWDF provided it can meet the WAC. All requirements associated with the OSWDF CAMU designation will be met. Other wastes will be disposed at an appropriately licensed and permitted disposal facility.
	Must be covered daily with soil or other noncombustible material to minimize the potential of ignition;				X	See above.
	Must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste and				X	See above.
	Must not be placed into a cell unless 40 *CFR* 264.17(b) [*OAC* 3745-54-17(B)] is complied with.	Disposal of incompatible wastes in a RCRA landfill—**applicable**	40 *CFR* 264.313 *OAC* 3745-57-13		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of bulk or containerized hazardous liquids	The placement of bulk or noncontainerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.	Placement of bulk or containerized hazardous waste liquids in a landfill—**applicable**	40 *CFR* 264.314(a) *OAC* 3745-57-14(A)		X	Waste will be disposed in the OSWDF provided it can meet the WAC. All requirements associated with the OSWDF CAMU designation will be met. Other wastes will be disposed at an appropriately licensed and permitted disposal facility.
	Must use the Paint Filter Liquids Test to demonstrate the absence or presence of free liquids in either a containerized or a bulk waste.		40 *CFR* 264.314(b) *OAC* 3745-57-14(B)		X	See above.
	Containers holding free liquids must not be placed in a landfill, unless:		40 *CFR* 264.314(c) *OAC* 3745-57-14(C)		X	See above.
	• All free-standing liquid has been removed by decanting, or other methods; or has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or has been otherwise eliminated; or		40 *CFR* 264.314 (c)(1) *OAC* 3745-57-14 (C)(1)		X	See above.
	• Container is very small, such as an ampule; or		40 *CFR* 264.314 (c)(2) *OAC* 3745-57-14 (C)(2)		X	See above.
	• Container is designed to hold free liquids for use other than storage, such as a battery or capacitor or		40 *CFR* 264.314 (c)(3) *OAC* 3745-57-14 (C)(3)		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of bulk or containerized hazardous liquids (continued)	• Container is a lab pack as defined in 40 *CFR* 264.316 [*OAC* 3745-57-16] and is disposed of in accordance with 40 *CFR* 264.316 [*OAC* 3745-57-16].		40 *CFR* 264.314 (c)(4) *OAC* 3745-57-14 (C)(4)		X	See above.
	Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable as described in 40 *CFR* 264.314(d)(1) [*OAC* 3745-57-14(D)(1)].		40 *CFR* 264.314(d) *OAC* 3745-57-14(D)		X	See above.
	The placement of any liquid which is not a hazardous waste in a landfill is prohibited unless it is demonstrated that the only reasonably available alternative is placement in a landfill or unlined surface impoundment which contains or may contain hazardous waste and such placement will not present a risk of contamination of any underground source of drinking water.		40 *CFR* 264.314(e) *OAC* 3745-57-14(E)		X	See above.
	Unless they are very small, containers must be either at least 90% full when placed in the landfill, or crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.		40 *CFR* 264.315 *OAC* 3745-57-15		X	See above.
	Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the requirements of this section are met.		40 *CFR* 264.316 *OAC* 3745-57-16		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of hazardous wastes F020, F021, F022, F023, F026, and F027 listed wastes	Disposal of F020, F021, F022, F023, F026, and F027 wastes in a hazardous waste landfill is not permitted unless comply with the substantive requirements for waste management of 40 *CFR* 264.317 [*OAC* 3745-57-17].	Disposal of hazardous wastes F020, F021, F022, F023, F026, and F027—**applicable**	40 *CFR* 264.317 *OAC* 3745-57-17		X	It is not expected that F020, F021, F022, F023, F025, or F027 wastes will be generated during deactivation or demolition activities.
Treatment and disposal of ignitable, reactive, or incompatible RCRA wastes	Must take precautions to prevent accidental ignition or reaction of waste, and waste must be separated and protected from sources of ignition or reaction.	Operation of a RCRA facility that treats, stores, or disposes of ignitable, reactive, or incompatible wastes—**applicable**	40 *CFR* 264.17(a) *OAC* 3745-54-17(A)		X	Any treatment facilities will be designed and operated to prevent accidental ignition or reaction. Compliance approach to be provided in a treatment facility design.
	Must take precautions to prevent reactions that:		40 *CFR* 264.17(b) *OAC* 3745-54-17(B)		X	See above.
	• Generate extreme heat, pressure, fire or explosion, or violent reactions					
	• Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment				X	See above.
	• Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions				X	See above.
	• Damage the structural integrity of the device or facility				X	See above.
	• Through other like means threaten human health or the environment.				X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Pretreatment standards for discharges to a permitted wastewater treatment unit	Pollutants introduced to POTWs shall not pass through POTWs or interfere with the operation or performance of the POTW. Substances listed in *OAC* 3745-3-04(B) shall not be introduced into a POTW.	Discharge of wastewater containing pollutants to a POTW—**relevant and appropriate**	*OAC* 3745-3-04	X		Discharges of wastewater and storm water will be in compliance with an effective NPDES Permit. Discharges will be effectively treated to meet applicable effluent limits and will not interfere with treatment plant performance. Discharges to a POTW will not occur.
	Must notify POTW immediately of all discharges that could cause problems to the POTW, including any slug loading, in accordance with *OAC* 3745-3-05.		*OAC* 3745-3-05	X		See above.
	Industrial users are subject to national categorical pretreatment standards under 40 *CFR* 403.6 and to the general requirements listed in *OAC* 3745-3-09 regarding the interpretation and application of pretreatment standards.		*OAC* 3745-3-09	X		See above.
Disposal of wastewaters containing RCRA hazardous constituents in a CWA wastewater treatment unit	Disposal is not prohibited if the wastes are managed in a treatment system which subsequently discharges to waters of the U.S. under the CWA unless the wastes are subject to a specified method of treatment other than DEACT in 40 *CFR* 268.40 (*OAC* 3745-270-40) or are D003 reactive cyanide.	Disposal of RCRA-restricted hazardous wastes that are hazardous only because they exhibit a hazardous characteristic and are not otherwise prohibited under 40 *CFR* Part 268—**applicable**	40 *CFR* 268.1(c)(4)(i) *OAC* 3745-270-01 (C)(4)	X	X	Discharges of wastewater and storm water will be in compliance with an effective NPDES Permit. Reactive cyanides are not expected to be generated or discharged in wastewater.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
General duty to mitigate for discharge of wastewater from water treatment system	Take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of effluent standards which has a reasonable likelihood of adversely affecting human health or the environment.	Discharge of pollutants to surface waters—**applicable**	40 *CFR* 122.41(d) *ORC* 6111.04(C)		X	Discharges of wastewater and storm water will be in compliance with an effective NPDES Permit. Discharges will be effectively treated to meet applicable effluent limits and will not interfere with treatment plant performance.
Operation and maintenance of treatment system	Properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) installed or used to achieve compliance with the effluent standards. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.	Discharge of pollutants to surface waters—**applicable**	40 *CFR* 122.41(e) *OAC* 3745-33-08(A)(8)		X	Discharges of wastewater and storm water will be in compliance with an effective NPDES Permit.
Disposal of wastewaters in a CWA wastewater treatment unit	No entity shall cause pollution or place or cause to be placed any sewage, sludge, sludge materials, industrial waste, or other wastes in a location where they cause pollution of any waters of the state.	Discharge of contaminants to waters of the state – **applicable**	*RC* 6111.04	X	X	Discharges of wastewater and storm water will be in compliance with an effective NPDES Permit. Reactive cyanides are not expected to be generated or discharged in wastewater.
	No person shall violate or fail to perform any duty imposed by sections 6111.01 to 6111.08 of the Revised Code or violate any order, rule, or term or condition of a permit issued or adopted by the director of environmental protection pursuant to those sections.		*RC* 6111.07	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Treatment and disposal of ignitable, reactive, or incompatible RCRA wastes	Must take precautions to prevent accidental ignition or reaction of waste, and waste must be separated and protected from sources of ignition or reaction.	Operation of a RCRA facility that treats or stores ignitable, reactive, or incompatible wastes— **applicable**	40 *CFR* 264.17(a) *OAC* 3745-54-17(A)	X		Precautions will be taken when managing ignitable, reactive, or incompatible wastes. Preferential actions will focus on rendering the waste nonignitable or nonreactive. No smoking or open-flames will be allowed in areas where ignitable or reactive wastes are stored. Incompatible wastes will be separated by spill containment devices or other physical barriers.
	Must take precautions to prevent reactions that: • Generate extreme heat, pressure, fire or explosion, or violent reactions. • Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment. • Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions. • Damage the structural integrity of the device or facility. • Through other like means threaten human health or the environment.		40 *CFR* 264.17(b) *OAC* 3745-54-17(B)	X		See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of solid wastes	Except as provided in paragraph (D) of *OAC* 3745-27-02, no person shall establish or modify a solid waste disposal facility without meeting the substantive criteria as follows:	Management and disposal of solid waste—**applicable**	*OAC* 3745-27-02(A)	X	X	Waste will be disposed at an appropriately licensed and permitted disposal facility. Any solid waste that is required to be disposed off-site will be disposed at an appropriately licensed and permitted sanitary landfill.
	Disposal of solid wastes shall only be by the following methods or combination thereof:		*OAC* 3745-27-05(A)	X	X	See above.
	• Disposal at a licensed sanitary landfill facility		*OAC* 3745-27-05 (A)(1)	X	X	See above.
	• Incinerating at a licensed incinerator		*OAC* 3745-27-05 (A)(2)	X	X	Solid wastes will not be incinerated. Liquid PCB wastes will be managed in accordance with TSCA ARARs.
	• Composting at a licensed composting facility		*OAC* 3745-27-05 (A)(3)	X	X	Solid wastes will not be composted.
	• Alternative disposal methods either as engineered fill or land application, provided use will not create a nuisance or harm human health or the environment and is capable of complying with other applicable laws.		*OAC* 3745-27-05 (A)(4)	X	X	Waste will be disposed at an appropriately licensed and permitted disposal facility. Any solid waste that is required to be disposed off site will be disposed at an appropriately licensed and permitted sanitary landfill.
Prohibition on open dumping of solid wastes	Temporary storage of putrescible solid wastes in excess of 7 days, or temporary storage of any solid wastes where such storage causes a nuisance or health hazard shall be considered open dumping.	Temporary storage of solid waste prior to collection for disposal or transfer—**applicable**	*OAC* 3745-27-03 (A)(2)	X	X	Solid waste will be stored to prevent a nuisance and protect human health in the environment.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Prohibition on open dumping of solid wastes (continued)	No person shall conduct, permit, or allow open dumping. In the event that open dumping is or has occurred, person(s) responsible shall promptly remove and dispose or otherwise manage the solid waste and shall submit verification that the waste has been properly managed.	Management and disposal of solid waste—**applicable**	*OAC* 3745-27-05(C)	X	X	Open dumping of solid waste will not occur. Any solid waste disposed off site will be disposed at an appropriately licensed and permitted sanitary landfill.
Treatment of LLW	Waste treatment to provide more stable waste forms and to improve the long-term performance of a LLW disposal facility shall be implemented as necessary to meet performance objectives of the disposal facility.	Generation of LLW for disposal at a DOE LLW disposal facility—**TBC**	DOE M 435.1-1 (IV)(O)	X	X	LLW that does not meet disposal facility waste form WAC will be treated on site or off site to meet WAC.
Treatment of uranium-bearing LLW	Such wastes shall be properly conditioned so that the generation and escape of biogenic gases will not cause the emission or dose limits in paragraph 4.h.(1) of DOE Order 458.1 to be exceeded and that biodegradation within the facility will not result in premature structural failure.	Placement of potentially biodegradable contaminated wastes in a long-term management facility—**TBC**	DOE Order 458.1 (h)(1)(d)(3)		X	Waste will be prepared for disposition in compliance with disposal facility WAC.
Disposal of LLW in a landfill	Void spaces within the waste and, if containers are used, between the waste and its container shall be reduced to the extent practical.		DOE Manual 435.1-1 (IV)(G)(1)(d)(1)		X	Waste will be prepared for disposition in compliance with disposal facility WAC.
Land disposal of radioactive waste – waste classification and characteristics	The following waste characteristics are minimum requirements for all classes of waste and are intended to facilitate handling at the disposal site and provide protection of health and safety of personnel at the disposal site.	Land disposal of radioactive waste in a licensed radioactive waste landfill—**relevant and appropriate**	*OAC* 3701:1-54-10 (B)		X	Waste will be prepared for disposition in compliance with disposal facility WAC.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Land disposal of radioactive waste – waste classification and characteristics (continued)	Waste must not be packaged for disposal in cardboard or fiberboard boxes.		*OAC* 3701:1-54-10 (B)(1)		X	See above.
	Liquid waste must be solidified or packaged in sufficient absorbent material to absorb twice the volume of the liquid.		*OAC* 3701:1-54-10 (B)(2)		X	See above.
	Solid waste containing liquid shall contain as little free standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume.		*OAC* 3701:1-54-10 (B)(3)		X	See above.
	Waste must not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.		*OAC* 3701:1-54-10 (B)(4)		X	See above.
	Waste must not contain or be capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous waste packaged in accordance with paragraph (B)(7) of this rule.		*OAC* 3701:1-54-10 (B)(5)		X	See above.
	Waste must not be pyrophoric. Pyrophoric materials contained in waste shall be treated, prepared, and packaged to be nonflammable.		*OAC* 3701:1-54-10 (B)(6)		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Land disposal of radioactive waste – waste classification and characteristics (continued)	The requirements in this rule are intended to provide stability of the waste. Stability is intended to ensure that the waste does not structurally degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste.		*OAC* 3701:1-54-10 (B)(9)		X	See above.
	Waste must have structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form, under the expected disposal conditions such as weight of overburden and compaction equipment, presence of moisture, and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.		*OAC* 3701:1-54-10 (B)(9)(a)		X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Land disposal of radioactive waste – waste classification and characteristics (continued)	Notwithstanding provisions in *OAC* 3701:1-54-10 (B)(2) and (3), liquid wastes, or wastes containing liquid, must be converted into a form that contains as little free standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5% of the volume of the waste for waste processed to a stable form.		*OAC* 3701:1-54-10 (B)(9)(b)		X	See above.
Disposal of solid LLW at DOE facilities	Shall meet waste acceptance requirements before it is transferred to the receiving facility.	Generation of LLW for disposal at a DOE facility—**TBC**	DOE M 435.1-1 (IV)(J)(2)	X	X	DOE facilities will include the OSWDF and the NNSS or other appropriately licensed facilities. All wastes will meet the appropriate WAC. For waste transferred to the OSWDF, compliance will be addressed in the WAC Implementation Plan.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of refrigeration equipment	With the exception of the substitutes in the end uses listed in 40 *CFR* 82.154(a)(1)(i) – (vi), no person maintaining, servicing, repairing, or disposing of appliances may knowingly vent or otherwise release into the environment any refrigerant or substitute from such appliances.	Appliances that contain Class I or II substances used as a refrigerant—**applicable**	40 *CFR* 82.154(a)(1)	X	X	Refrigerants will be evacuated by trained and qualified personnel. Other than de minimis losses or those losses experienced as a result of equipment failure, no releases of Class I or II substances will occur. Waste will be disposed in the OSWDF based on compliance with OSWDF WAC in accordance with the WAC Implementation Plan. Other wastes will be disposed at an appropriately licensed and permitted disposal facility. Refrigerants will be sent to appropriate facilities for reclamation or incineration.
	De minimis releases associated with good faith attempts to recycle or recover refrigerants are not subject to this prohibition.		40 *CFR* 82.154(a)(2)	X	X	See above.
	No person may dispose of such appliances, except for small appliances, MVACs, and MVAC-like appliances, without: • Observing the required practices set forth in 40 *CFR* 82.156, and • Using equipment that is certified for that type of appliance pursuant to 40 *CFR* 82.158.		40 *CFR* 82.154(b)	X	X	See above. All appliances other than MVACS or MVAC-like appliances will be evacuated by trained and qualified personnel using certified equipment. Levels of evacuation will be met depending on the type of appliance and the pressure at which it operates.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of asbestos-containing waste material (e.g., transite siding, pipe lagging, insulation, ceiling tiles)	All asbestos-containing waste material must be deposited as soon as practicable at a waste disposal site operated in accordance with Section 61.154 [*OAC* 3745-20-06] or a site that converts RACM and asbestos-containing waste material into nonasbestos (asbestos free) material according to the provisions of 40 *CFR* 61.155 [*OAC* 3745-20-13].	Removal and disposal of RACM except Category I nonfriable asbestos-containing material—**applicable**	40 *CFR* 61.150 (b)(1) and (2) *OAC* 3745-20-05(A)	X		Asbestos-containing waste material will be stored until disposal in the OSWDF, provided it meets OSWDF WAC. Off-site disposal of asbestos-containing waste material, if necessary, will be accomplished when sufficient quantities exist for efficient off-site disposal and will meet disposal facility WAC.
	May use an alternative emission control and waste treatment method that will control asbestos emissions equivalent to currently required methods, the alternative method is suitable for the intended application, and the alternative method will not violate other regulations and will not result in increased water or land pollution or occupational hazards.		40 *CFR* 61.150(a)(4) *OAC* 3745-20-05 (B)(4)	X	X	Emission controls will be in place to ensure no visible emissions.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Exclusions for disposal or reuse of construction and demolition debris, or "clean hard fill" [as defined in *OAC* 3745-400-01(E)]	Construction and demolition debris facility requirements do not apply to construction and demolition debris or clean hard fill used in one or more of the following ways: • Any construction site where construction debris and trees and brush removed in clearing the construction site are used as fill material on the site where the materials are generated or removed; • Any site where clean hard fill is used, either alone or in conjunction with clean soil, sand, gravel, or other clean aggregates, in legitimate fill operations; • Any site where debris is not disposed, such as where debris is reused or recycled in a beneficial manner, or stored for a temporary period remaining unchanged and retrievable.	Use of construction and demolition debris or clean hard fill at a site—**applicable**	*OAC* 3745-400-03	X	X	Construction and demolition debris meeting the definition of clean hard fill may be used in the construction of the OSWDF or on the plant site for erosion control or as fill material.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of construction and demolition debris	Shall be disposed of only in an authorized construction and demolition debris facility or solid waste disposal facility; by means of open burning if permitted as provided in *OAC* 3745-19; or by other methods provided such methods are demonstrated to be capable of disposing without creating a nuisance or health hazard, without causing water pollution, and without violating any regulations under Chapters 3745, 3704 or 3734.	Disposal of construction and demolition debris—**applicable**	*OAC* 3745-400-04 (A) and (B)	X	X	Construction and demolition debris will be disposed in the OSWDF based on compliance with the OSWDF WAC in accordance with the WAC Implementation Plan. Construction and demolition debris meeting the definition of clean hard fill may be used in the construction of the OSWDF or on the plant site for erosion control or as fill material.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of construction and demolition debris as "clean hard fill"	Clean hard fill (does not include materials contaminated with hazardous, solid, or infectious waste) consisting of reinforced or nonreinforced concrete, asphalt concrete, brick (includes but is not limited to refractory brick and mortar), block, tile, or stone shall be managed in one or more of the following ways: • Recycled into usable construction material; • Disposed in construction and demolition debris or other waste facilities; • Used in legitimate fill operations for construction purposes or to bring the site up to consistent grade, on the site of generation, or on a site other than the site of generation, pursuant to paragraph (C) of *OAC* 3745-400-05.	Use of clean hard fill to bring a construction site up to consistent grade—**applicable**	*OAC* 3745-400-05(A)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of construction and demolition debris as "clean hard fill" (continued)	Clean hard fill may be stored for a period of less than 2 years. "Stored" means held in a manner remaining retrievable and substantially unchanged. Clean hard fill piled adjacent to a construction materials processing facility shall not be considered stored for more than 2 years if the pile is active, i.e., if clean hard fill material is added to and removed from the pile within a 2-year period.		*OAC* 3745-400-05(B)	X	X	Clean hard fill will not be stored for longer than 2 years if there is continuous waste placement. If not, clean hard fill may be stored for longer than 2 years. If so, it will be stored so it is unchanged and retrievable, will not become a nuisance, and will be protective of human health and the environment. Construction and demolition debris generated which meets the definition of clean hard fill for which no use is identified will be disposed in the OSWDF based on compliance with the OSWDF WAC in accordance with the WAC Implementation Plan.
Performance-based disposal of PCB remediation waste	Shall be disposed according to 40 *CFR* 761.60(a) or (e), or decontaminated in accordance with 40 *CFR* 761.79.	Disposal of liquid PCB remediation waste—**applicable**	40 *CFR* 761.61(b)(1)	X	X	Liquid PCB wastes with concentrations above 50 ppm will sent for off-site incineration.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Performance-based disposal of PCB remediation waste (continued)	May dispose by one of the following methods: • In a high-temperature incinerator under 40 *CFR* 761.70(b); • By an alternate disposal method under 40 *CFR* 761.60(e); • In a chemical waste landfill under 40 *CFR* 761.75; • In a facility under 40 *CFR* 761.77; or • Through decontamination in accordance with 40 *CFR* 761.79.	Disposal of nonliquid PCB remediation waste (as defined in 40 *CFR* 761.3)—**applicable**	40 *CFR* 761.61(b)(2) 40 *CFR* 761.61 (b)(2)(i) 40 *CFR* 761.61 (b)(2)(ii)	X	X	PCB wastes will be stored in a manner to prevent the migration of PCB contamination and in compliance with obligations pursuant to the TSCA Compliance Agreement, with the exception of the storage time limit of 180 days. Nonliquid PCB remediation waste will be disposed in the OSWDF based on compliance with the OSWDF WAC in accordance with the WAC Implementation Plan.
Risk-based disposal of PCB remediation waste	May dispose of in a manner other than prescribed in 40 *CFR* 761.61(a) or (b) if the method will not pose an unreasonable risk of injury to health or the environment.	Disposal of PCB remediation waste—**applicable**	40 *CFR* 761.61(c)	X	X	PCB wastes will be stored in a manner to prevent the migration of PCB contamination and in compliance with obligations pursuant to the TSCA Compliance Agreement, with the exception of the storage time limit of 180 days. Nonliquid PCB remediation waste will be disposed in the OSWDF based on compliance with the OSWDF WAC in accordance with the WAC Implementation Plan.
Disposal of PCB decontamination waste and residues	Shall be disposed of at their existing PCB concentration unless otherwise specified in 40 *CFR* 761.79(g).	PCB decontamination waste and residues for disposal—**applicable**	40 *CFR* 761.79(g)	X	X	Liquid PCB wastes with concentrations above 50 ppm will be sent for off-site incineration.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of PCB liquids (e.g., from drained electrical equipment)	Must be disposed of in an incinerator that complies with 40 *CFR* 761.70, except:	PCB liquids at concentrations ≥ 50 ppm—**applicable**	40 *CFR* 761.60(a)	X	X	See above.
	For mineral oil dielectric fluid, may be disposed in a high efficiency boiler according to 40 *CFR* 761.71(a).	PCB liquids at concentrations ≥ 50 ppm and < 500 ppm—**applicable**	40 *CFR* 761.60(a)(1)	X	X	See above.
	For liquids other than mineral oil dielectric fluid, may be disposed in a high efficiency boiler according to 40 *CFR* 761.71(b).		40 *CFR* 761.60(a)(2)	X	X	See above.
Disposal of PCB-contaminated precipitation, condensation, or leachate	May be disposed in a chemical waste landfill that complies with 40 *CFR* 761.75 if:	PCB liquids at concentrations ≥ 50 ppm from incidental sources and associated with PCB articles or nonliquid PCB wastes—**applicable**	40 *CFR* 761.60(a)(3)	X	X	See above.
	• Disposal does not violate 40 *CFR* 268.32(a) or 268.42(a)(1); and		40 *CFR* 761.60 (a)(3)(i)	X	X	See above.
	• Liquids do not exceed 500 ppm and are not ignitable waste as described in 40 *CFR* 761.75(b)(8)(iii).		40 *CFR* 761.60 (a)(3)(ii)	X	X	See above.
Disposal of PCB transformers	Shall be disposed of in either: • An incinerator that complies with 40 *CFR* 761.70, or • A chemical waste landfill that is compliant with 40 *CFR* 761.75 provided all free flowing liquid is removed from the transformer, the transformer is filled with a solvent, the transformer is allowed to stand for at least 18 continuous hours, and then the solvent is thoroughly removed.	PCB-contaminated electrical equipment (including transformers that contain PCBs at concentrations of ≥ 50 ppm and < 500 ppm in the contaminating fluid) as defined in 40 *CFR* 761.3—**applicable**	40 *CFR* 761.60(b)(1) 40 *CFR* 761.60 (b)(1)(i)(A) 40 *CFR* 761.60 (b)(1)(i)(B)	X	X	PCB transformers will be disposed in the OSWDF provided they meet approved WAC. PCB transformers will be treated with the solvent rinse as specified and the removed solvent will be properly disposed based on its characterization. Once rinsed, transformers will be managed with the building debris.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Performance-based disposal of PCB bulk product waste	May dispose of by one of the following:	Disposal of PCB bulk product waste as defined in 40 *CFR* 761.3—**applicable**	40 *CFR* 761.62(a)	X	X	Any PCB bulk product waste generated during deactivation activities will be stored in compliance with ARARs for disposal in the OSWDF provided it meets WAC.
	• In an incinerator under Section 761.70,		40 *CFR* 761.62(a)(1)	X	X	See above.
	• In a chemical waste landfill under Section 761.75,		40 *CFR* 761.62(a)(2)	X	X	See above.
	• In a hazardous waste landfill under Section 3004 or Section 3006 of RCRA,		40 *CFR* 761.62(a)(3)	X	X	See above.
	• Under alternate disposal under Section 761.60(e),		40 *CFR* 761.62(a)(4)	X	X	See above.
	• In accordance with decontamination provisions of Section 761.79,		40 *CFR* 761.62(a)(5)	X	X	See above.
	• In accordance with thermal decontamination provisions of Section 761.79(e)(6) for metal surfaces in contact with PCBs.		40 *CFR* 761.62(a)(6)	X	X	See above.
Risk-based disposal of PCB bulk product waste	May dispose of in a manner other than that prescribed in 40 *CFR* 761.62(a) if the method will not pose an unreasonable risk of injury to health or the environment.	Disposal of PCB bulk product waste as defined in 40 *CFR* 761.3—**applicable**	40 *CFR* 761.62(c)	X	X	Any PCB bulk product waste generated during deactivation activities will be stored in compliance with ARARs for disposal in the OSWDF provided it meets WAC.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of PCB bulk product waste in solid waste landfill	May dispose of the following in a municipal or non-municipal non-hazardous waste landfill:	Disposal of non-liquid PCB bulk product waste listed in 40 *CFR* 761.62(b)(1)—**applicable**	40 *CFR* 761.62(b)(1)	X	X	Any PCB bulk product waste generated during deactivation activities will be stored in compliance with ARARs for disposal in the OSWDF provided it meets WAC.
	• Plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes or other similar coatings or sealants; caulking; Galbestos; non-liquid building demolition debris; or non-liquid PCB bulk product waste from the shredding of automobiles or household appliances from which PCB small capacitors have been removed (shredder fluff), and		40 *CFR* 761.62 (b)(1)(i)	X	X	See above.
	• Other PCB bulk product waste, sampled in accordance with the protocols set out in subpart R of 40 *CFR* Part 761, that leaches PCBs at < 10 µg/L of water measured using a procedure used to simulate leachate generation.		40 *CFR* 761.62 (b)(1)(ii)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of PCB bulk product waste in solid waste landfill (continued)	May dispose of in a municipal or non-municipal nonhazardous waste landfill if:	PCB bulk product waste not meeting conditions of 40 *CFR* 761.62(b)(1) (e.g., paper/felt gaskets contaminated by liquid PCBs)—**applicable**	40 *CFR* 761.62(b)(2)	X	X	See above.
	• The PCB bulk product waste is segregated from organic liquids disposed of in the landfill, and		40 *CFR* 761.62 (b)(2)(i)	X	X	See above.
	• Leachate is collected from the landfill and monitored for PCBs.		40 *CFR* 761.62 (b)(2)(ii)	X	X	See above.
Disposal of fluorescent light ballasts	Must be disposed of in a TSCA disposal facility as bulk product waste under 40 *CFR* 761.62 or in accordance with the decontamination provisions of 40 *CFR* 761.79.	Generation for disposal of fluorescent light ballasts containing PCBs in the potting material—**applicable**	40 *CFR* 761.60 (b)(6)(iii)	X	X	PCB fluorescent light ballasts will be disposed in the OSWDF based on compliance with the OSWDF WAC in accordance with the WAC Implementation Plan.
Disposal of PCB-contaminated electrical equipment (except capacitors)	Must remove all free-flowing liquid from the electrical equipment and dispose of the removed liquid in accordance with 40 *CFR* 761.60(a), and	Generation of PCB-contaminated electrical equipment (as defined in 40 *CFR* 761.3) for disposal—**applicable**	40 *CFR* 761.60(b)(4)	X	X	PCB contaminated electrical equipment will be disposed in the OSWDF based on compliance with the OSWDF WAC in accordance with the WAC Implementation Plan.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of PCB-contaminated electrical equipment (except capacitors) (continued)	Dispose of by one of the following methods: • In a facility managed as a municipal solid waste or nonmunicipal nonhazardous waste facility; • In an industrial furnace operating in compliance with 40 *CFR* 761.72; or • In a disposal facility under 40 *CFR* 761.60.	Drained PCB-contaminated electrical equipment, including any residual liquids—**applicable**	40 *CFR* 761.60 (b)(6)(ii)(A)	X	X	See above.
Disposal of PCB capacitors	Any person must assume that a capacitor manufactured prior to July 2, 1979, whose PCB concentration is not established, contains ≥ 500 ppm PCBs. If the date of manufacture is unknown, any person must assume the capacitor contains ≥ 500 ppm PCBs.	Generation of PCB capacitors with ≥ 500 ppm PCBs for disposal—**applicable**	40 *CFR* 761.2(a)(4)	X	X	PCB contaminated capacitors will be disposed in the OSWDF based on compliance with the OSWDF WAC in accordance with the WAC Implementation Plan.
	Shall comply with all requirements of 40 *CFR* 761.60 unless it is known from label or nameplate information, manufacturer's literature, or chemical analysis that capacitor does not contain PCBs.		40 *CFR* 761.60 (b)(2)(i)	X	X	See above.
	Shall dispose of in accordance with either of the following: • Disposal in an incinerator that complies with 40 *CFR* 761.70; or • Disposal in a chemical waste landfill that complies with 40 *CFR* 761.75.	Generation of PCB capacitors with ≥ 500 ppm PCBs for disposal—**applicable**	40 *CFR* 761.60 (b)(2)(iii)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of PCB capacitors (continued)	Shall dispose of in one of the following disposal facilities approved under 40 *CFR* 761.60: • Incinerator under 40 *CFR* 761.70; • Chemical waste landfill under 40 *CFR* 761.75; • High-efficiency boiler under 40 *CFR* 761.71; or • Scrap metal recovery oven or smelter under 40 *CFR* 761.72.	Disposal of large capacitors that contain ≥ 50 ppm but < 500 ppm PCBs—**applicable**	40 *CFR* 761.60 (b)(4)(ii)	X	X	See above.
	May dispose of in municipal solid waste landfill.	Generation of PCB small capacitors (as defined in 40 *CFR* 761.3) for disposal—**applicable**	40 *CFR* 761.60 (b)(2)(ii)	X	X	See above.
Disposal of PCB-contaminated articles	Must remove all free-flowing liquid from the article, disposing of the liquid in compliance with the requirements of 40 *CFR* 761.60(a)(2) or (a)(3), and	Generation of PCB-contaminated articles (as defined in 40 *CFR* 761.3) for disposal—**applicable**	40 *CFR* 761.60 (b)(6)(ii)	X	X	PCB-contaminated articles will be disposed in the OSWDF based on compliance with the OSWDF WAC in accordance with the WAC Implementation Plan.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Disposal of PCB-contaminated articles (continued)	Dispose by one of the following methods: • In accordance with the decontamination provisions at 40 *CFR* 761.79; • In a facility managed as a municipal solid waste or nonmunicipal nonhazardous waste facility; • In an industrial furnace operating in compliance with 40 *CFR* 761.72; or • In a disposal facility under 40 *CFR* 761.60.	Disposal of PCB-contaminated articles with no free-flowing liquid—**applicable**	40 *CFR* 761.60 (b)(6)(ii) (A) thru (D)	X	X	See above.
		Closure				
Closure performance standard for RCRA hazardous waste management units	Must close the facility in a manner that: • Minimizes the need for further maintenance; and	Closure of a RCRA hazardous waste management unit—**applicable**	40 *CFR* 264.111(a) *OAC* 3745-55-11(A)	X	X	No hazardous waste management units will be closed under deactivation. Hazardous waste storage areas permitted under the RCRA Part B Permit will be closed in accordance with approved closure plans as required by the RCRA Part B Permit.
	• Controls, minimizes or eliminates, to the extent necessary to protect human health and environment, postclosure escape of hazardous waste, hazardous constituents, contaminated run off or hazardous waste decomposition products to ground or surface waters or to the atmosphere.		40 *CFR* 264.111(b) *OAC* 3745-55-11(B)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Closure performance standard for RCRA hazardous waste management units (continued)	• Complies with the substantive closure requirements of 40 CFR 264 [*OAC* 3745-54 to 3745-57 and 3745-205] for the particular type of facility, including but not limited to the requirements of Sections 264.178 (container storage area) [*OAC* 3745-55-78], 264.197 (tanks) [*OAC* 3745-55-97], 264.310 (landfills) [*OAC* 3745-57-10], and 264.554 (remediation waste piles) [*OAC* 3745-56-58].		40 *CFR* 264.111(c) *OAC* 3745-55-11(C)	X	X	See above.
	During closure periods, all contaminated equipment, structures, and soils must be properly disposed or decontaminated.		40 *CFR* 264.114 *OAC* 3745-55-14	X	X	See above.
Postclosure care of RCRA hazardous waste management unit	Postclosure care in accordance with the substantive requirements of *OAC* 3745-55-17(A)(1) must begin after closure and continue for at least 30 years after that date. The Director may shorten or extend the postclosure period as indicated to protect human health and the environment.	Closure of a RCRA hazardous waste disposal unit—**applicable**	40 *CFR* 264.117 (a)(1) and (2) *OAC* 3745-55-17 (A)(1) and (2)	X	X	No hazardous waste management units will be closed under deactivation. Hazardous waste storage areas permitted under the RCRA Part B Permit will be closed in accordance with approved closure plans as required by the RCRA Part B Permit.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Closure of a RCRA container storage unit	Must remove all hazardous waste and residues from containment system. Remaining containers, liners, bases and soil containing or contaminated with hazardous waste or residues must be decontaminated or removed.	Closure of a RCRA hazardous waste container storage area—**applicable**	40 *CFR* 264.178 *OAC* 3745-55-78	X	X	No hazardous waste management units will be closed under deactivation. Hazardous waste storage areas permitted under the RCRA Part B Permit will be closed in accordance with approved closure plans as required by the RCRA Part B Permit.
Closure of a RCRA remediation waste staging pile	Must be closed by removing or decontaminating all remediation waste, contaminated containment system components, and structures and equipment contaminated with waste and leachate.	Closure of a remediation waste staging pile located in a previously contaminated area—**applicable**	40 *CFR* 264.554(j)(1) *OAC* 3745-57-74 (J)(1)	X	X	No hazardous waste pile will be generated during deactivation activities. It is also not anticipated that hazardous waste piles will be generated during demolition. However, if the need for hazardous waste piles becomes evident during demolition planning, compliant management strategies will be developed during demolition design development and included in demolition plans.
	Must decontaminate contaminated subsoils in a manner that will protect human health and the environment.	Closure of a remediation waste staging pile located in a previously contaminated area—**applicable**	40 *CFR* 264.554(j)(2) *OAC* 3745-57-74 (J)(2)	X	X	See above.
	Must be closed according to substantive requirements in 40 *CFR* 264.258(a) and 264.111 or 265.258(a) and 265.111 [*OAC* 3745-56-58(A) and 3745-55-11 or 3745-67-58 and 3745-66-11].	Closure of a remediation waste staging pile located in an uncontaminated area—**applicable**	40 *CFR* 264.554(k) *OAC* 3745-57-74(K)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Closure of RCRA hazardous waste tanks	At closure, remove all hazardous waste and hazardous waste residues from tanks, discharge control equipment, and discharge confinement structures.	Management of RCRA hazardous waste in tanks—**applicable**	40 *CFR* 264.197(a) *OAC* 3745-55-97(A)	X	X	There are currently no RCRA hazardous waste tanks, nor is it anticipated that that any hazardous waste tanks will be established.
	If all contaminated contents cannot be removed, must consider the tank system a landfill and close the facility and perform postclosure care in accordance with the landfill closure requirements of 40 *CFR* 264.310 (*OAC* 3745-57-10).		40 *CFR* 264.197(b) *OAC* 3745-55-97(B)	X	X	See above.
Closure of TSCA storage facility (i.e., storage areas established under this action)	Must close in a manner that eliminates the potential for postclosure releases of PCBs that may present an unreasonable risk to human health or the environment.	Closure of a TSCA storage facility—**applicable**	40 *CFR* 761.65(e)(1)	X	X	Closure of the TSCA storage areas will be conducted to prevent releases of PCBs.
	Must remove or decontaminate PCB waste residues and contaminated containment system components, equipment, structures, and soils during closure in accordance with the levels specified in the PCB Spills Cleanup Policy in subpart G of 40 *CFR* 761.		40 *CFR* 761.65 (e)(1)(iv)	X	X	Drums, equipment, and secondary containment components will be removed and stored for disposal either on site in the OSWDF (provided the waste meets WAC) or disposed off site at an appropriately licensed disposal facility and in accordance with disposal facility WAC.
	A TSCA/RCRA storage facility closed under RCRA is exempt from the TSCA closure requirements of 40 *CFR* 761.65(e).	Closure of TSCA/RCRA storage facility—**applicable**	40 *CFR* 761.65(e)(3)	X	X	Closure of RCRA areas will not be conducted as part of deactivation under this RD/RA Work Plan.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
			Transportation[b]			
Transportation of hazardous waste on site	The generator manifesting requirements of 40 *CFR* 262.20 to 262.32(b) [*OAC* 3745-52-20 to 3745-52-23 and 3745-52-32(B)] do not apply. Generator or transporter must comply with the requirements set forth in 40 *CFR* 263.30 and 263.31 [*OAC* 3745-53-30 and 3745-53-31] in the event of a discharge of hazardous waste on a private or public right-of-way.	Transportation of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by public or private right-of-way—**applicable**	40 *CFR* 262.20(f) *OAC* 3745-52-20(F)	X	X	Hazardous waste (paint, oil, rags soaked with either, etc.) may be transported on site. Manifesting is not required for on-site transportation.
Transportation of hazardous materials on site	Must meet the substantive requirements of 49 *CFR* Parts 171–174, 177, and 178 or the site- or facility-specific Transportation Safety Document [i.e., *Transportation Safety Document for the On-Site Transfer of Hazardous Material at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio,* LPP-0021/R3].	Transport of hazardous materials on the PORTS site—**TBC**	DOE Order 460.1C (4)(b)	X	X	Where DOT hazardous material regulations are not required to be met, DOE transportation requirements will be met for hazardous materials traveling on site.
Transportation of radioactive waste	Shall be packed and transported in accordance with the substantive requirements of DOE Order 460.1C (*Packaging and Transportation Safety*) and DOE Order 460.2A (*Departmental Materials Transportation and Packaging Management*).	Preparation of shipment of radioactive waste—**TBC**	DOE M 435.1-1 (I)(1)(E)(11)	X	X	The cited regulations and standards apply to off-site transportation activities.

[b]Off-site transportation, by definition, is not an on-site response action and is subject to all substantive, procedural, and administrative requirements of all legally applicable laws but not to any requirements that might be relevant and appropriate under the ARARs process.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Transportation of radioactive waste (continued)	To the extent practicable, the volume of waste and number of shipments shall be minimized.		DOE M 435.1-1 (III)(L)(2) DOE M 435.1-1 (IV)(L)(2)	X	X	Pollution prevention techniques will be implemented throughout remedy implementation to ensure waste volumes and associated waste shipments are minimized.
Transportation of PCB wastes off site	Must comply with the manifesting provisions at 40 *CFR* 761.207 through 218.	Relinquishment of control over PCB wastes by transporting or offering for transport—**applicable**	40 *CFR* 761.207(a)	X	X	Transportation of wastes off site will comply with all applicable DOE and DOT requirements.
Transportation of hazardous waste off site	Must comply with the generator requirements of 40 *CFR* 262.20 to 262.23 [*OAC* 3745-52-20 to 3745-52-23] for manifesting, Section 262.30 [*OAC* 3745-52-30] for packaging, Section 262.31 [*OAC* 3745-52-31] for labeling, Section 262.32 [*OAC* 3745-52-32] for marking, Section 262.33 [*OAC* 3745-52-33] for placarding, Section 262.40 and 262.41(a) [*OAC* 3745-52-40 and 3745-52-41(A)] for record keeping requirements, and Section 262.12 [*OAC* 3745-52-12] to obtain EPA ID number.	Preparation of RCRA hazardous waste for transport off site—**applicable**	40 *CFR* 262.10(h) *OAC* 3745-52-10(H) 40 *CFR* 262.20 to .23 *OAC* 3745-52-20 to -23 40 *CFR* 262.30 to .33 *OAC* 3745-52-30 to -33	X	X	See above.
Transportation of universal waste off site	Off-site shipments of universal waste by a large quantity handler of universal waste shall be made in accordance with 40 *CFR* 273.38 [*OAC* 3745-273-38].	Preparation of universal waste for transport off site—**applicable**	40 *CFR* 273.38(c) *OAC* 3745-273-38(C)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Transportation of universal waste off site (continued)	Off-site shipments to a foreign destination must comply with requirements applicable to a primary exporter in *OAC* 3745-52-10, 3745-52-53, 3745-52-56 and 3745-52-57 and export waste only upon consent of the receiving country and in conformance with the EPA "Acknowledgement of Consent" as defined in *OAC* 3745-52-50 to 3745-52-57. A copy of the consent must be provided to the transporter.		40 *CFR* 273.40 *OAC* 3745-273.40	X	X	No universal waste shall be exported out of the country.
Transportation of used oil off site	Except as provided in paragraphs (a) to (c) of 40 *CFR* 279.24 [*OAC* 3745-279-24(A) to (C)], generators must ensure that their used oil is transported by transporters who have obtained EPA ID numbers.	Preparation of used oil for transport off site—**applicable**	40 *CFR* 279.24 *OAC* 3745-279-24	X	X	Transportation of wastes off site will comply with all applicable DOE and DOT requirements.
Transportation of asbestos-containing waste materials off site	For asbestos-containing waste material to be transported off the facility site, label containers or wrapped materials with the name of the waste generator and location at which the waste was generated.	Preparation for transport of asbestos-containing waste materials off site—**applicable**	40 *CFR* 61.150 (a)(1)(v) *OAC* 3745-20-05 (C)(1)	X	X	See above.
	Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that the signs are visible. The markings must conform to the requirements of 40 *CFR* 61.149(d)(1)(i), (ii), and (iii).		40 *CFR* 61.150(c) *OAC* 3745-20-05(E)	X	X	See above.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Transportation of hazardous materials off site	Any person who, under contract with a department or agency of the Federal government, transports "in commerce," or causes to be transported or shipped, a hazardous material, shall be subject to and must comply with all applicable provisions of the HMTA and HMR at 49 CFR 171 – 180 related to marking, labeling, placarding, etc.	Preparation for transport or shipment "in commerce" of a hazardous material—applicable	49 *CFR* 171.1(c)	X	X	See above.
			Beryllium wastes			
Release of beryllium-contaminated equipment or other items	Must clean beryllium-contaminated equipment or other items to the lowest contamination level practicable, not to exceed the levels established in 10 *CFR* 850.31(b) and (c) and label them before release.	Release of beryllium-contaminated equipment or other items to general public or another DOE facility—**applicable**	10 *CFR* 850.31(a)		X	No plans to release to public.
	Before being released to the general public or another DOE facility, ensure that the removable contamination level of equipment and item surfaces does not exceed the higher of 0.2 µg/100 cm^2 or the concentration level of beryllium in soil at the point or release, whichever is greater;		10 *CFR* 850.31(b)(1)		X	No plans to release to public.
	Ensure equipment or item is labeled in accordance with 10 *CFR* 850.38(b); and		10 *CFR* 850.31(b)(2)		X	No plans to release to public.
	Release is conditioned on the recipient's commitment to implement controls that will prevent foreseeable beryllium exposure.		10 *CFR* 850.31(b)(3)		X	No plans to release to public.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy
Release of beryllium-contaminated equipment or other items (continued)	Before being released to another facility performing work with beryllium, must ensure that removal contamination level of equipment and other item surfaces does not exceed 3 µg/100 cm^2;	Release of beryllium-contaminated equipment or other items to another facility performing work with beryllium—**applicable**	10 *CFR* 850.31(c)(1)		X	No plans to release to public.
	Ensure equipment or item is labeled in accordance with 10 *CFR* 850.38(b); and		10 *CFR* 850.31(c)(2)		X	No plans to release to public.
	Enclose or place in sealed, impermeable bags or containers to prevent the release of beryllium dust during handling or transportation.		10 *CFR* 850.31(c)(3)		X	No plans to release to public.
Disposal of beryllium-containing waste or beryllium-contaminated equipment and other items	Must control the generation of beryllium-containing waste or beryllium-contaminated equipment and other items through the application of waste minimization principles.	Generation of beryllium-containing waste or beryllium-contaminated equipment and other items**—applicable**	10 *CFR* 850.32(a)		X	Contamination control during deactivation and demolition will be used to prevent the spread of beryllium contamination.
	Dispose of in sealed, impermeable bags, containers, or enclosures to prevent the release of beryllium dust during handling and transportation. Bags, containers, and enclosures must be labeled according to 10 *CFR* 850.38.		10 *CFR* 850.32(b)		X	Beryllium contaminated waste will be appropriately containerized.

Table A.2. Action-specific ARARs (Continued)

Action	Requirements[a]	Prerequisite	Citation	PB ROD	WD ROD	Comprehensive PB RD/RA Work Plan Compliance Strategy

ACM = asbestos-containing material
ALARA = as low as reasonably achievable
AOC = area of contamination
ARAR = applicable or relevant and appropriate requirement
CAMU = corrective action management unit
CFR = Code of Federal Regulations
CMBST = combustion
CWA = Clean Water Act of 1972
D&D = decontamination and decommissioning
DEACT = deactivation
DFF&O = *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*
DOE = U.S. Department of Energy
DOE M = Radioactive Waste Management Manual
DOT = U.S. Department of Transportation
EDE = effective dose equivalent
EPA = U.S. Environmental Protection Agency
HMR = Hazardous Materials Regulations
HMTA = Hazardous Materials Transportation Act of 1975
ID = identification
LDR = land disposal restriction
LLW = low-level (radioactive) waste
NACE = National Association of Corrosion Engineers
MVAC = motor vehicle air conditioning
NDA = nondestructive assay
NNSS = Nevada National Security Site
NPDES = National Pollutant Discharge Elimination System
OAC = Ohio Administrative Code
Ohio EPA = Ohio Environmental Protection Agency
OSWDF = on-site waste disposal facility
PB = process building
PCB = polychlorinated biphenyl
POLYM = polymerization
PORTS = Portsmouth Gaseous Diffusion Plant
POTW = publicly owned treatment works
PSS = Plant Shift Superintendent
RACM = regulated asbestos-containing material
RC = Ohio Revised Code
RCRA = Resource Conservation and Recovery Act of 1976, as amended
RD/RA = Remedial Design/Remedial Action
RORGS = recovery of organics
TBC = to-be-considered (guidance)
TCE = trichloroethene
TED = total effective dose
TSCA = Toxic Substances Control Act of 1976
UST = underground storage tank
UTS = universal treatment standards
VOC = volatile organic compound
WAC = waste acceptance criteria

APPENDIX B: CROSSWALK TO SECTIONS OF WORK PLAN THAT ADDRESS OSWDF WASTE ACCEPTANCE CRITERIA COMPONENTS 1A AND 1B AND CORRECTIVE ACTION MANAGEMENT UNIT INELIGIBLE WASTES

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TABLES

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The On-site Waste Disposal Facility (OSWDF) waste acceptance criteria (WAC), as included in the Waste Disposition Record of Decision, includes prohibited items (Component 1 of the WAC) that are not to be disposed in the OSWDF. Table B.1 presents these prohibitions and a crosswalk to the applicable sections of this remedial design/remedial action work plan where these items are addressed.

Table B.1. Prohibited Items per the OSWDF WAC

Prohibitions (Component 1A)		
Prohibition/Exclusions	**Rationale**	**Crosswalk to work plan**
A prohibition on the acceptance of CAMU-ineligible RCRA hazardous waste that does not meet LDR treatment standards.	40 *CFR* 268.40(a) *OAC* 3745-270-40(A)	N/A
A prohibition on the acceptance of CAMU-ineligible RCRA hazardous debris and/or soil that does not meet Alternate Treatment Standards.	40 *CFR* 268.45(a) (for hazardous debris) 40 *CFR* 268.49(a) (for hazardous soil) *OAC* 3745-270-45(A) (for hazardous debris) *OAC* 3745-270-49(A) (for hazardous soil)	N/A
A prohibition on CAMU-eligible waste that does not meet the adjusted treatment standard (5,000 ppm) for the Principal Hazardous Constituent of TCE.	40 *CFR* 264.552(e)(4) *OAC* 3745-57-72(E)(4)	4.2.5.1 Utility disconnects (as it relates to potential residual soils generated)
A prohibition on the acceptance of ignitable and reactive waste per RCRA.	40 *CFR* 264.312(b) *OAC* 3745-57-12(B)	4.2.3.1 Chemical-based characterization for on-site disposal
A prohibition on the acceptance of TRU waste or HLW.	DOE Order 435.1 design constraints.	4.2.4.8 Smoke detectors
A prohibition on the acceptance of refrigeration equipment with remaining refrigerant per Ozone Standards.	40 *CFR* 82.154(b)	4.2.4.1 Draining or removal of liquids, gases, and residues
A prohibition on the placement of acid batteries.	40 *CFR* 273.31 *OAC* 3745-273-31	4.2.4.2 Universal waste
A prohibition on the placement of bulk used oils in liquid form.	40 *CFR* 279.81 *OAC* 3745-279-81	4.2.4.1 Draining or removal of liquids, gases, and residues
Prohibition on the disposal of PCB-contaminated electrical equipment (except capacitors) containing free-flowing liquids.	40 *CFR* 761.60(b)(4)	4.2.4.3 PCB wastes
Prohibition on the disposal of PCB-contaminated articles containing free flowing liquids.	40 *CFR* 761.60(b)(6)(ii)	4.2.4.3 PCB wastes 4.2.4.1 Draining or removal of liquids, gases, and residues
Prohibition on the disposal of PCB liquids drained from electrical equipment.	Must be disposed in an incinerator or high-efficiency boiler depending on concentration.	4.2.4.3 PCB wastes
Waste must not be pyrophoric. Pyrophoric materials contained in waste shall be treated, prepared, and packaged to be nonflammable.	*OAC* 3701:1-54-10(B)(6)	4.2.3.1 Chemical-based characterization for on-site disposal
Waste must not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.	*OAC* 3701:1-54-10(B)(4)	4.2.3.1 Chemical-based characterization for on-site disposal

Table B.1. Prohibited Items per the OSWDF WAC (Continued)

Prohibitions (Component 1A) (continued)		
Prohibition/Exclusions	**Rationale**	**Crosswalk to work plan**
Waste must not contain or be capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste.	*OAC* 3701:1-54-10(B)(5)	4.2.4.1 Draining or removal of liquids, gases, and residues 4.2.4.9 Actions to reduce worker hazards
Prohibition on the acceptance of RCRA hazardous waste containing bulk or noncontainerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added).	40 *CFR* 264.314(a) *OAC* 3745-27-19(E)(8)(b) and (h)(i) *OAC* 3745-57-14(A)(E)	4.2.4.1 Draining or removal of liquids, gases, and residues
Prohibition on the placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU except where placement of such wastes facilitates the remedy selected for the waste. (This prohibition applies to CAMU eligible waste.)	40 *CFR* 264.552(a)(3) *OAC* 3745-57-72(A)(3)	4.2.4.1 Draining or removal of liquids, gases, and residues
Prohibited Waste Streams by Agreement (Component 1B)		
Waste Stream	**Description**	**Crosswalk to work plan**
Off-PORTS generated waste.	A prohibition on the acceptance of waste from off-PORTS generating sources (excluding lab returns and treatability testing wastes and material currently stored on the Facility).	None present
Compressors, Converters, and Coolers from X-326.	Components in-place within the X-326 Process Building as of April 15, 2010, the initial date of the DFF&O.	N/A Addressed in separate RD/RA work plan.
Enriched materials.	Containerized nuclear material inventories of uranium compounds exhibiting enrichments greater than 20 percent (excludes items such as miscellaneous parts, pipes, valves, empty containers etc., with only residual contamination which were packaged for ease of handling and safety reasons).	4.3.6 Treatment (Waste Preparation for Disposition)

CAMU = Corrective Action Management Unit
CFR = Code of Federal Regulations
DFF&O = *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*
DOE = U.S. Department of Energy
HLW = high-level waste
LDR = land disposal restrictions
N/A = not applicable
OAC = Ohio Administrative Code
PCB = polychlorinated biphenyl
PORTS = Portsmouth Gaseous Diffusion Plant
RCRA = Resource Conservation and Recovery Act of 1976, as amended
RD/RA = remedial design/remedial action
TCE = trichloroethene
TRU = transuranic

In the Corrective Action Management Unit (CAMU) and Area of Contamination (AOC) Supplement to the Waste Disposition Remedial Investigation/Feasibility Study (RI/FS), no principal hazardous constituents were identified for building demolition waste on the basis that all segregatable Resource Conservation and Recovery Act of 1976, as amended, hazardous wastes, regardless if CAMU-eligible or CAMU-ineligible, would be removed from the buildings before they are demolished, leaving only solid and low-level waste for disposition. Examples of these wastes that were identified for off-site disposal were provided in Appendix C of the CAMU and AOC supplement to the Waste Disposition RI/FS, and Table B.2 presents the waste examples from Appendix C applicable to the Process Buildings Deactivation Project. The table lists the waste by regulatory type, provides examples of the waste, and identifies the section of the work plan where removal and management of this waste can be found.

Table B.2. Waste Identified for Off-site Disposal in the CAMU and AOC Supplement to the Waste Disposition RI/FS

Regulatory Waste Type	Examples	Crosswalk to work plan
CAMU-ineligible Building Contents Examples		
RAD Free: RCRA Hazardous (Listed or Characteristic) and RAD Free: RCRA Non-Hazardous Solid Wastes (only the daily trash component)	As generated wastes: • RCRA Wastes in Containers (e.g., RCRA Storage or Satellite Accumulation Areas) and • Solid waste generated as daily trash during industrial operations	N/A
RAD Contaminated: RCRA Hazardous (Listed or Characteristic)	RAD contaminated containerized wastes Incidental MLLW generated during operations of RCRA-permitted area	4.2.2.3 Operations relocation
CAMU-eligible Building Contents Examples		
RAD Free: RCRA Hazardous (Listed or Characteristic)	Universal Wastes, Lead Circuit Boards	4.2.4.2 Universal waste 4.2.4.5 Removal of segregatable RCRA hazardous waste and electronic waste
RAD Contaminated: RCRA Non-Hazardous Solid Wastes	Converters, compressors, and coolers from X-326 only.	N/A Addressed in separate RD/RA work plan.

CAMU = Corrective Action Management Unit
MLLW = mixed low-level (radioactive) waste
N/A = not applicable
RAD = radiologically
RCRA = Resource Conservation and Recovery Act of 1976, as amended
RD/RA = remedial design/remedial action

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APPENDIX C: COMMERCIAL BULB CRUSHER EXAMPLE

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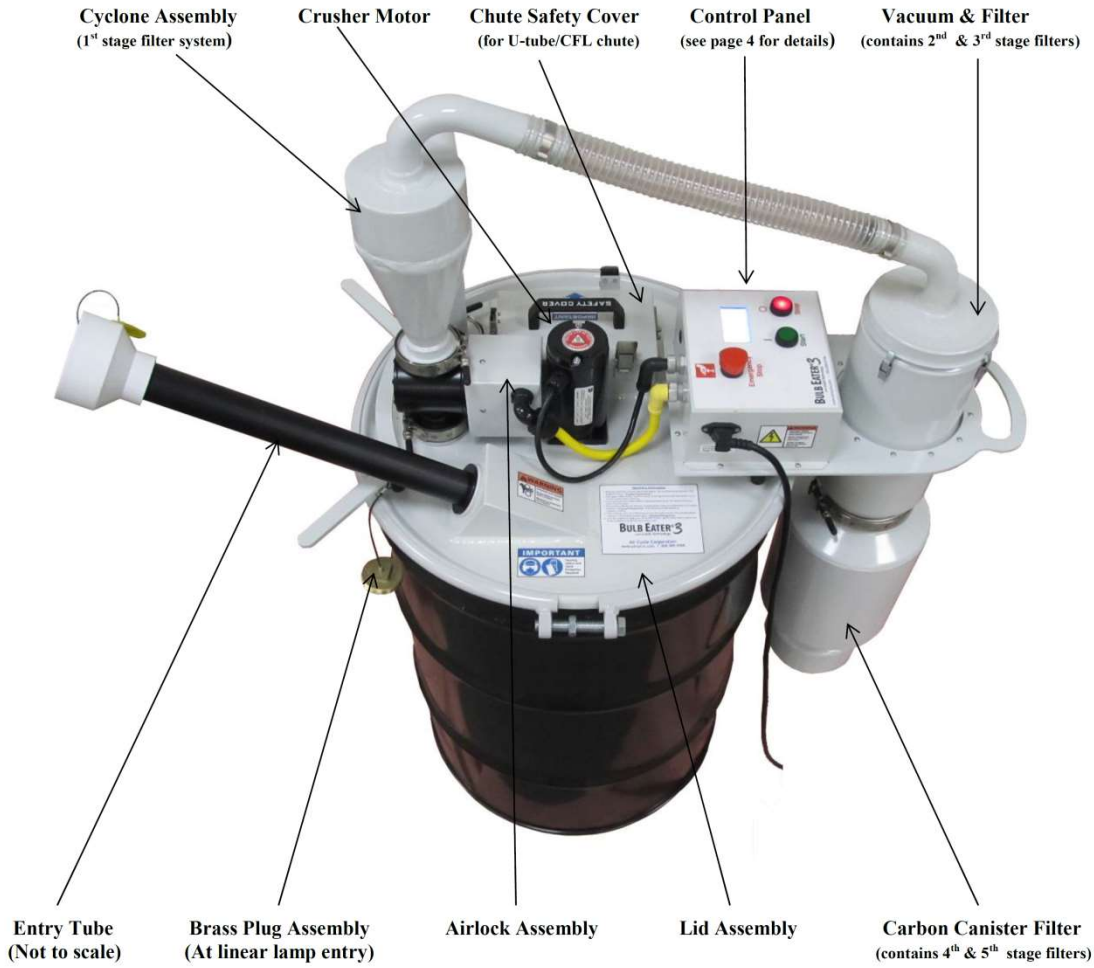
The following pages provide visual description of a typical, commercially available bulb crusher as expected to be employed for bulb crushing as described in this work plan.

The BULB EATER® 3
with Intelli Technology

The Bulb Eater® 3 is capable of crushing any size linear/straight fluorescent lamp, u-tube fluorescent lamp, and compact fluorescent lamps.



Not pictured


48" Entry Tube


Spinner Assembly
(located on underside of lid)


2nd Stage Filter


3rd & 5th Stage Filter


CFL/U-Tube Chute
(attaches on U-Tube Flange)

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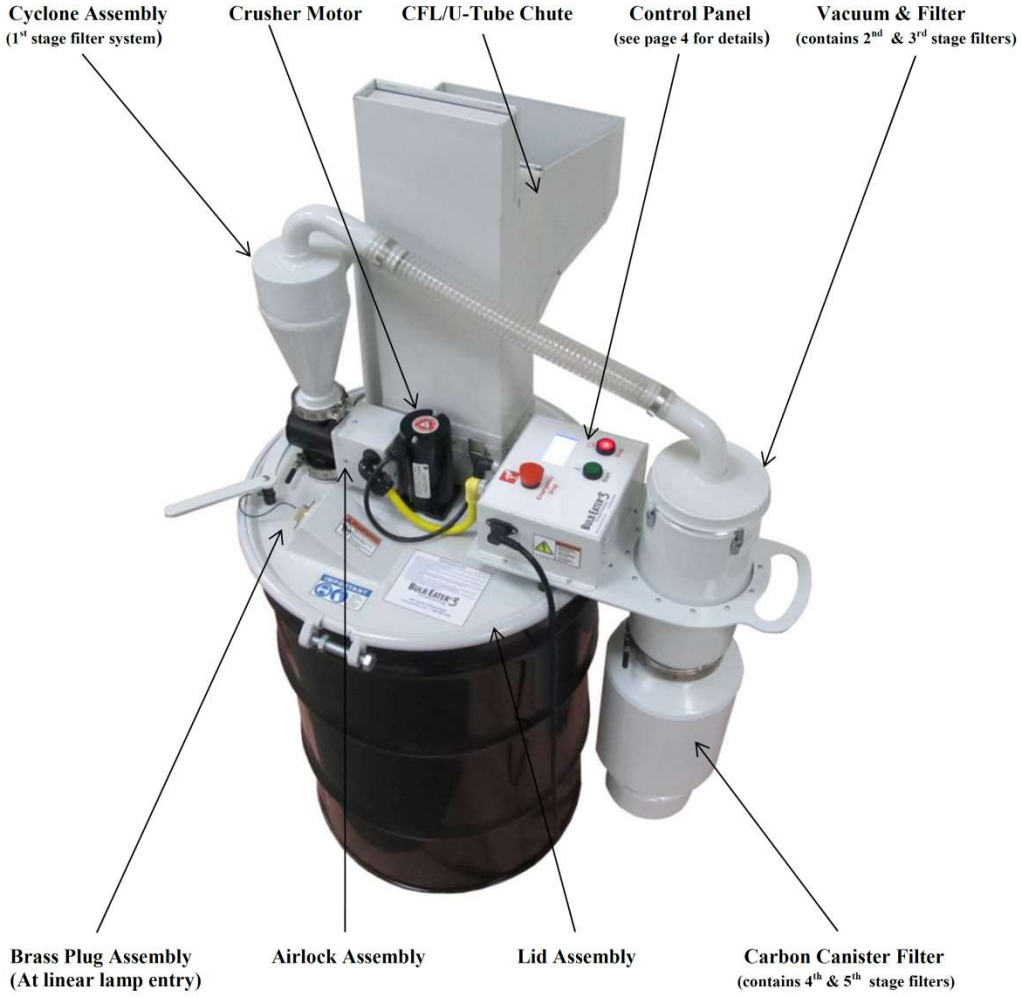
800.909.9709
www.AirCycle.com

[5]

BULB EATER® 3 with Intelli Technology

The BULB EATER® 3 with Intelli Technology with CFL/U-Tube Chute

The Bulb Eater® 3 is capable of crushing any size linear/straight fluorescent lamp, u-tube fluorescent lamp, and compact fluorescent lamps.



Not pictured

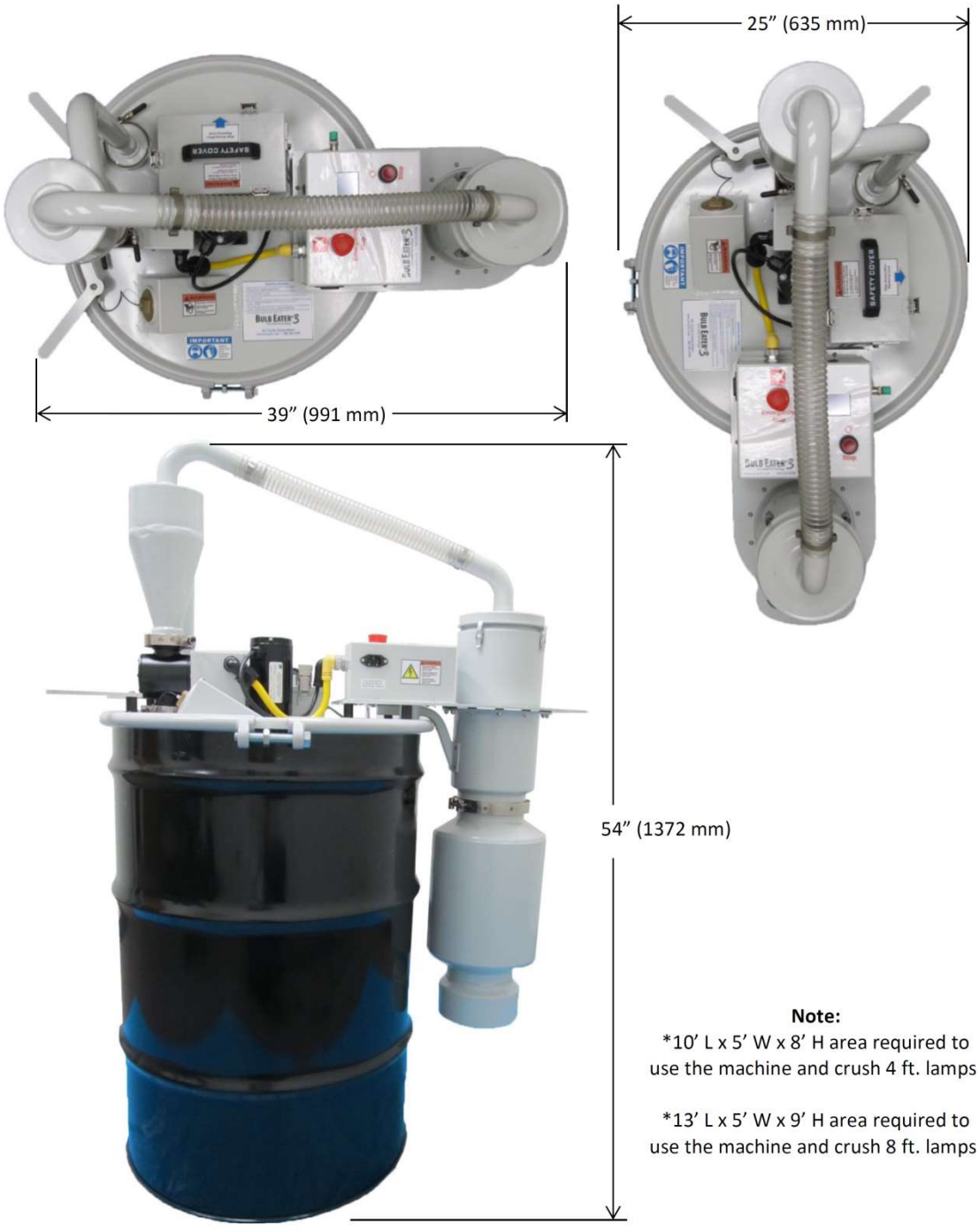

48" Entry Tube


Spinner Assembly
(located on underside of lid)


2nd Stage Filter


3rd & 5th Stage Filter

The BULB EATER®3 Dimensions
with Intelli Technology



Note:
*10' L x 5' W x 8' H area required to use the machine and crush 4 ft. lamps

*13' L x 5' W x 9' H area required to use the machine and crush 8 ft. lamps

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APPENDIX D: GROUTING OPERATIONS AT X-345

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Process Description of Grouting Operation at X-345

Containers of wastes with waste to be grouted will be retrieved by personnel one at a time and relocated to the grouting station that is located by the vehicle trap of the center bay of the X-345 building (see Figure D.1). At the grouting station, workers will wear the proper personal protective equipment and a waste package certifier will be present. One empty 55-gal receiving drum will be put into position under a high-efficiency particulate air drum ring that will be used to catch fugitive particulates during the waste and grout placement and mixing operations. Containers with wastes for grouting will be staged under ventilation when open for waste transfer to the receiving drum.

Grout will be mixed in an electric-powered grout mixer located in the vehicle trap. Once the grout is the proper consistency, it will be pumped through hoses attached with cam-lock fittings into the grouting station. A small amount of grout will be pumped into the receiving drum and then the waste material will be added from the waste container. The receiving drum will then be filled with a predesignated amount of grout. An electric hand-held mixer with a mixing paddle will be placed in the drum and operated to ensure that an even mixture is achieved.

Once the mixing is complete, the electric mixer will be removed leaving the mixing paddle in the drum. The initial source waste container will also be placed inside the receiving drum. The grouting hose inside the grouting station will be disconnected from the wall and also placed in the receiving drum. Any required samples will then be collected. The receiving drum will then be closed per manufacturer's directions and relocated to the drum storage area in the center bay of the X-345 building for curing.

Once cured, the drum will be weighed and placed on a preengineered pallet using drum-handling equipment. When four drums have been accumulated on a pallet, absorbent will be added to each drum, they will be resealed, banded to the pallet, labeled per transportation procedures, and placed in a staging area to await loadout and shipment.

A waste analysis plan will be developed to identify waste streams to be grouted, the analytical parameters to be tested, and the frequency of analyses. A waste package certification professional will be present to verify that no prohibited items are introduced into the container based on the transfer, storage, and disposal facility (TSDF) receiving the treated waste. Any treated drums of material that fail Toxicity Characteristic Leaching Procedure testing will be sent to an off-site TSDF for additional treatment.

After a group of drums on pallets have accumulated and been approved and scheduled for shipment, a truck will be staged at the loading dock of the X-345. An electric forklift will be used to load the truck with the pallets of drums. Transportation personnel will secure the load in the truck per procedure and complete the shipment off site from then on. At no time will any fossil-fueled equipment or vehicles be allowed in the X-345, including in the vehicle trap area.

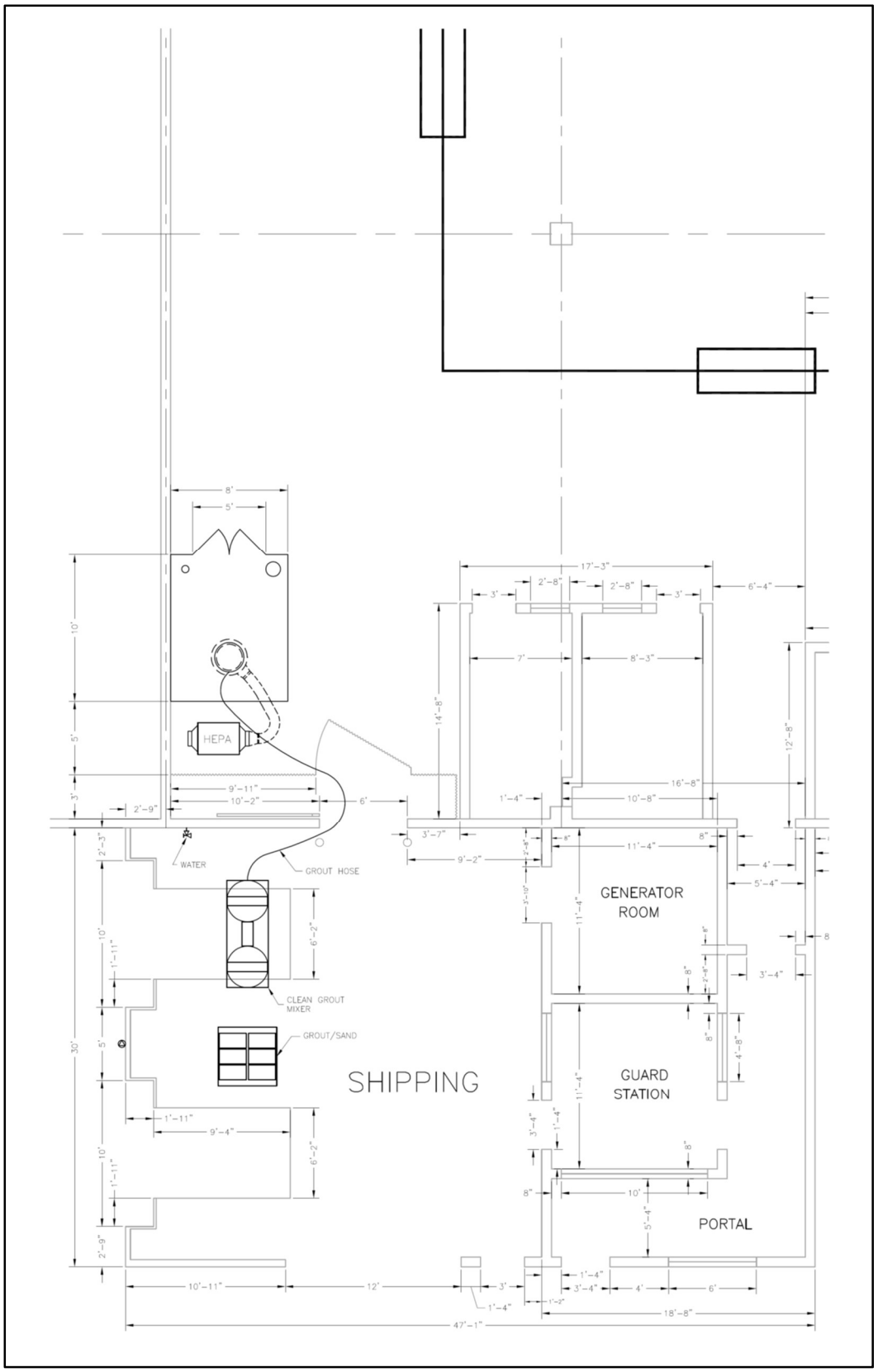

Figure D.1. X-345 Building Plan