Department of Energy

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MAR 2 7 2012

PPPO-03-1426732-12

Ms. Maria Galanti
Ohio Environmental Protection Agency
Southeast District Office
2195 Front Street
Logan, Ohio 43138

Dear Ms. Galanti:

FINAL ACTION MEMORANDUM FOR THE PLANT SUPPORT BUILDINGS AND STRUCTURES AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO

References:

1. Letter from V. Adams to M. Galanti, "Draft Action Memorandum for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio, (PPPO-03-1416007-12)," dated February 29, 2012
2. Letter from M. Galanti to J. Bradburne and K. Wiehle, "Ohio EPA Concurrence with the Draft Action Memorandum for the Plant Support Buildings and Draft Structures at the Portsmouth Gaseous Diffusion Plant," dated March 8, 2012

Enclosed, please find the *Action Memorandum for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE/PPPO/03-0230&D4). The Ohio Environmental Protection Agency (Ohio EPA) was provided with the draft Action Memorandum, which Ohio EPA concurred on in the letter dated March 8, 2012. This current Action Memorandum is the final version and has been signed by Mr. William E. Murphie, Manager of the Portsmouth/Paducah Project Office. This document was prepared in accordance with *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 September 12, 2011 Modification thereto.*

This transmittal includes:

- Final *Action Memorandum for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE/PPPO/03-0230&D4);

- Attachment 1: *Engineering Evaluation/Cost Analysis for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE/PPPO/03-0207&D4), which the Ohio EPA reviewed and concurred on in a letter dated March 8, 2012; and

- Attachment 2: Responsiveness Summary for Public Comments Received on the *Engineering Evaluation/Cost Analysis for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, which includes Appendix A: Transcript of the Public Availability Session.

Ohio EPA's engagement and participation in early discussion and draft document reviews was a tremendous benefit to the project and DOE appreciates your cooperation.

If you have any questions or require additional information, please contact me at (740) 897-2759 or Kristi Wiehle of my staff at (740) 897-5020.

Sincerely,

Dr. Vincent Adams
Portsmouth Site Director
Portsmouth/Paducah Project Office

Enclosure:
Final *Action Memorandum for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*

cc w/ enclosure:
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This document has been approved for public release:
Henry Thomas (signature on file) 3/14/2012
Classification & Information Officer Date

Action Memorandum for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio
(DOE/PPPO/03-0230&D4)

1.0 PURPOSE

The purpose of this Action Memorandum (AM) is to document the selection of the non-time-critical removal action for the decontamination and decommissioning (D&D) of 46 process support buildings/structures located at the Portsmouth Gaseous Diffusion Plant (PORTS), including associated materials or equipment anywhere within or adjacent to the buildings or structures. The removal action recommended in the *Engineering Evaluation/Cost Analysis for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (EE/CA) (U.S. Department of Energy [DOE] 2011) is selected in this AM. The EE/CA is provided in Attachment 1, which is incorporated by reference into this AM as if it is fully set forth herein.

2.0 SITE DESCRIPTION AND CONTAMINANTS

The plant support buildings and structures addressed in this AM are identified in Table 1 and shown on Figure 2 of the EE/CA.

Table 1. PORTS Process Support Buildings

Building Number	Building Name	DFF&O Group[a]
X-100	Administration Building	2
X-100B	Air Conditioner Equipment Building	2
X-101	Dispensary	2
X-102	Cafeteria	2
X-104	Guard Headquarters	2
X-106	Tactical Response Building	1
X-106C	New Fire Training Building	1
X-108H	Pike Avenue Portal	1
X-109A	Personnel Monitoring Station	1
X-109B	Personnel Monitoring Station	1
X-109C	Personnel Monitoring Station	1
X-343	Feed Vaporization and Sampling Building	4
X-530A	High Voltage Switchyard	2
X-530B	Switch House	2
X-530C	Test and Repair Building	2
X-530D	Oil House	2
X-530E	Valve House	2
X-530F	Valve House	2
X-600	Steam Plant	3
X-600B	Steam Plant Shop Building	3
X-600C	Ash Wash Treatment Building	3
X-611	Water Treatment Plant	2
X-611C	Filter Building	1
X-611D	Recarbonization Instrumentation Building	1
X-611E	Clear Well and Chlorine Building	1
X-612	Elevated Storage Tank	1
X-614A	Sewage Pumping Station	1
X-614B	Sewage Pumping Station	1

Table 1. PORTS Process Support Buildings (Continued)

Building Number	Building Name	DFF&O Group[a]
X-618	North Holding Pond Storage Building	1
X-621	Coal Pile Treatment Facility	3
X-624-1	Decontamination Pad	2
X-640-1	Fire Water Pump House	1
X-640-2	Elevated Storage Tank	1
X-735A	Landfill Utility Building	1
X-743	Lumber Storage Facility	1
X-744B	Salt Storage Building	1
X-744G	Bulk Storage Building	2
X-744H	Bulk Storage Building	1
X-744J	Bulk Storage Building	1
X-744L	Stores and Maintenance Warehouse	1
X-744S	Warehouse S Non-UEA	1
X-744W	Surplus and Salvage Warehouse	1
X-750	Mobile Equipment Maintenance Shop	2
X-750A	Garage Storage Building	1
X-752	Warehouse	1
X-752AT 1-4	Trailer Complex	1

[a]Group 1 – Low Risk/Low Complexity, Group 2 – Industrial/Medium Complexity, Group 3 – Chemical/Medium Complexity, Group 4 – Radiological/High Complexity

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 September 12, 2011 Modification thereto*

Based on previous reports (DOE 1993 and Theta Pro2Serve Management Company [TPMC] 2006), materials of construction, process knowledge, and the nature and extent of potential contamination, the most common contaminants of potential concern (COPCs) have been identified and presented along with the building descriptions in the EE/CA. The most common COPCs, which are substances that have the potential to adversely affect human health and the environment because of their concentrations, distribution, and toxicity, include asbestos, lead, radionuclides (primarily uranium), mercury, and polychlorinated biphenyls (PCBs). Some individual facilities also have the potential for volatile organic compounds, semivolatile organic compounds, heavy metals, corrosives, and biological hazards contaminants to be present.

The process knowledge inquiry included examination of available records and photographs about building use and history, interviews, and walkdowns of the buildings and structures. The walkdowns provided information about chemicals used in the buildings, materials used in building construction and their current condition, and radiologically controlled areas that resulted from existing radiological surveys. Knowledge of materials or chemicals used in the buildings was the basis for identifying additional COPCs and for the information in the building descriptions provided in Appendix A of the EE/CA. The presence of older insulation or tiled floors indicates that asbestos is a COPC; older painted surfaces may contain lead and PCBs.

DOE has evaluated potential reuse of the proposed buildings consistent with existing policies on disposition of buildings, DOE Order 458.1, and applicable segments of DOE Order 5400. Due to the presence of contamination, the aging condition of the buildings, and anticipated cost of maintenance, no future use has been identified at this time for these buildings.

Inclusion of a building on this list does not preclude its future reuse, if a need should be identified. Buildings that are shown to be free of contamination according to DOE Order 458.1 and applicable segments of DOE Order 5400, either under current conditions or after decontamination for the purpose of reusing the building, can

be removed from this decision through a decision modification pursuant to agreement between DOE and the Ohio Environmental Protection Agency (Ohio EPA) and in accordance with *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 September 12, 2011 Modification thereto* (DFF&O) (Ohio EPA 2011) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

The set of buildings addressed in the EE/CA and this AM includes a subset of buildings presented in Attachment G of the DFF&O, as well as the X-530A facility, which has been recently added to Attachment G. Surface features associated with a defined list of buildings or structures addressed by the EE/CA are the primary focus of the removal action evaluation. Surface features include any building or man-made structure that is at or above ground surface. Surface features include the slabs if the building is a slab-on-grade building. Also included in the scope are materials and equipment stored or used below grade or in subsurface features such as basements or valve pits within the building footprint. The subsurface structures themselves, for the non-slab-on-grade buildings (walls, floors, and protective slabs or coverings), are not included in this decision. For such buildings, remaining subsurface structures and covering slabs will become part of future EE/CA(s) or the Process Building and Complex Facilities D&D Evaluation Project Record of Decision.

3.0 THREATS TO PUBLIC HEALTH AND THE ENVIRONMENT

As discussed above, asbestos, lead, radionuclides (primarily uranium), mercury, and PCBs are the expected primary COPCs for the plant support buildings and structures.

Asbestos is a Class A carcinogen, which means it is known to cause cancer based on epidemiological studies. If appropriate controls are not in place, asbestos has the potential to affect human health and the environment during removal activities. Chrysolite, the most commonly found form of asbestos, is present in the transite siding at a volume of 12 to 50 percent. Chrysolite was also found in layered-paper insulation on potable cold water pipelines at a volume of 30 to 40 percent, and it was in the fittings, elbows and lagging of potable cold water lines, and circulating hot water jackets and insulation at a volume of 1 to 3 percent. This asbestos will continue to become more brittle and friable if not removed. If the asbestos is not removed, uncontrolled releases of asbestos could present a risk to human health and the environment. The exposure pathway for asbestos would most likely be through the air, and the primary pathway of concern would be inhalation, with the primary target organ being the lungs. The cancer effect would be asbestosis.

Lead is a Class B carcinogen, which means it is a probable human carcinogen. Lead-based paint is also expected to be present in many of the painted structures because of the age of the building/structures at PORTS. The lead paint could pose a threat to human health if it were to become airborne (i.e., mobile dust) or if it were subjected to heat. The primary pathways of exposure would be ingestion and inhalation with the primary target organs being the central nervous system, bones, and kidneys. Neuropsychological impairment would be a systemic effect from exposure; children are particularly susceptible to exposures to lead.

Mercury is a Class D carcinogen, which means it is not currently classified as causing cancer in humans. The primary exposure route of concern is inhalation of mercury vapors. The crucial target organ is the brain; mercury primarily has adverse effects on the central nervous system and can cause developmental effects in children. Mercury is expected to be present in the facilities in such places as electrical switches and mercury vapor lamps. If released to the environment, the potential for human exposure via inhalation is increased.

PCBs are Class B carcinogens, which means they are probable human carcinogens. PCBs are particularly harmful to the liver via the ingestion exposure pathway. PCBs are found in fluorescent lights with PCB ballasts and oils containing PCBs. PCBs can also be found in older paints and ventilation gaskets. Continued

deterioration of the facilities could result in the potential release of PCBs to the environment. If released to the environment, the potential for human ingestion is increased.

Radionuclides are Class A carcinogens, which means they are proven to cause cancer in humans via a variety of exposure pathways, depending on the specific radionuclide in question. The uranium isotopes (uranium-234, uranium-235, and uranium-238 in particular) can cause kidney, liver, and lung cancers/tumors from direct exposure, inhalation, and ingestion. If released to the environment, the potential for human exposure via inhalation, ingestion, and direct exposure is increased.

The primary pathways of exposure, target organs, and systemic and cancer effects that could be a risk/hazard to human health with respect to the plant support buildings and structures COPCs are presented in Table 2.

Table 2. Health Data on the Primary Contaminants of Potential Concern for D&D of PORTS Plant Support Buildings and Structures

Contaminant of Primary Concern	Carcinogen Class[a]	Human Health Exposure: Primary Pathway(s) of Potential Concern	Primary Target Organ(s) (for Systemic and/or Cancer Effects)	Reference for Carcinogen Class and Target Organs
Asbestos	A	Inhalation	Lung, asbestosis	ATSDR 2001
Lead	B1	Ingestion, inhalation	Central nervous system, bone, kidney, neuropsychological impairment	EPA 1989; ATSDR 2007
Mercury (elemental)	D	Inhalation of vapors	Central nervous system, kidney, developmental effects, gastrointestinal, eyes, urinary system	ATSDR 1999a
PCBs	B1	Ingestion, inhalation, dermal	Liver, hepatocellular tumors	ATSDR 2000
U-234	A	Inhalation, ingestion	Lung	IARC 2001; ATSDR 1999b
U-235	A	Ingestion, inhalation, external exposure to radiation	Kidney, lung, tumors, brain, liver, reproductive effects	IARC 2001; ATSDR 1999b
U-238	A	Ingestion, inhalation, external exposure to radiation	Kidney, lung, tumors (kidney, brain, liver), reproductive effects	IARC 2001; ATSDR 1999b

[a]Class A = human carcinogen
Class B1 = probable human carcinogen with limited human data
Class D = not classified (EPA 1989)

ATSDR = Agency for Toxic Substances and Disease Registry
D&D = decontamination and decommissioning
EPA = U.S. Environmental Protection Agency
IARC = International Agency for Research on Cancer
PCB = polychlorinated biphenyl
PORTS = Portsmouth Gaseous Diffusion Plant

If the support buildings and structures are allowed to remain in place, weather elements such as wind and rain could eventually result in infrastructure failure (e.g., asbestos transite siding blowing off buildings and structures), which in turn could result in an increased threat of exposure to human health and the environment. Risks to human health from exposure to the COPCs (asbestos, lead, radionuclides [primarily uranium], mercury, and PCBs) are minimal under current conditions, however, future uncontrolled releases could cause increased risks to human health and the environment. In addition, the release of COPCs could impact ecological receptors via surface water migration.

As these buildings continue to age, the threat of radiological and chemical substance releases is increased, and it becomes more difficult to contain these materials and prevent a release to the environment. Radiological and chemical substances could be released directly to the environment via, for example, a breach in a containment wall, roof, or other physical control as the buildings age and deteriorate.

4.0 ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from buildings or structures addressed in this AM may present an imminent and substantial endangerment to public health, or welfare, or the environment. Based on the streamlined (qualitative) risk assessment, DOE has determined that, if allowed to deteriorate in an uncontrolled manner, the plant support buildings and structures addressed in this AM present a threat to human health, safety, and the environment through the potential release and migration of contaminants to the air, surface water, and soil. Under National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 *Code of Federal Regulations (CFR)* 300.415(b)(2)(v), one of the considerations for whether to conduct the removal action is weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released. Weather causes the degradation of the structures, either immediately in the case of severe weather or slowly in the case of relentless changes in temperatures and wind. The deteriorating structures also present safety hazards and physical risks with respect to workers on the DOE reservation.

5.0 SELECTED ACTIVITIES

Alternative 2, Remove Structures, Off-site Disposition of Equipment and Materials, is the selected alternative for D&D of the plant support buildings and structures addressed in this Action Memorandum. This alternative has been determined to be the most cost-effective approach that satisfies the objectives for the removal action and meets the applicable or relevant and appropriate requirements (ARARs) to the extent practicable. This selected removal action contributes to the efficient performance of the anticipated long-term remedial action for this site.

The No Action alternative (Alternative 1) does not meet removal action objectives; remove hazardous substances, pollutants, and contaminants from the environment; provide a long-term or permanent solution; or contribute to progress toward overall site cleanup goals. A contingent remedy is also selected. Alternative 2a, Remove Structures, On- and Off-site Disposition of Equipment and Materials, allows for on-site disposal if an on-site disposal cell is selected in a finalized Record of Decision (ROD) (i.e., a ROD concurred with by Ohio EPA) and such on-site disposal cell becomes available and operational for the waste stream pursuant to an Ohio EPA approved waste acceptance criteria (WAC) prior to the Milestone identified for all staged waste to be taken off site for disposal in an Ohio EPA approved removal action work plan (RAWP). The current estimated cost for removal and off-site disposal of the structures and associated equipment and materials (Alternative 2) is approximately $66,000,000. Alternative 2a costs would be lower than Alternative 2, depending on if or when an on-site disposal cell would become available. Alternative 2a is not currently implementable because an on-site disposal cell is not available or authorized.

When DOE confirms there is no future use of a building or structure, when the building is no longer leased, and when funding and resources become available to implement any selected alternative, the removal action would be implemented. A single AM is being generated and separate RAWPs will be prepared for groups of buildings/structures, depending on the schedule for removal. Per the requirements of Table 1A of the DFF&O, the first RAWP would be submitted for Ohio EPA review within 90 days of DOE receiving Ohio EPA concurrence on the AM, unless otherwise mutually agreed to in writing by the parties, and will include buildings/structures for which DOE is prepared to proceed. DOE has requested an alternate schedule for submission of RAWPs as described in this paragraph. DOE will submit RAWPs for remaining buildings/ structures within 90 days of DOE notifying Ohio EPA in writing that DOE is prepared to proceed with removal of

any designated building/structure; the aforementioned 90-day period for submitting any such RAWP will be a Milestone. Additionally, DOE will identify the RAWPs projected to be submitted within the fiscal year (FY), the FY+1, and the FY+2 in the annual submittal required pursuant to Paragraph 20.b of the DFF&O. The various removal actions will be initiated for each building/structure or groups of buildings/structures by the dates established in the approved schedules in the applicable RAWPs.

PORTS' architectural resources have been divided into three broad categories based on their original function: Cold War-era core processing facilities; Cold War-era processing support facilities; and Non-Cold War-era mission facilities. Ten Cold War-era processing support resources are included in the scope of this decision, as well as three additional facilities determined to be "representatives" of a type of general support facility to the uranium enrichment process. The documentation level for these 10 core processing support facilities and the three "representative" facilities will consist of: a detailed written history and description; a compendium of copies of historic documentation including photographs, floor plans, equipment layout, and training manuals; and new photography and interpretive graphics, as appropriate. The balance of the structures proposed for demolition in the EE/CA are indistinct and non-representative support facilities (e.g., trailers, portals, shelters, sewage lift stations, etc.) that provided a variety of functions to the gaseous diffusion process. These non-distinct support facilities are utilitarian and not unique to the PORTS Cold War mission. More information on historic preservation mitigation measures is set forth in Appendix B of the EE/CA.

Demolition activities will be performed in compliance with the applicable or relevant and appropriate requirements (ARARs) presented in Appendix B of the EE/CA. The D&D activities include removal of scrap metal, equipment, infrastructure, and any waste materials and debris. ARARs of the Clean Air Act of 1970, as amended, specific for control of asbestos and/or radionuclide emissions would be met. Engineering controls (e.g., spraying or misting water) will be used to minimize the release of fugitive dust or other contaminants during D&D activities.

Building removal activities may result in the generation of hazardous waste, asbestos, and other types of waste. All wastes generated, including, but not limited to, debris, contaminated personal protective equipment (PPE), and decontamination wastes, will be appropriately characterized and managed in accordance with appropriate state of Ohio laws and regulations for hazardous and solid waste, the federal Toxic Substances Control Act of 1976, and other requirements as specified in Appendix B of the EE/CA. Mixed and hazardous waste stored in the Resource Conservation and Recovery Act of 1976, as amended, permitted storage areas will comply with the terms and conditions of the permit.

Decontamination waters will be discharged to existing treatment plants and will comply with the requirements of the applicable National Pollutant Discharge Elimination System (NPDES) permits for any permitted outfall through which this wastewater is discharged.

Any waste transferred off site along public right-of-ways will meet packaging, labeling, marking, manifesting, and placarding requirements, depending on the waste. In addition, the U.S. Environmental Protection Agency (EPA) in 40 *CFR* 300.440 requires that off-site disposal of any hazardous substance, pollutant, or contaminant generated during CERCLA response actions be sent to a treatment, storage, or disposal facility that complies with applicable federal and state laws and has been approved by EPA for acceptance of CERCLA waste.

The following activities are the key components of Alternative 2 and will be further defined in the appropriate RAWP or other appropriate project documentation. The EE/CA contains a discussion of the alternatives.

- **Mobilization/Site Preparation/Upkeep of Facility Configuration and Controls**

  To the extent such activities meet the definition of D&D in the DFF&O, the following types of activities will be conducted:

  - Office activities, support trailers and utilities may need to be reconfigured or installed to support the D&D activities.
  - Parking areas, fences, lighting, and stormwater controls may also need reconfiguration or installation.
  - Equipment will be brought onto the site, vegetation may be removed, and until the D&D occurs, the building or structure will be maintained in a safe configuration.
  - This effort includes maintenance and housekeeping of the facilities and support systems in advance of D&D activities.

- **Support Activities for D&D**

  To the extent such activities meet the definition of D&D in the DFF&O, the following types of activities will be conducted:

  - There may be a need to upgrade or install transportation support facilities such as haul roads, rail spurs, or decontamination facilities.
  - Depending on the recent mission of the building, there may be a need to relocate materials, offices, storage areas, treatment facilities, computer or communication systems, and construction of replacement services such as treatment facilities or shops.
  - Environmental or radiological monitoring systems may need to be upgraded in support of D&D.

- **Utility Redistribution**

  To the extent such activities meet the definition of D&D in the DFF&O, the following types of activities will be conducted:

  - It may be necessary to relocate or redistribute site utilities before a building or structure is demolished.
  - New firewater, process water, storm water, sewers, air, or steam systems may need to be installed to support D&D.
  - Power distribution systems may need to be moved or reconfigured.
  - Switchyards may need to be replaced and temporary boilers installed to support the isolation and demolition of switchyards and the steam plant.

- **Removal of Salvageable/Reusable Equipment**

  Equipment identified as salvageable/ reusable is expected to include, but is not limited to: transformers, empty tanks, switchgear, wet well pumps, motors, and overhead trolley cranes. Cranes and/or heavy equipment would be used to remove the equipment. Equipment identified as salvageable/reusable would be staged and loaded onto the recycler or end-user vehicle for transport.

- **Removal of Nonsalvageable/Nonreusable Equipment**

  Larger pieces of equipment and excess materials may be removed from the buildings and structures prior to demolition. Remaining waste would be removed from the buildings and structures prior to demolition. Any elements of the structures that require discrete packaging or disposal apart from the structure itself, such as remaining hazardous waste or asbestos, will also be removed. Liquids will be drained and collected. To the extent practical, equipment and materials will be removed from any subsurface structure, leaving only a structural shell below ground.

- **Decontamination**

  Pieces of equipment or portions of the structure could be cleaned of contamination to meet disposal requirements, transportation requirements, or future use as part of this alternative. Decontamination to free-release criteria could be completed prior to recycling or reusing a component of the equipment or structure or prior to reusing the building itself. Decontamination could be accomplished by washing, blasting, or scabbling contaminated surfaces. Residue would be collected and disposed of appropriately as a secondary waste stream.

- **Asbestos Removal**

  Some buildings contain asbestos that may remain in the buildings at the time of demolition. Engineering controls, including wetting methods, negative pressure air units, or containment structures will be used to control air emissions during demolition according to ARARs. Air monitoring will be conducted to assure adequacy of engineering controls and PPE.

- **Demolition of Surface Structures**

  The above-grade portion of the plant support buildings and structures will likely be removed using excavators with concrete-breaker, bucket, shear, and grapple attachments. Consistent with Attachment G of the DFF&O, these structures will be removed to the slab. Likewise, where slabs are not covering subsurface features, the slabs will also be demolished.

- **Concrete Characterization**

  Characterization of concrete would be conducted as part of this non-time-critical removal action. If cost effective, decontamination would occur if characterization data indicated the concrete walls would not qualify as clean hard fill (as defined in *Ohio Administrative Code* 3745-400-01(E)). If it is not cost effective to decontaminate the concrete or the decontaminated concrete does not meet the requirements as clean hard fill, it will be disposed in accordance with ARARs. If characterization data indicates the concrete meets the requirements as clean hard fill per the ARARs, the concrete would be removed and could be rubblized for use as clean hard fill elsewhere on the PORTS site or otherwise disposed in accordance with ARARs.

- **Recycling/Reuse**

  DOE may identify demolished materials or equipment meeting reuse criteria and requirements (e.g., ARARs, DOE Order requirements, etc.) that may be recycled or reused. The materials or equipment to be recycled or reused, and the conditions for recycle and reuse, will be described in the RAWP. Such material would be prepared to meet the transportation requirements and conditions set forth by the recycler. Material or

equipment otherwise eligible for recycling/reuse that is not recycled/reused will be dispositioned along with other material generated during the removal action.

- **Site Restoration and Demobilization**

  Upon completion of demolition, the equipment and materials used in the non-time-critical removal action will be demobilized from the site, and the site put in a safe configuration. Pathways for contaminant migration will be controlled (e.g., sealing of remaining slabs, capping of pipelines, or removing remaining contamination open to the environment). Temporary access roads and laydown areas will be removed in accordance with the applicable RAWP. Disturbed areas will be regraded and seeded when activities in the area are complete.

- **Waste Disposition**

  Waste generated by the removal action will be segregated, size-reduced if necessary, containerized, and shipped to an appropriately licensed off-site disposal facility. No decontamination or treatment would be required unless decontamination or treatment is necessary to meet land disposal restrictions or receiving facility WAC.

  Waters generated by the project (e.g., decontamination waters) will be sent to an existing on-site treatment facility or an existing NPDES outfall. Waters could be pretreated. If wastewaters do not meet the requirements for on-site treatment facilities or an NPDES outfall, those waters would be sent off site for disposal in accordance with ARARs.

Alternative 2a contains the same elements as Alternative 2. In addition, this alternative allows for on-site disposal in the event that an on-site disposal cell becomes operational and available for any project waste stream pursuant to the Ohio EPA-approved WAC issued under the Sitewide Waste Disposition Evaluation Project Record of Decision, prior to the Milestone (as identified pursuant to Paragraph 12.a.v. of the DFF&O) in the Ohio EPA concurred-with RAWPs. This alternative includes both on-site and off-site disposal of solid waste. In the event that an on-site waste disposition component is implemented in accordance with the DFF&O, Paragraph 12.a.v. of the DFF&O does not apply to any RAWPs issued thereafter; however, Paragraph 19 of the DFF&O does apply to any RAWPs issued thereafter. More details can be found in the EE/CA.

6.0 STATUTORY AND REGULATORY AUTHORITY

The Ohio EPA and DOE have entered into a formal agreement regarding the performance of D&D at PORTS. The terms of the agreement between Ohio EPA and DOE are contained in the DFF&O. The DFF&O was effective as of April 13, 2010 and amended September 12, 2011.

This removal action has been determined to be the most cost-effective approach that satisfies the objectives for the removal action and meets the ARARs to the extent practicable. The removal action contributes to the efficient performance of the anticipated long-term remedial action at PORTS.

The National Environmental Policy Act of 1969 (NEPA) requires all federal agencies to consider the possible effects (both adverse and beneficial) of their proposed activities before taking action. DOE has issued a Secretarial Policy Statement on NEPA (DOE 1994) that states DOE hereafter will rely on the CERCLA process for review of actions to be taken under CERCLA and will address and incorporate NEPA values in CERCLA documents to the extent practicable. Such values may include socioeconomic, cultural, ecological, aesthetic, and health effects, both short-term and cumulative, as well as environmental justice issues, land use issues, and impacts of off-site transportation of wastes. Guidance states that NEPA values will be incorporated to the extent

practicable, with more attention given to those aspects of the proposed action having the greater anticipated effects. In keeping with this policy, NEPA values were incorporated into the EE/CA.

7.0 PUBLIC PARTICIPATION

DOE held a 30-day public comment period on the EE/CA from October 24 through November 23, 2011. A public availability session was held November 10, 2011. Notice of the public comment period with a description of the preferred alternative was provided in local newspapers. A Responsiveness Summary to received comments is provided in Attachment 2.

8.0 SELECTED ACTION

Based on the analysis presented in the EE/CA, the selected action is appropriate and will be implemented in accordance with DFF&O requirements. This decision document represents the selected removal action for the support buildings and structures described in this AM. It was developed in accordance with the DFF&O and CERCLA and is not inconsistent with the NCP. This decision is based on information contained in the Administrative Record located at the DOE Environmental Information Center, 1862 Shyville, Rd., Suite 207, Piketon, Ohio. DOE issues this AM in accordance with the DFF&O and pursuant to DOE's authority under Executive Order 12580 to select and conduct removal actions under CERCLA.

9.0 REFERENCES

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TPMC 2006, *Facility Condition Survey of the Portsmouth Gaseous Diffusion Plant Facilities, Piketon, Ohio*, Theta Pro2Serve Management Company, LLC, Piketon, OH, August.

Approval:

William E. Murphie, Manager
U.S. Department of Energy
Portsmouth/Paducah Project Office

3/26/12
Date

The following attachments are enclosed with this Action Memorandum:

1. Attachment 1: *Engineering Evaluation/Cost Analysis for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE/PPPO/03-0207&D4).

2. Attachment 2: Responsiveness Summary for the *Engineering Evaluation/Cost Analysis for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE/PPPO/03-0207&D4)

ATTACHMENT 1

ENGINEERING EVALUATION/COST ANALYSIS FOR THE PLANT SUPPORT BUILDINGS AND STRUCTURES AT THE PORTMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO (DOE/PPPO/03-0207&D4)

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ENGINEERING EVALUATION/COST ANALYSIS FOR THE PLANT SUPPORT BUILDINGS AND STRUCTURES AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO

U.S. Department of Energy
DOE/PPPO/03-0207&D4

October 2011

This document has been approved for public release:

Henry Thomas *(signature on file)* 9-1-2011
Classification & Information Control Officer Date

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ENGINEERING EVALUATION/COST ANALYSIS FOR THE PLANT SUPPORT BUILDINGS AND STRUCTURES AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO

U.S. Department of Energy
DOE/PPPO/03-0207&D4

October 2011

Prepared for
U.S. Department of Energy
Portsmouth/Paducah Project Office

by:
Fluor-B&W Portsmouth LLC, Under Contract DE-AC30-10CC40017

FBP-ER-EECA-BG-RPT-0002, Revision 5

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CONTENTS

FIGURES

TABLES

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ACRONYMS

AM	action memorandum
ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	*Code of Federal Regulations*
COPC	contaminant of potential concern
D&D	decontamination and decommissioning
DFF&O	*Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project)*
DOE	U.S. Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
FR	*Federal Register*
FS	feasibility study
FY	fiscal year
LDR	land disposal restriction
LLW	low-level (radioactive) waste
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act of 1969
NPDES	National Pollutant Discharge Elimination System
O&M	operation and maintenance
OAC	Ohio Administrative Code
Ohio EPA	Ohio Environmental Protection Agency
PCB	polychlorinated biphenyl
PORTS	Portsmouth Gaseous Diffusion Plant
PPE	personal protective equipment
RAO	removal action objective
RAWP	removal action work plan
RCRA	Resource Conservation and Recovery Act of 1976
RI	remedial investigation
ROD	record of decision
SAP	sampling and analysis plan
S&M	surveillance and maintenance
TBC	to-be-considered
TPMC	Theta Pro2Serve Management Company, LLC
TSCA	Toxic Substances Control Act of 1976
USDA	U.S. Department of Agriculture
USEC	United States Enrichment Corporation
WAC	waste acceptance criteria
WRCC	Western Regional Climate Center

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EXECUTIVE SUMMARY

The Ohio Environmental Protection Agency (Ohio EPA) and the U.S. Department of Energy (DOE) have entered into a formal agreement regarding performance of the decontamination and decommissioning (D&D) process at the DOE Portsmouth Gaseous Diffusion Plant located in Piketon (Pike County), Ohio. The term D&D refers to a variety of activities, such as removing structures, dismantling building contents and foundations, and deactivating equipment. The terms of the agreement between the Ohio EPA and DOE are contained in the *Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project)* (hereafter referred to as DFF&O) (Ohio EPA 2010). The DFF&O was effective as of April 13, 2010.

This Engineering Evaluation/Cost Analysis (EE/CA) presents and evaluates the relevant data to support a determination as to the need for a removal action with respect to the plant support buildings and structures listed in Table 1 of this EE/CA, defines the specific objectives of any necessary removal action, evaluates removal action alternatives, identifies a recommended alternative, and presents the recommended alternative to the public for its review and comment prior to issuing an Action Memorandum selecting the removal action alternative to be implemented.

This EE/CA is being documented in accordance with Attachment D in the DFF&O, *Generic Statement of Work for Conducting an Engineering Evaluation/Cost Analysis (EE/CA)* and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), including 40 *Code of Federal Regulations* (*CFR*) Section 300.415(b)(4)(i).

The set of buildings addressed in this EE/CA includes a subset of buildings presented in Attachment G of the DFF&O, as well as the X-530A facility which has been recently added to Attachment G. Since this EE/CA determines that action is appropriate and necessary, it also satisfies the requirements of the Removal Site Evaluation as required under the DFF&O. Surface features associated with a defined list of buildings or structures addressed by this EE/CA are the primary focus of this removal action evaluation. Surface features include any building or man-made structure that is at or above ground surface. Surface features include the slabs if the building is a slab-on-grade building. Also included in the scope are materials and equipment stored or used below grade or in subsurface features such as basements or valve pits within the building footprint. The subsurface structures, themselves, for the non-slab-on-grade buildings (walls, floors, and protective slabs or coverings), are not included in this decision. For such buildings, remaining subsurface structures and covering slabs will become part of future EE/CA(s) or the Process Building and Complex Facilities D&D Evaluation Project Record of Decision (ROD).

Based on a streamlined (qualitative) risk assessment as allowed by the DFF&O, DOE has determined that, if allowed to deteriorate in an uncontrolled manner, the plant support buildings and structures present a threat to human health, safety, and the environment through the potential release and migration of contaminants to the air, surface water, and soil. The deteriorating structures also present safety hazards and physical risks with respect to workers performing routine surveillance and maintenance (S&M) activities associated with these facilities. The streamlined risk assessment supports the need for a non-time-critical removal action.

The following removal action objectives are defined in the DFF&O and form the basis for identifying and evaluating the appropriate response actions:

- Determine the viability of facility reuse

- Meet applicable or relevant and appropriate requirements (ARARs) to the extent practicable (e.g., National Oil and Hazardous Substances Pollution Contingency Plan standards)

- Be protective of relevant receptors

- Be cost effective.

In identifying potential removal alternatives for the plant support buildings and structures, DOE considered potential reuse of the buildings and structures. DOE has evaluated potential reuse of the proposed buildings and structures consistent with existing policies on disposition, DOE Order 458.1 and applicable segments of DOE Order 5400. Due to the presence of contamination, the aging condition of the buildings, and anticipated cost of maintenance, no future use has been identified at this time for these buildings. Therefore, DOE is not developing a separate reuse alternative for the EE/CA. The developed alternative provides for the ability to either delay implementation of the remedy or remove the building from the remedy if a future use for an individual building is identified. As discussed in Section 4.1.2 of this EE/CA, DOE has determined that reuse will not be carried forward for the removal action alternatives analysis.

The following removal alternatives were developed and evaluated for effectiveness, implementability, and cost, consistent with the DFF&O, which mirrors the U.S. Environmental Protection Agency guidance:

- Alternative 1 – No Action
- Alternative 2 – Remove Structures, Off-site Disposition of Equipment and Materials
- Alternative 2a - Remove Structures, On- and Off-site Disposition of Equipment and Materials.

Alternative 1 is required to be evaluated and serves as a baseline to which the other alternative may be compared. In the No Action alternative, all S&M activities would cease, the buildings would continue to deteriorate, and D&D would not be performed. Final disposition of contaminants generated by the structures' gradual degradation and ultimate failure would not occur. Alternative 1 is implementable but ineffective at achieving the removal action objectives or reducing actual or potential risks to workers and the environment. No costs are associated with Alternative 1.

Alternative 2 consists of removing the surface structures and all equipment or materials, above or below ground, associated with the identified building or structure, and provided the associated waste acceptance criteria are met, the disposal of generated non-salvageable or reusable materials in appropriate off-site disposal facilities. The remedy would be implemented when the building is no longer being used and consistent with DOE sequencing and priorities. A separate decision would be made for the subsurface structures. Alternative 2 effectively achieves the removal action objectives and reduces the risks to human health and the environment. This alternative is technically and administratively implementable. The estimated cost for implementing Alternative 2 is approximately $66,000,000.

Alternative 2a, Remove Structures, On- and Off-site Disposition of Equipment and Materials, is the same as Alternative 2 but allows for on-site disposal if an on-site disposal cell is selected in a finalized ROD (i.e., a ROD concurred with by Ohio EPA) and such on-site disposal cell becomes available and operational for the waste stream pursuant to an Ohio EPA approved waste acceptance criteria prior to the Milestone identified for all staged waste to be taken off-site for disposal in an Ohio EPA approved Remedial Action Work Plan. At this time, DOE is evaluating an onsite disposal cell in the Site-Wide Waste Disposition Evaluation remedial investigation/feasibility study.

Following analysis of the alternatives, Alternative 2 is the recommended alternative for D&D of the plant support buildings and structures. This alternative has been determined to be the most cost-effective approach that satisfies the objectives of the removal action and meets the ARARs. If in the future a ROD is finalized that selects an onsite disposal cell as the remedy and all other conditions set forth in the DFF&O are satisfied, Alternative 2a can be used as a contingent remedy.

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1. INTRODUCTION TO THE DECONTAMINATION AND DECOMMISSIONING PROCESS

1.1 PURPOSE

The purpose of this Engineering Evaluation/Cost Analysis (EE/CA) is to present and evaluate relevant data to support a determination as to the need for a removal action for the plant support buildings and structures at the Portsmouth Gaseous Diffusion Plant (PORTS), define the specific objectives of any necessary removal action, evaluate the removal action alternatives, identify a recommended alternative, and present the recommended alternative to the public for its review and comment prior to issuing an Action Memorandum (AM) selecting the removal action alternative to be implemented. The set of buildings addressed in this EE/CA includes a subset of buildings presented in Attachment G of the *Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project*) (hereafter referred to as the DFF&O) (Ohio Environmental Protection Agency [Ohio EPA] 2010). Since this EE/CA determines that action is appropriate and necessary, it also satisfies the requirements of the Removal Site Evaluation as required under the DFF&O.

The Ohio EPA and U.S. Department of Energy (DOE) have entered into a formal agreement regarding the performance of decontamination and decommissioning (D&D) at PORTS, located in Piketon (Pike County), Ohio. The term D&D refers to a variety of activities, such as removing structures, dismantling building contents and foundations, and deactivating equipment. The terms of the agreement between Ohio EPA and DOE are contained in the DFF&O. The DFF&O was effective as of April 13, 2010.

This EE/CA is being documented in accordance with Attachment D in the DFF&O, *Generic Statement of Work for Conducting an Engineering Evaluation/Cost Analysis (EE/CA)* and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), including 40 *Code of Federal Regulations* (*CFR*) Section 300.415(b)(4)(i).

A Consent Decree, signed in 1989 by DOE and Ohio EPA, and an Administrative Consent Order (amended in 1997) with the U.S. Environmental Protection Agency (EPA) and DOE require the investigation and cleanup of soils and groundwater at PORTS in accordance with the Resource Conservation and Recovery Act of 1976 (RCRA) Corrective Action Program under Ohio hazardous waste laws. Investigation and cleanup efforts for any affected soils and groundwater will be addressed under the RCRA Corrective Action Program and are not part of this non-time-critical removal action.

1.2 PHASES OF THE D&D PROCESS

The final phase in the life cycle of a nuclear facility is D&D. It consists, generally, of decontamination, dismantlement of equipment and buildings, demolition of structures, and management of resulting materials. The D&D process includes activities described in Section III, Paragraph 5.e, of the DFF&O.

If it is determined that a removal action is needed with respect to the PORTS plant support buildings and structures, D&D activities will be conducted as a non-time-critical removal action pursuant to the DFF&O.

A non-time-critical removal action process consists of the following elements:

- An EE/CA is performed to evaluate the need for a removal action and potential removal action alternatives, recommend an appropriate alternative, and provide the public an opportunity for review and comment before making a final decision on a removal action.

- The EE/CA is followed by an AM decision document that does the following:

  - Authorizes the action
  - Identifies the action and cleanup goals
  - Explains the rationale for authorizing the removal action
  - Provides a response to comments received from public review of the EE/CA.

- The AM is followed by submittal of one or more Removal Action Work Plans (RAWPs) that provide the design, construction, operation, and maintenance details of the removal action as set forth in the AM. The RAWPs would also identify milestones in accordance with the DFF&O requirements for implementation of the work.

- Following completion of fieldwork activities and receipt of all validated data, a Removal Action Completion Report will be issued.

1.3 COMMUNITY PARTICIPATION

Community involvement is a necessary aspect of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) process and is required under the DFF&O. DOE is required to conduct community relations activities for this removal action project in compliance with the NCP and the DFF&O. State and community acceptance of this action will be addressed by providing the EE/CA to the regulators and making the EE/CA available to the public and Site-Specific Advisory Board for information and comment. Specifically, a brief description of this EE/CA and a notice of availability of the entire document will be published in the local newspaper(s). Public stakeholders will have 30 days, or longer if requested, to review the EE/CA and submit comments. A written response will be prepared to address significant comments and will be included in the Administrative Record. DOE will provide an opportunity for public information exchange during the 30-day public review and comment period. Documents referenced in the EE/CA will be part of the Administrative Record and available to the public for review.

2. SITE CHARACTERIZATION

2.1 PORTSMOUTH FACILITY AND REMOVAL ACTION PROJECT AREA DESCRIPTION AND NATURE AND EXTENT OF CONTAMINATION

2.1.1 Portsmouth Facility Description

The PORTS site is located in a rural area of Pike County, Ohio, east of the Scioto River on a 5.8-sq-mile area (Figure 1). The site is 2 miles east of the Scioto River in a small valley running parallel to and approximately 130 ft above the Scioto River floodplain. Pike County has approximately 28,200 residents. The nearest population center to the PORTS site is Piketon, Ohio, which is located approximately 5 miles north on U.S. Route 23.

PORTS occupies an upland area of southern Ohio with an average land surface elevation of 670 ft above mean sea level. It sits in a 1-mile-wide abandoned river valley situated above the Scioto River floodplain to the west. In much of the industrialized area of PORTS, the original topography has been modified and graded for construction of buildings and other facility components. Much of the industrialized area is located on fill that was removed from the higher elevations at PORTS, and placed in existing drainage valleys and depressions.

PORTS is drained by several small tributaries of the Scioto River. Sources of surface water drainage include stormwater runoff, groundwater discharge, and effluent from plant processes. The largest stream is Little Beaver Creek, which drains the northern and northeastern portions of the PORTS property before discharging into Big Beaver Creek. Big Run Creek is the smaller tributary of the Scioto River that drains the southern portion of the PORTS property.

Both Little Beaver Creek and Big Run Creek cut through unconsolidated material and intersect bedrock, and the ancestral Portsmouth River Valley essentially forms a large “bowl” around PORTS. Therefore, groundwater leaving the site through unconsolidated deposits via Little Beaver Creek and Big Run Creek eventually drains to the Scioto River.

Two ditches drain the western and southwestern portions of the PORTS property. Flow in these ditches is low to intermittent. The West Drainage Ditch receives water from surface water runoff, storm sewers, and plant effluent. The unnamed southwestern drainage ditch receives water mainly from storm sewers and groundwater discharge. These two drainage ditches continue west and ultimately discharge into the Scioto River.

The subsurface in the PORTS area consists of approximately 30 to 40 ft of unconsolidated Quaternary clastic sediments unconformably overlying Paleozoic bedrock that dips gently toward the east. In stratigraphic order, bedrock is overlain by fluvial Gallia sand and gravel (Gallia) and by the lacustrine Minford clay and silt (Minford) of the Teays Formation.

Bedrock consisting of clastic sedimentary rocks underlies the unconsolidated sediments beneath PORTS. The geologic structure of the area is very simple, with the bedrock (Cuyahoga shale, Sunbury shale, Berea sandstone, and Bedford shale) dipping gently to the east-southeast. No known geologic faults are located in the area; however, joints and fractures are present in the bedrock formations.

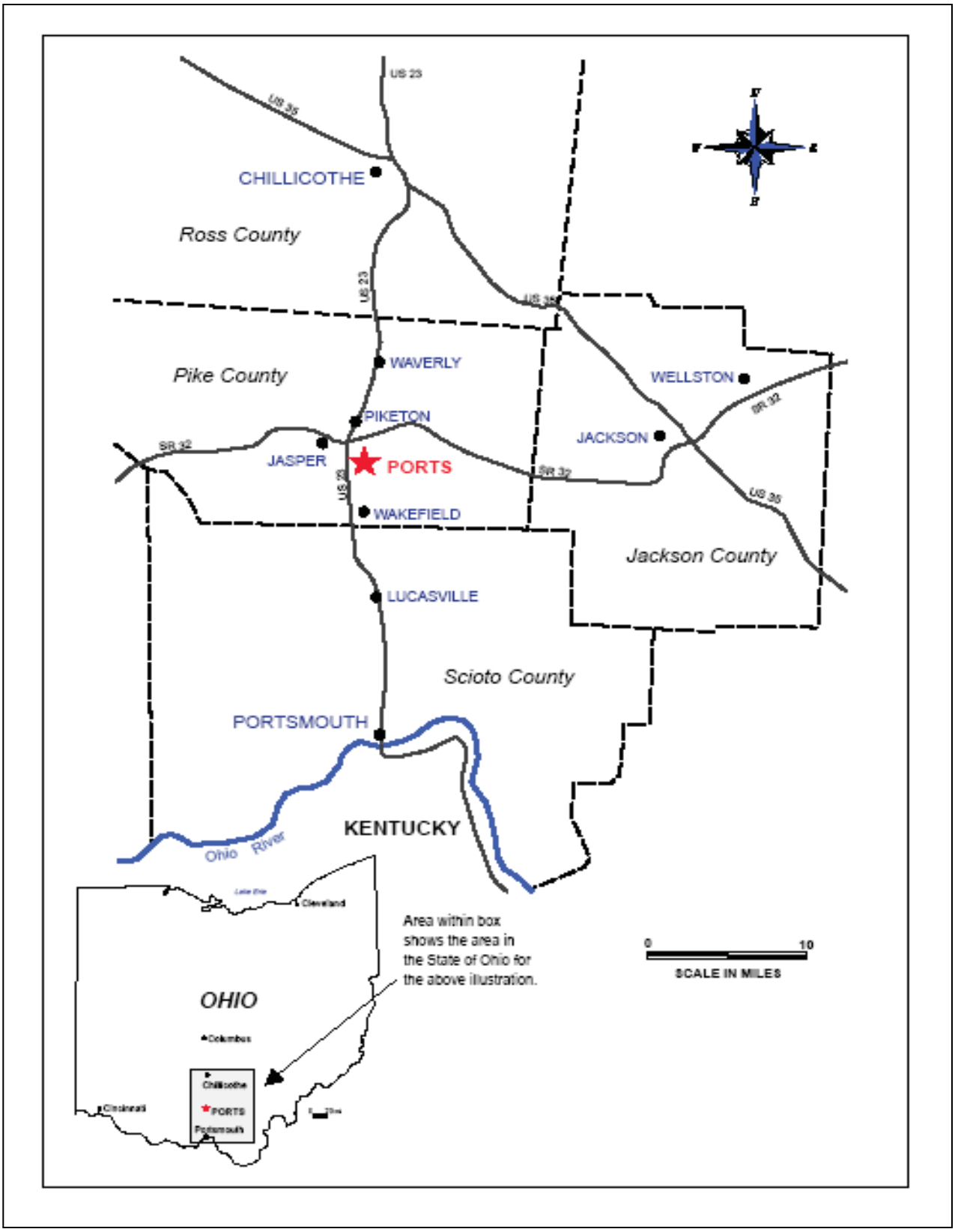

Figure 1. PORTS Site Vicinity Map

According to the soil survey of Pike County, Ohio, 22 soil types occur within the PORTS property boundary. The predominant soil type at PORTS is Omulga Silt Loam (U.S. Department of Agriculture [USDA] 1990). Most of the area within the active portion of the site is classified as urban land-Omulga complex with a 0-6 percent slope, which consists of urban land and a deep, nearly level, gently sloping, moderately well-drained Omulga soil in preglacial valleys. The urban land is covered by roads, parking lots, buildings, and railroads, which make identification of the soil series difficult. The soil in these areas is so obscured or disturbed that assignment of specific soil series is not feasible. Well-developed soil horizons may not be present in all areas inside Perimeter Road because of cut and fill operations related to construction.

The climate of the PORTS area can be described as humid continental and is characterized by warm, humid summers and cold, humid winters. Daily temperature averages are 73°F in the summer and 33°F in the winter. The average annual temperature is 54°F. Record high and low temperatures are 107°F and -25°F, respectively (Western Regional Climate Center [WRCC] 2009).

Precipitation is distributed relatively evenly throughout the year and averages approximately 40 in. per year. The month with the highest average amount of precipitation is May, and groundwater recharge and flood potential are greatest during this time. Fall is the driest season. Snowfall averages 19 in. per year. Although snow amounts vary greatly from year to year, an average of 8 days per year have snowfall in excess of 1 in. (WRCC 2009). Prevailing winds are from the south-southwest at approximately 5 mph. The highest average monthly wind speed of 11 mph typically occurs during the spring.

The terrain surrounding the plant, with the exception of the Scioto River floodplain, consists mainly of marginal farmland and densely forested hillsides. The Scioto River floodplain is extensively farmed. PORTS is situated on a 3,777-acre parcel of DOE-owned land. Twelve hundred acres of this area are located within the facility's Perimeter Road and comprise the centrally developed area. Five hundred acres of the land within Perimeter Road are fenced for controlled access. Approximately 190 buildings are located within PORTS, along with numerous utility structures. The DOE-owned land outside Perimeter Road is used for a variety of purposes, including a water treatment plant, holding ponds, sanitary and inert landfills, and open and forested buffer areas. The majority of site improvements associated with the gaseous diffusion plant are located within the fenced area. Within this area are three large process buildings and auxiliary buildings. A second developed area, covering approximately 300 acres, contains buildings and structures built for the Gas Centrifuge Enrichment Plant, portions of which are leased to United States Enrichment Corporation (USEC). These areas are largely devoid of trees, with grass and paved areas dominating the open space. The remaining area within Perimeter Road has been cleared and is essentially level.

A portion of the gaseous diffusion plant uranium enrichment facilities at PORTS is currently leased by USEC, including some of the buildings and structures in this EE/CA. The lease between DOE and USEC is active through July 1, 2016, although some buildings and structures may be returned to DOE on an earlier date. In addition to the leased buildings and structures, USEC also leases common areas, including ditches, creeks, ponds, and other areas such as roads and rail spurs that are necessary for ingress, egress, and proper maintenance of buildings. DOE and USEC are currently in negotiations to return the remaining majority of the gaseous diffusion plant facilities in the near future.

The economic region of influence for PORTS includes four counties in southern Ohio: Ross, Scioto, Jackson, and Pike. The largest city within 50 miles of the plant is Chillicothe, Ohio, with a population of 22,216 persons, based on year 2006 census results. The city of Chillicothe is located approximately 27 miles north of PORTS in Ross County, Ohio.

Pike County, the county in which PORTS is located, had a population of 28,269 persons in 2006. Other counties within the region of influence reported the following populations per the 2008 census: Jackson County, Ohio, 33,543; Ross County, Ohio, 75,556; and Scioto County, Ohio, 76,441. The nearest population center to PORTS is Piketon, Ohio, with a population of 1,907 persons reported in the 2000 Census.

2.1.2 Description of the Removal Action Project Area at the Site

Forty-six plant support buildings and structures addressed in this EE/CA are identified in Table 1, and a description of each building and structure is presented in Appendix A. The locations of these buildings are shown in Figure 2. Inclusion of a building on this list does not preclude a future reuse of the buildings if a need should be identified. Section 4.1.2.2 explains the modification to the decision if a building is reused.

2.1.3 Nature and Extent of Contamination

Based on previous reports (DOE 1993 and Theta Pro2Serve Management Company LLC [TPMC] 2006), materials of construction, process knowledge, and the nature and extent of potential contamination, the most common contaminants of potential concern (COPCs) have been identified and presented along with the building descriptions in the EE/CA. The most common COPCs, which are substances that have the potential to adversely affect human health and the environment because of their concentrations, distribution, and toxicity, include asbestos, lead, radionuclides (primarily uranium), mercury, and polychlorinated biphenyls (PCBs). Some individual buildings and structures also have the potential for volatile organic compounds, semivolatile organic compounds, heavy metals, corrosives, and biological hazards contaminants to be present.

The process knowledge inquiry included examination of available records and photographs about building use and history, interviews, and walkdowns of the buildings and structures. The walkdowns provided information about chemicals used in the buildings, materials used in building construction and their current condition, and radiologically controlled areas that resulted from existing radiological surveys. Knowledge of materials or chemicals used in the buildings was the basis for identifying additional COPCs and the information in the building descriptions provided in Appendix A of the EE/CA. The presence of older insulation or tiled floors indicates that asbestos is a COPC; older painted surfaces may contain lead and PCBs. In most instances, there is known building-specific contamination, as described in the building descriptions. In some cases, a building description (Appendix A of the EE/CA) will indicate there is no contamination present. That statement refers to the lack of any record of building-specific contamination being present. Nevertheless, based on the proximity of the buildings to areas of contamination or to historic releases, it is assumed that site-related contamination potentially exists at every building.

2.1.4 Previous Removal Actions and Investigations

Under the DFF&O, two AMs that have recently been signed include one for the Group 1 buildings (X-103, X-334, and X-344B) and one for the X-626 and X-630 Recirculating Cooling Water Complexes. Other buildings have been removed either as non-CERCLA maintenance actions or as CERCLA removal actions. Building descriptions presented in Appendix A include a summary of any previous removal actions and investigations, but most buildings have no previous actions or investigations.

Table 1. PORTS Process Support Buildings

Building Number	Building Name	DFF&O Group[a]	RAWP[b]
X-100	Administration Building	2	R1
X-100B	Air Conditioner Equipment Building	2	R1
X-101	Dispensary	2	R1
X-102	Cafeteria	2	R7
X-104	Guard Headquarters	2	R10
X-106	Tactical Response Building	1	R7
X-106C	New Fire Training Building	1	R12
X-108H	Pike Avenue Portal	1	R9
X-109A	Personnel Monitoring Station	1	R4
X-109B	Personnel Monitoring Station	1	R12
X-109C	Personnel Monitoring Station	1	R1
X-343	Feed Vaporization and Sampling Building	4	R12
X-530A	High Voltage Switch Yard	2	R4
X-530B	Switch House	2	R4
X-530C	Test and Repair Building	2	R4
X-530D	Oil House	2	R4
X-530E	Valve House	2	R4
X-530F	Valve House	2	R4
X-600	Steam Plant	3	R5
X-600B	Steam Plant Shop Building	3	R5
X-600C	Ash Wash Treatment Building	3	R5
X-611	Water Treatment Plant	2	R8
X-611C	Filter Building	1	R8
X-611D	Recarbonization Instrumentation Building	1	R8
X-611E	Clear Well and Chlorine Building	1	R8
X-612	Elevated Storage Tank	1	R10
X-614A	Sewage Pumping Station	1	R11
X-614B	Sewage Pumping Station	1	R11
X-618	North Holding Pond Storage Building	1	R11
X-621	Coal Pile Treatment Facility	3	R5
X-624-1	Decontamination Pad	2	R2
X-640-1	Fire Water Pump House	1	R10
X-640-2	Elevated Storage Tank	1	R10
X-735A	Landfill Utility Building	1	R9
X-743	Lumber Storage Facility	1	R3
X-744B	Salt Storage Building	1	R6
X-744G	Bulk Storage Building	2	R12
X-744H	Bulk Storage Building	1	R3
X-744J	Bulk Storage Building	1	R3
X-744L	Stores and Maintenance Warehouse	1	R12
X-744S	Warehouse S Non-UEA	1	R2
X-744W	Surplus and Salvage Warehouse	1	R6
X-750	Mobile Equipment Maintenance Shop	2	R11
X-750A	Garage Storage Building	1	R11
X-752	Warehouse	1	R6
X-752AT 1-4	Trailer Complex	1	R6

[a]DFF&O Attachment G Group 1 – Low Risk/Low Complexity, Group 2 – Industrial/Medium Complexity, Group 3 – Chemical/Medium Complexity, Group 4 – Radiological/High Complexity

[b]RAWP groupings are based on planned schedule for implementation and therefore do not correspond to DFF&O Attachment G groups.

DFF&O = *Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project)*
RAWP = removal action work plan

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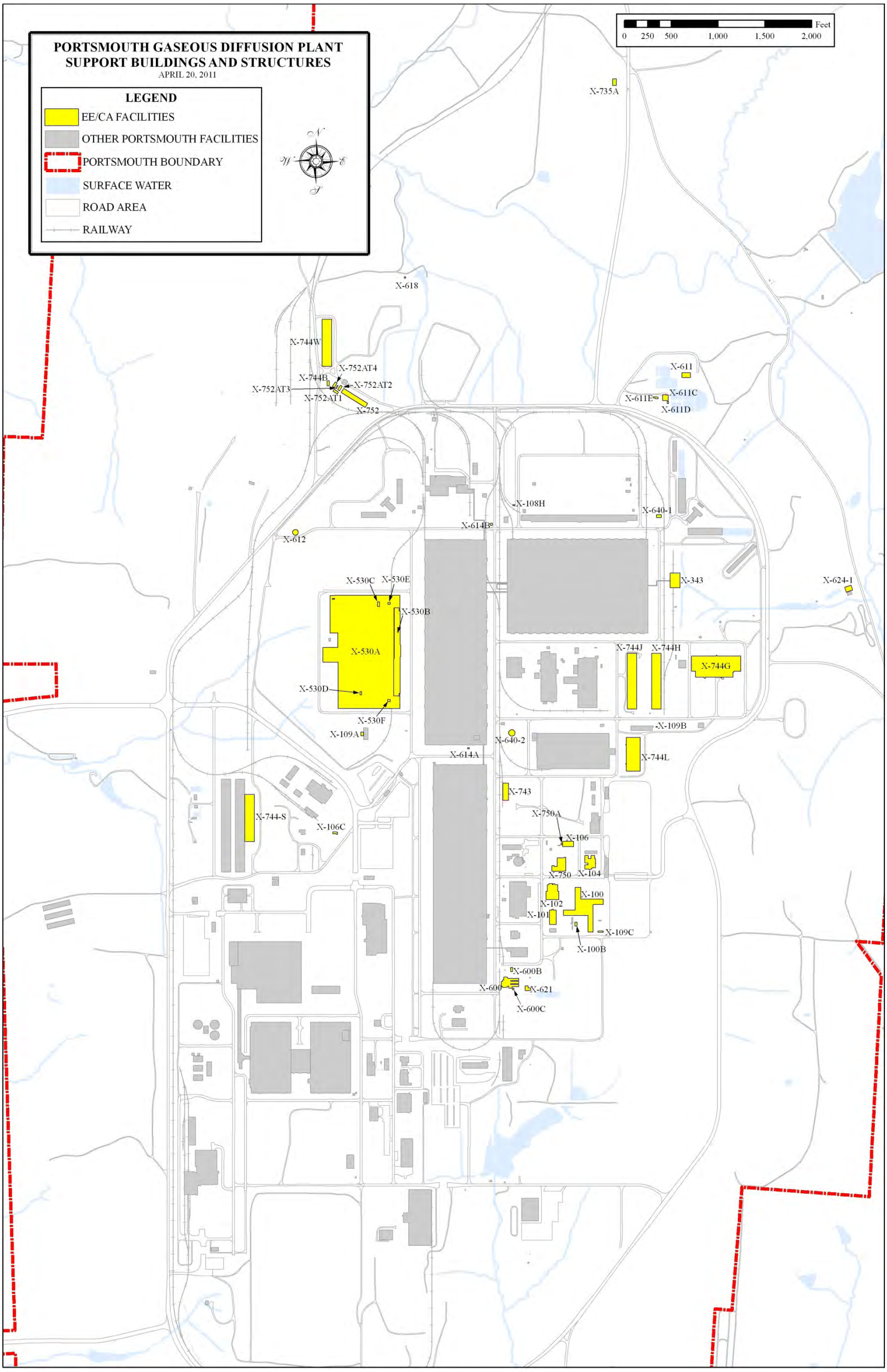

Figure 2. PORTS Remaining Buildings and Structures

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2.1.5 Assessment of Releases

An assessment of releases is provided with the building descriptions in Appendix A. When no release is indicated, that means that there is no record of a release unique to that building.

2.1.6 Streamlined Risk Evaluation

As allowed by the DFF&O, a streamlined (qualitative) risk assessment was performed for the Plant Support Buildings and Structures. The intent of a qualitative risk assessment is to determine the potential threat to human health and the environment using process knowledge. As discussed in Section 2.1.3, asbestos, lead, radionuclides (primarily uranium), mercury, and PCBs are the expected primary COPCs for the plant support buildings and structures.

Asbestos is a Class A carcinogen, which means it is known to cause cancer based on epidemiological studies. If appropriate controls are not in place, asbestos has the potential to affect human health and the environment during removal activities. Chrysolite, the most commonly found form of asbestos, is present in the transite siding at a volume of 12 to 50 percent. Chrysolite was also found in potable cold water layered-paper insulation at a volume of 30 to 40 percent, and it was in the potable cold water fittings, elbow and lagging, and circulating hot water jacket and insulation at a volume of 1 to 3 percent. This asbestos will continue to become more brittle and friable if not removed. If the asbestos is not removed, uncontrolled releases of asbestos would present a risk to human health and the environment. The exposure pathway for asbestos would most likely be through the air, and the primary pathway of concern would be inhalation, with the primary target organ being the lungs. The cancer effect would be asbestosis. Asbestos abatement would be accomplished using a licensed asbestos abatement contractor. Dust control measures, including misting and mechanical measures, would be employed during removal activities to minimize potential exposure and risk to human health and the environment. Air monitoring would be performed throughout D&D activities to ensure appropriate actions are taken, if required, to minimize potential exposure and risk to human health and the environment.

Lead is a Class B carcinogen, which means it is a probable human carcinogen. Lead-based paint is also expected to be present in many of the painted structures because of the plant's age. The lead paint would pose a threat to human health if it were to become airborne (i.e., mobile dust) or if it were subjected to heat. The primary pathways of exposure would be ingestion and inhalation, with the primary target organs being the central nervous system, bones, and kidneys. Neuropsychological impairment would be a systemic effect from exposure; children are particularly susceptible to exposures to lead. If the structures are removed, appropriate controls such as personal protective equipment (PPE) would be used to protect workers. Throughout the removal action, air samples would be collected to ensure appropriate actions are taken, if required, to minimize potential exposure and risk to human health and the environment.

Mercury is a Class D carcinogen, which means it is not currently classified as causing cancer in humans. The primary exposure route of concern is inhalation of mercury vapors. The crucial target organ is the brain; mercury primarily has adverse effects on the central nervous system and can cause developmental effects in children. Mercury is expected to be present in the buildings in such places as electrical switches and mercury vapor lamps. If released to the environment, the potential for human exposure via inhalation is increased.

PCBs are Class B carcinogens, which means they are probable human carcinogens. PCBs are particularly harmful to the liver via the ingestion exposure pathway. PCBs are found in fluorescent lights with PCB ballasts and oils containing PCBs. PCBs can also be found in older paints and in ventilation gaskets. Continued deterioration of the buildings could result in the potential release of PCBs to the environment. If released to the environment, the potential for human ingestion is increased.

Radionuclides are Class A carcinogens, which means they are proven to cause cancer in humans via a variety of exposure pathways, depending on the specific radionuclide in question. The uranium isotopes (e.g., uranium-234, uranium-235, and uranium-238 in particular) can cause kidney, liver, and lung cancers/tumors from direct exposure, inhalation, and ingestion. If released to the environment, the potential for human exposure via inhalation, ingestion, and direct exposure is increased.

If the plant support buildings and structures are allowed to remain in place, weather elements such as wind and rain could eventually result in infrastructure failure (e.g., asbestos transite siding blowing off buildings and structures), which, in turn, may result in an increased threat of exposure to human health and the environment. Risks to human health from exposure to the COPCs (asbestos, PCBs, lead, or uranium) are minimal under current conditions, however, future uncontrolled releases could cause increased risks to human health and the environment. In addition, the release of COPCs could impact ecological receptors via surface water migration.

The primary pathways of exposure, target organs, and systemic and cancer effects that could be a risk/hazard to human health with respect to the plant support buildings and structures COPCs are presented in Table 2.

Table 2. Health Data on the Primary Contaminants of Potential Concern for D&D of Plant Support Buildings and Structures at the PORTS Site

COPC	Carcinogen Class[a]	Human Health Exposure: Primary Pathway(s) of Potential Concern	Primary Target Organ(s) (for Systemic and/or Cancer Effects)	Reference for Carcinogen Class and Target Organs
Asbestos	A	Inhalation	Lung, asbestosis	ATSDR 2001
Lead	B1	Ingestion, inhalation	Central nervous system, bone, kidney, neuropsychological impairment	EPA 1989; ATSDR 2007
Mercury (elemental)	D	Inhalation of vapors	Central nervous system, kidney, developmental effects, gastrointestinal, eyes, urinary system	ATSDR 1999a
PCBs	B1	Ingestion, inhalation, dermal	Liver, hepatocellular tumors	ATSDR 2000
U-234	A	Inhalation, ingestion	Lung	IARC 2001; ATSDR 1999b
U-235	A	Ingestion, inhalation, external exposure to radiation	Kidney, lung, tumors, brain, liver, reproductive effects	IARC 2001; ATSDR 1999b
U-238	A	Ingestion, inhalation, external exposure to radiation	Kidney, lung, tumors (kidney, brain, liver), reproductive effects	IARC 2001; ATSDR 1999b

[a]Class A = human carcinogen, Class B1 = probable human carcinogen with limited human data, B2 = probable human carcinogen with sufficient evidence in animals, Class C = possible human carcinogen, Class D = not classified, and Class E = not a human carcinogen (EPA 1989).

ATSDR = Agency for Toxic Substances and Disease Registry
COPC = contaminant of potential concern
EPA = U.S. Environmental Protection Agency
IARC = International Agency for Research on Cancer
PCB = polychlorinated biphenyl

Security controls, including administrative and physical access controls, are currently in place to limit unauthorized access to these buildings, and only appropriately trained and authorized personnel are allowed entrance. These institutional controls reduce the potential for direct contact with, and exposure to, the COPCs.

However, institutional controls would not prevent deterioration of the buildings or eliminate the threat of COPC releases to the environment. As these buildings continue to age, the threat of radiological and chemical substance releases is increased, and it becomes more difficult to contain these materials and prevent a release to the environment. Radiological and chemical substances could be released directly to the environment via, for example, a breach in a containment wall, roof, or other physical control as the buildings age and deteriorate.

2.1.7 Federal, State, and Local ARARs, and To-Be-Considered Guidance

The applicable or relevant and appropriate requirements (ARARs) and to-be-considered (TBC) guidance identified for these activities evaluated under the removal alternatives are presented in Appendix B of this EE/CA. Each RAWP will identify the subset of Appendix B ARARs for the work scope covered by the RAWP. The majority of the ARARs apply to most buildings. ARARs for PCB capacitors are anticipated to only apply to X-744J and X-530B. More detail on which ARARs apply to which buildings will be provided in the RAWPs. If site conditions vary from that anticipated in the EE/CA, the comprehensive list of state environmental regulations will be assessed to determine if there are additional ARARs.

Applicable requirements are "those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site" (53 *Federal Register [FR]* 51435, December 21, 1988; 40 *CFR* 300.5). Relevant and appropriate requirements are "those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site" (53 *FR* 51436; 40 *CFR* 300.5).

In addition to ARARs, there are other advisories, criteria, or guidance to be considered for a particular release. Collectively, they are referred to as TBC guidance. This guidance may be useful in determining remedies or cleanup levels that are protective of human health and the environment in the absence of ARARs.

Requirements under federal or state law may be either applicable or relevant and appropriate to CERCLA cleanup actions, but not both. However, requirements not considered applicable must be both relevant and appropriate to necessitate compliance. In cases where both a federal and state ARAR are available, or where two potential ARARs address the same issue, the more stringent regulation must be selected.

The portions of response actions conducted entirely on-site pursuant to Work Plans or plans concurred with or approved by Ohio EPA under the DFF&O can also be, at Respondent's discretion, conducted pursuant to Section 121 of CERCLA, 42 United States Code 9621(e)(1). To ensure CERCLA response actions proceed as rapidly as possible, EPA has reaffirmed this position in the final NCP (55 *FR* 8756, March 8, 1990). Substantive requirements directly pertain to the actions or conditions at the site, while administrative requirements facilitate their implementation (e.g., applying for permits, recordkeeping, consultation, inspections, and reporting). It is the intent of DOE to meet the substantive requirements of appropriate federal and state regulations in accordance with the ARARs. DOE must identify the Federal and state permits that would otherwise be required, substantive requirements, standards, criteria, or limitations that would be required under the permit process; and explain how the proposed action will meet these standards. This is a requirement of the DFF&O for PORTS.

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3. REMOVAL ACTION SCOPE, OBJECTIVES, AND SCHEDULE

This chapter summarizes DOE response authority and statutory limits under CERCLA and the DFF&O for D&D actions, removal action justification, removal action scope and objectives, and the planning schedule for D&D of the buildings addressed in this EE/CA.

CERCLA Section 104 addresses the response to releases or threats of releases of hazardous substances through removal actions. Executive Order 12580, "Superfund Implementation," delegates to DOE the response authorities for releases or threatened releases from or on any building under DOE's jurisdiction, custody, or control. DOE is authorized to conduct response measures (e.g., removal actions) under CERCLA. A response under CERCLA is appropriate when (1) hazardous substances are released or there is a substantial threat of such release into the environment, or (2) there is a release or substantial threat of a release into the environment of any pollutant or contaminant that may present an imminent and substantial danger to the public health or welfare. DOE and EPA have issued a joint policy statement (DOE and EPA 1995) that maintains building D&D activities should be conducted as CERCLA non-time-critical removal actions unless circumstances at the building make it inappropriate. The DFF&O also provides that D&D for certain identified buildings at PORTS will be conducted in accordance with CERCLA and the DFF&O.

The National Environmental Policy Act of 1969 (NEPA) requires all federal agencies to consider the possible effects (both adverse and beneficial) of their proposed activities before taking action. DOE has issued a Secretarial Policy Statement on NEPA (DOE 1994) that states DOE will hereafter rely on the CERCLA process for review of actions to be taken under CERCLA, and will address and incorporate NEPA values in CERCLA documents to the extent practicable. Such values may include socioeconomic, cultural, ecological, aesthetic, and health effects, both short term and cumulative, as well as environmental justice issues, land use issues, and the impacts from off-site transportation of wastes. Guidance states that NEPA values will be incorporated to the extent practicable, with more attention given to those aspects of the proposed action having the greater anticipated effects. In keeping with this policy, NEPA values have been incorporated into this EE/CA.

3.1 REMOVAL ACTION JUSTIFICATION

The following expected primary COPCs have been identified for the plant support buildings and structures:

- Asbestos from transite siding, piping insulation, etc.
- PCBs from light ballasts, ventilation gaskets, oils, paints, etc.
- Lead from lead-based paint
- Mercury from light bulbs and switches
- Radionuclides from fixed contamination in the structures.

Based on a streamlined risk assessment, DOE has determined that, if allowed to deteriorate in an uncontrolled manner, the plant support buildings and structures addressed in this EE/CA present a threat to human health, safety, and the environment through the potential release and migration of COPCs to the air, surface water, and soil. Under NCP, 40 *CFR* 300.415(b)(2)(v), one of the considerations for whether to conduct the removal action is weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released. Weather causes the degradation of the structures, either immediately in the case of severe weather or slowly in the case of relentless changes in temperatures and wind. For example, the potential for airborne asbestos release and exposure would increase over time as the transite panels, piping insulation, etc. associated with the buildings deteriorate. Building deterioration

may also result in the release of lead, mercury, and radionuclides via surface water that could impact ecological receptors.

The deteriorating structures also present safety hazards and physical risks with respect to workers on the reservation.

3.2 REMOVAL ACTION SCOPE AND OBJECTIVES

This non-time-critical removal action will address the surface features and subsurface equipment and materials within the footprint(s) of the plant support buildings and structures, including the slab if the structure is built on a slab.

Per the DFF&O, D&D includes dismantlement, demolition, and removal of equipment, structures, piping, and building contents both above and below ground within the building footprint. When subsurface features such as basements, wet wells, etc. exist, any concrete slabs covering the subsurface features, as well as underground structures, will be assessed and addressed under future EE/CA(s) or the Process Building and Complex Facilities D&D Evaluation Project Remedial Investigation (RI)/Feasibility Study (FS) and Record of Decision (ROD) (hereafter referred to as the Process Building project). The only soils that would be removed and disposed pursuant to this non-time-critical removal action are those adhering to structures or those that otherwise must be excavated as an integral part of the removal action. Soils and piping outside the footprint of the plant support buildings and structures addressed in this EE/CA are not included in this removal action decision.

The following removal action objectives (RAOs) are required by the DFF&O and form the basis for identifying and evaluating the appropriate removal action alternatives:

- **Determine the viability of facility reuse**. Does building reuse have a reasonable chance of succeeding, taking into account factors such as:

  - Nature and extent of contamination
  - Physical condition of the building(s)/structure(s)
  - Costs associated with bringing the building(s)/structure(s) into compliance with applicable standards and codes
  - Past use/operations
  - Location
  - Existence of any identified future need or use?

  Per the DFF&O, if reuse is determined to be viable, a removal action alternative for the building/ structure reuse will be included in the EE/CA. If reuse is determined not to be viable, the EE/CA must specifically state that reuse is not viable, provide an explanation supporting that determination, and not include a removal action alternative for the building/structure reuse. The determination of reuse viability is addressed in Section 4.1.2.

- **Meet ARARs to the extent practicable**. In accordance with Section 300.415(j) of the NCP, on-site removal actions conducted under CERCLA are required to attain ARARs to the extent practicable considering the exigencies of the situation.

- **Be protective of relevant receptors**. The removal action alternative must be protective of human health, safety, and the environment and protect against the release or threat of release and migration of contaminants to the air, surface water, and soil.

- **Be cost effective.** The NCP requires the benefit of a removal action be worth the cost compared to other alternatives.

3.3 REMOVAL ACTION PLANNING SCHEDULE

If an alternative that requires D&D is selected, a single AM would be submitted and separate RAWPs would be prepared for groups of buildings/structures, depending on the schedule for removal. Per the requirements of Table 1A of the DFF&O, the first RAWP would be submitted for Ohio EPA review within 90 days of DOE receiving Ohio EPA concurrence on the AM, unless otherwise mutually agreed to in writing by the parties, and will include buildings/structures for which DOE is prepared to proceed. DOE herein requests an alternate schedule for submission of RAWPs as described in this paragraph. DOE proposes to submit RAWPs for remaining buildings/structures within 90 days of DOE notifying Ohio EPA in writing that DOE is prepared to proceed with removal of any designated buildings/structures; the aforementioned 90-day period for submitting any such RAWP will be a Milestone Additionally, DOE will identify the RAWPs projected to be submitted within the fiscal year (FY), the FY+1, and the FY+2 in the annual submittal required pursuant to Paragraph 20.b of the DFF&O. The various removal actions would be initiated for each building/structure or groups of buildings/structures by the dates established in the approved schedules in the applicable RAWPs. Sampling and analysis plans (SAPs) to provide information necessary to design or implement the removal action will be submitted prior to the RAWPs to support development of the RAWPs.

A general unenforceable planning schedule with anticipated fiscal years for submittal of the RAWPs is included in Table 3. A list of which buildings is in which RAWP is included on Table 1. By mutual agreement of the Site Coordinators, the buildings/structures in one RAWP group may be moved to another or new RAWP group. All RAWPs will contain: a) a proposed schedule that includes a completion schedule for each task and clearly identifies which completion schedules are Milestones as required by Paragraph 19c of the DFF&O and b) any Milestones as required by Paragraph 12 a.v. of the DFF&O.

Table 3. Planning Schedule

RAWP Group	Fiscal Year of Submittal
R1	2012
R2	2012
R3	2013
R4	2013
R5	2013
R6	2013
R7	2013
R8	2015
R9	2016
R10	2017
R11	2018
R12	2020

RAWP = removal action work plan

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4. DEVELOPMENT OF REMOVAL ACTION ALTERNATIVES

This section identifies the removal technologies and options and the removal action alternatives to be evaluated in this EE/CA.

4.1 REMOVAL ACTION ALTERNATIVES

4.1.1 Identification of Removal Technologies and Process Options

This section identifies the technologies and disposal options based on site-specific conditions, contaminants, affected media, and anticipated activities. Technologies for building dismantlement and size reduction were identified based on their ability to meet RAOs, provide safety to workers, ensure feasibility of the technology under site-specific conditions, and provide radiological control of the D&D activity. This section also discusses disposal options for the waste streams that would be generated from the D&D activities until the Sitewide Waste Disposition Evaluation Project ROD is signed.

4.1.1.1 Structure dismantlement and size reduction

Multiple dismantlement and size-reduction technologies exist and could be used in performing removal actions for the plant support buildings and structures. The dismantlement and size-reduction technologies considered for this removal action are identified in Table 4. A description of the technologies and a discussion of their applicability and limitations are also provided in Table 4. Dismantlement and size-reduction technologies include conventional disassembly using mechanical hand tools, various electric and pneumatic hand tools (e.g., circular saw, porta-band saw, air impact wrench, etc.) and heavy machinery, including excavators with various processing heads (e.g., grappler, shear, cracker-jaw, concrete breaker, etc.). Selection of a technique would be based on the properties of the material being removed. The technologies considered for sealing floor drains and open piping include check valves, expandable plugs, and pipe end caps. Compaction has been used as a representative process option because this technique can be easily applied to a variety of materials and results in substantial volume reduction of the structural debris.

The RAWPs for each building group would provide the details for determining which technology to use on the various types of materials within each specific building.

4.1.1.2 Decontamination, stabilization, and removal technologies

Multiple decontamination, stabilization, and removal technologies exist to address the equipment, materials of building construction, and waste streams. The technologies available for decontamination, stabilization, and removal are identified in Table 5. A description of the technologies and a discussion of their applicability and limitations are also provided in Table 5. These technologies could be implemented to decontaminate equipment, structure surfaces, or generated waste either to meet disposal requirements or to allow the reuse of the equipment, material, or the building, itself.

4.1.1.3 Waste containerization options

For transportation and disposal, it would be necessary to containerize the waste generated during D&D activities. Many types of appropriate containers are available for the different waste streams anticipated to be generated, depending on which technologies identified in Sections 4.1.1.1 and 4.1.1.2 are applied. The types of containers most appropriate for this removal action would include, but not be limited to, gondolas, sealand containers, intermodal containers, roll-off boxes, strong-tight boxes (B-25), steel drums, and polyethylene drums. Because of the potential variety of wastes anticipated to be generated from D&D activities, it is possible that multiple container options would be used during implementation of the removal action.

Table 4. Description and Evaluation of PORTS Structure Dismantlement, Size-Reduction Technologies, Pipe/Utility Separation/Disconnection, and Lead-Based Paint/Asbestos Removal

Technology	Description	Applicability	Limitations	Comments
Conventional disassembly	Hand-held tools and saws used for hand removal of nuts and bolts, disconnection of piping (including floor drains), and modifications of utility conduits to form an air gap	May be applied to any area, including utility piping and floor drains	• Labor-intensive and slow • recommended for limited application	• No additional worker training required • Rotary saws, grinders, and other high-speed mechanical tools would produce airborne particulates and fines that may need to be collected • If applicable, verify utilities have been tagged per lockout/tagout procedure before being disconnected
Heavy machinery	Excavators with various processing heads such as grappler, shear, cracker jaw, concrete breaker, etc.	• Cut 0.6-cm (1/4-in.-thick) steel (large-diameter pipe), structural steel, tanks • Shear wooden support structures or siding • Reduce concrete to rubble	• Depending on processing head used, pipe ends that require further processing before decontamination, treatment, or disposal may be pinched • Eliminates airborne contamination associated with thermal cutting processes	If applicable, verify utilities have been tagged per lockout/tagout procedure before being disconnected
Electric and pneumatic tools	Circular saws, porta-band saws, air impact wrenches, etc.	Cut metal pipes and wooden structural members	• Clearance requirements have to be evaluated to determine most appropriate tool • Thickness of target would determine effectiveness	Safety concerns include the following: • Lacerations from blades, jagged metal, or splintering wood/siding • Flying particles from metal, wood, or transite shavings • Ergonomics/body postures for use of cutters • Noise exposures • Metal fumes and dust from metal cutting • If applicable, verify utilities have been tagged per lockout/tagout procedure before being disconnected

Table 4. Description and Evaluation of Structure Dismantlement, Size-Reduction Technologies, Pipe/Utility Separation/Disconnection, and Lead-Based Paint/Asbestos Removal (Continued)

Technology	Description	Applicability	Limitations	Comments
Compaction (crushing) and super compaction	Compresses wastes using hydraulic mechanical technology to achieve volume reduction	Scrap metal, concrete, glass, rubble, plastic material, rubber, paper, and cloth	• Limited to compressible wastes • Super compactors operating at 29,000 to 150,000 kPa (4,000 to 22,000 pounds psi) required to compact most items	• Greatly reduces volume of items with high void space such as tanks, etc. • Volume reduction factors of 4 to 5 can be achieved for scrap metal, resulting in densities as high as 150 lb/ft^3
Sealing of piping and/or floor drains using check valves, expandable plugs, and pipe end caps	After disconnection of pipe by mechanical means, pipe end would be sealed	May be applied to any disconnection (e.g., floor drain, pipe conduit [air gaps])	• Labor-intensive and slow • If pipe ends are pinched, would require additional processing to establish a seal	Verify utilities have been tagged per lockout/tagout procedure before being disconnected
Shredding	Shreds waste to provide waste volume reduction	Waste materials with large void spaces and thin metals	• Waste size restrictions for most shredders (> 3.175-cm [> 1.25-in.] rebar, 3.75-cm [1.25-in.] steel cable, and 10 cm [4.0 in.] Schedule 40 pipe) • Primarily for metal wastes	Not recommended because of limitations on size of material that can be shredded

Table 5. Description and Evaluation of PORTS Decontamination, Stabilization, and Removal Technologies

Technology	Description	Applicability	Limitations	Comments
Encapsulation	Fixes wastes by encasement in low-solubility solid matrix	Used for wastes that are unstable	Increases volume and mass of waste	Reduces potential for leaching to groundwater
Application of fixative stabilizer coatings	Application of paints, films, and resins used as coatings to fix and stabilize contaminants in place	Stabilizes radioactive contamination	• No removal of contaminant is achieved • Experiments to ensure effectiveness of stabilizer generally are needed because of site-specific requirements	Also useful for containment of contaminants on transite siding or other building materials
Scabbling	Uses physical means (steel shot, steel rods, carbide cutters, etc.) to loosen and remove surface contamination	Effective on flat, shatterproof surfaces (concrete)	• Effective for near-surface contamination • Creates additional waste	• Highly effective for removal of surface layer of concrete • Technology is readily available • Dust can be suppressed
Sponge blasting	Uses a sponge grit suspended in an air spray to loosen and remove surface contamination	Effective on flat, shatterproof surfaces (concrete, aluminum, steel, and painted or coated surfaces) and on hard to reach areas such as ceilings	• Effective for near-surface contamination • Creates additional waste	Sponge grit can be recycled
Abrasive blasting	Uses an abrasive medium (sand, glass beads, grit, or carbon dioxide pellets) suspended in an air spray to loosen and remove surface contamination	Effective on flat, shatterproof surfaces (concrete, aluminum, steel, and painted or coated surfaces) and on hard to reach areas such as ceilings	• Effective for surface contaminants up to 0.64-cm (0.25-in.) deep, depending on abrasive technique • Creates additional waste • Slow, labor-intensive technique that causes high potential for worker exposure	• Can produce substantial amount of contaminated dust • Appropriate for items that can be effectively decontaminated for reuse or “clean” disposal • Carbon dioxide minimizes additional waste streams
Destruction and removal	• Jackhammers that are hand-held or mounted to a backhoe may be used to break up concrete • Standard construction equipment may be used for removal	Applicable for reducing the size of large pieces of concrete	• No removal of contaminant is achieved • Slow, labor-intensive technique that increases potential for worker exposure • Metal cutting methods may be required if rebar is present	• Technology and equipment are readily available • Highly effective for removal • Can produce substantial amount of contaminated dust, but dust can be suppressed

4.1.1.4 Waste volumes

The anticipated waste volumes associated with removal of the plant support buildings and structures addressed in this EE/CA are summarized in Table 6. Approximately 95 percent of the wastes generated are expected to be sanitary/industrial solid waste. The original waste volume estimates were calculated for each building or structure. All waste volumes associated with these buildings are included in this EE/CA, even though the subsurface structure portion of the volume will be considered in future EE/CAs or the process building RI/FS decision. Some nominal portion of the volume is associated with subsurface structures, but the amount is within the +50/-30 percent accuracy required under CERCLA. Any potential volume change as a result of implementing recycling opportunities also would fall within the +50/-30 percent accuracy required. Historical recyclable volumes generated during demolition of the X-533 and X-633 buildings were nominally 10-20 percent.

Table 6. PORTS Anticipated Removal Action Wastes

Waste Type	Estimated Volume (cf)	Estimated Weight (tons)
Sanitary/industrial	3,168,046	136,597
LLW	101,671	7,813
MLLW	11,402	856
RCRA	634	39
TSCA	69,891	3,470

Source: Appendix A to this EE/CA.

EE/CA = engineering evaluation/cost analysis
LLW = low-level (radioactive) waste
MLLW = mixed low-level (radioactive) waste
RCRA = Resource Conservation and Recovery Act of 1976
TSCA = Toxic Substances Control Act of 1976

4.1.1.5 Waste disposition

Sufficient off-site waste disposal capacity is available for all waste streams anticipated to be generated if a removal action requiring D&D is selected. Although a variety of waste streams would be generated if a D&D removal action alternative is selected, the primary waste streams are expected to be sanitary/ industrial solid waste. RCRA hazardous wastes (or any waste mixed with hazardous waste) would be containerized for disposal in accordance with regulatory requirements. Storage areas meeting the substantive requirements for RCRA 90-day storage would be established to temporarily store hazardous wastes, if needed, pending transportation and disposal. Existing data are sufficient to allow determination of anticipated waste streams, identification of contaminants of concern, evaluation of potential risks, and development of approaches that would ensure worker safety. It is recognized that current data may not be sufficient to meet off-site disposal facilities' waste acceptance criteria (WAC). In such cases, any necessary additional sampling and analysis would be performed during performance of any selected removal action. It is anticipated that the waste material would require disposal as sanitary/industrial waste, RCRA hazardous waste, low-level (radioactive) waste (LLW), and/or mixed LLW.

Hazardous waste determinations to date are based on available process knowledge. Additional samples that contain representative portions of all wastes would be collected prior to removal and disposition. If the sample does not exhibit a hazardous characteristic and listed wastes were not managed in the building, the debris would be categorized as nonhazardous. Accordingly, sorting and segregation would be instituted as a best management practice to minimize the generation of hazardous waste. If the sampling results indicate the debris may be hazardous, follow up sampling may be conducted as necessary to further refine/define actual volumes requiring management as hazardous waste.

During performance of this non-time-critical removal action, wastes such as nonradioactive RCRA solid waste and/or liquid waste (e.g., decontamination wastes, liquids, etc.) and secondary waste streams also

could be generated and would require disposal as part of the removal action. It is anticipated that no on-site treatment of this waste would be necessary. However, if on-site treatment becomes necessary, DOE would consult with the Ohio EPA. Although not anticipated, hazardous waste would be treated, if necessary, to meet RCRA land disposal restrictions (LDRs) prior to disposal.

If wet decontamination techniques are employed, an ARARs-compliant decontamination area would be established. The collected decontamination water would be sampled and disposed of via an on-site treatment facility or a National Pollutant Discharge Elimination System (NPDES) outfall. If generated wastewaters do not meet the requirements for on-site treatment facilities or an NPDES outfall, those wastes would be sent off site for disposition.

If necessary to support the removal action, water that has accumulated in any basins, valve vaults, or wet wells would be sampled prior to removal and discharged through an on-site treatment system or NPDES outfall. This would be done in consultation with the Ohio EPA. If generated wastewaters do not meet the requirements for on-site treatment facilities or an NPDES outfall, those wastes would be sent off site for disposition.

Results of the characterization efforts, including additional disposal data obtained as necessary, would be used to separate debris (using reasonable efforts) into waste streams that conform to the proposed disposal facility WAC. A discussion of the primary waste disposal facilities being considered for waste from the D&D activities and a summary of their respective WAC are presented in the following sections. In addition, if wastes were generated that could not meet the WAC for the disposal facilities discussed in this EE/CA, other commercial disposal facilities would be used for these wastes.

Selection of the off-site facilities used for disposal would depend on the nature of the wastes generated. Sampling data would be collected from the plant support buildings and structures to determine the appropriate off-site disposal option. It is expected that the majority of generated waste would be disposed at an off-site facility that accepts sanitary/industrial solid waste. Off-site disposal facilities and facility-specific WAC, if applicable, would be evaluated to determine the appropriate off-site disposal path for the anticipated and potential waste streams listed in Table 7.

The option of developing an onsite disposal cell for waste generated under the DFF&O is under consideration through a separate set of decision documents. An engineered disposal facility capable of receiving nearly 5M cy of debris and soil is being evaluated and compared to offsite disposal locations. As part of this evaluation, potential WAC and siting locations are being evaluated. If selected, this disposal cell would have sufficient capacity to accept the volume of waste anticipated to be generated under this removal action decision. However, some of the waste generated under this EE/CA would most likely not meet the WAC and would have to be disposed off-site. A decision on this onsite cell will not be in place before the first waste is generated under this removal action decision.

Table 7. PORTS Anticipated and Potential Waste Streams

Waste Stream	Description
LLW	LLW is defined as radioactively contaminated, nonconsolidated solid material and is managed separately from non-LLW because of differing characterization requirements. Waste streams within this category can include scrap metal, concrete, asbestos, decontamination materials, including decontamination wastewaters generated on site, and secondary waste streams such as PPE generated during performance of a non-time-critical removal action.
Asbestos	This waste category consists of asbestos that can be demonstrated to meet the appropriate radiological release criteria and secondary waste streams, such as PPE generated during the performance of a non-time-critical removal action.
Mixed wastes (RCRA)	This waste category includes waste streams that have both a RCRA hazardous component and a radioactive component based on their origin within a radioactive materials management area or surface or volumetric contamination exceeding release limits.
Hazardous wastes	This waste category encompasses RCRA hazardous waste streams (that are not mixed wastes and do not exceed radiological release criteria) generated during the performance of a non-time-critical removal action.
TSCA	This waste includes PCB-contaminated waste streams that are not radiologically contaminated.
Nonradioactive, nonhazardous solid waste	This waste category includes wastes that are nonradioactive and nonhazardous, including miscellaneous trash (paper, cloth, wood, plastic, asbestos, etc.) generated outside the radiological work area boundary during performance of the non-time-critical removal action.

LLW = low-level (radioactive) waste
PCB = polychlorinated biphenyl
PPE = personal protective equipment
RCRA = Resource Conservation and Recovery Act of 1976
TSCA = Toxic Substances Control Act of 1976

4.1.1.6 Summary of disposal options

Waste streams that DOE anticipates would be generated during a D&D removal action are identified in Table 7. The primary waste stream is anticipated to be nonradioactive, nonhazardous solid waste from structure and foundation debris. Any hazardous waste would be treated, if necessary, to meet RCRA LDRs prior to disposal at a permitted commercial facility. If hazardous wastes with a radioactive component were encountered, they would also be treated, if necessary, to meet RCRA LDRs before being disposed at Energy*Solutions* in Utah. Radioactive wastes would also be disposed at a permitted federal facility and/or at Energy*Solutions* in Clive, Utah. Nonradioactive asbestos would be disposed at a permitted, commercial Subtitle D facility. No radioactive asbestos-containing wastes are anticipated; however, if found, such wastes would be disposed at a permitted federal facility or Energy*Solutions*. It is anticipated that all types of solid wastes that meets the WAC could be disposed at an onsite disposal cell if selected in the Site-Wide Waste Disposition Evaluation ROD. Any liquid decontamination waste or water removed from a subsurface structure would be sent to an on-site treatment system and/or discharged through an NPDES outfall. If water that has accumulated in basins, valve vaults, and wet wells is removed to support the removal action, it would be sampled, treated as necessary, and discharged through an NPDES outfall. If wastewaters that do not meet the requirements for on-site treatment facilities or an NPDES outfall are generated, those wastes would be sent off site for disposition. A summary of the waste disposal options for the various anticipated waste streams is presented in Table 8.

Table 8. Summary of Disposal Options for PORTS D&D Waste

Facility	Nonradioactive, Nonhazardous Solid Waste and Nonradioactive Asbestos	LLW (including Radioactive Asbestos)	Mixed Waste	Hazardous (RCRA) Waste	TSCA Waste	Radioactive Asbestos	Collected Water	Liquid Decon Waste	Clean Hard Fill
Energy*Solutions*		●	●			●			
Permitted federal facility		●	●			●			
Other permitted facilities (off site)	●			●	●		●	●	
PORTS on-site treatment facility(s) or existing NPDES outfalls							●	●	
On-site disposal cell (depending upon final Sitewide Waste Disposition Evaluation project ROD and WAC)	●	●	●	●	●	●			●
On-site fill									●

D&D = decontamination and decommissioning
LLW = low-level (radioactive) waste
NPDES = National Pollutant Discharge Elimination System
PORTS = Portsmouth Gaseous Diffusion Plant
RCRA = Resource Conservation and Recovery Act of 1976
ROD = record of decision
TSCA = Toxic Substances Control Act of 1976
WAC = waste acceptance criteria

4.1.2 Development of Removal Action Alternatives

DOE has identified no action and two alternatives for the Plant Support Buildings and Structures EE/CA. A renovation and reuse alternative was not carried forward for development in this EE/CA. The primary reasons a renovation/reuse alternative is not further considered includes the nature of the buildings and structures, their current state of deterioration, and the lack of any identified future need or use beyond current mission use. Many of the buildings were built for a specialized use, (e.g., monitoring stations, storage tanks, pump stations, feed vaporization and sampling building) and are not conducive to being remodeled for alternate uses. Some, such as the UF_6 Sampling Facility, were already remodeled for alternate uses and, as such, are more difficult to remodel in the future. Most of the buildings were built in the 1950s with later construction occurring in the 1970s. This means most of the structures are between 40 and 60 years old, with few, if any, upgrades over the years. Most buildings or structures have managed nuclear materials and are suspected of containing radiological contamination.

DOE has identified three alternatives to address the RAOs that were specified in Section 3:

- Alternative 1 - No Action
- Alternative 2 - Remove Structures, Off-site Disposition of Equipment and Materials
- Alternative 2a - Remove Structures, On- and Off-site Disposition of Equipment and Materials.

These removal alternatives are summarized in Sections 4.1.2.1 through 4.1.2.3.

4.1.2.1 Alternative 1 - no action

The No Action alternative is included to serve as a baseline for comparison to the other alternative. In the No Action alternative, no surveillance and maintenance (S&M) activities would occur, and the buildings and structures would continue to deteriorate. Final disposition of contaminants generated by the structures' gradual degradation and ultimate failure would occur with debris left where it falls.

4.1.2.2 Alternative 2 – Remove structures, off-site disposition of equipment and materials

The following text describes this removal action alternative. When DOE confirms there is no future use of a building or structure, when the building is no longer leased, and when funding and resources become available to implement any selected alternative, the removal action would be implemented. In identifying potential removal alternatives for the plant support buildings and structures, DOE considered potential reuse of the buildings. DOE has evaluated potential reuse of the proposed buildings consistent with existing policies on disposition of buildings, DOE Order 458.1 and applicable segments of DOE Order 5400. Due to the presence of contamination, the aging condition of the buildings and anticipated cost of maintenance, no future use has been identified at this time for these buildings. Therefore, DOE is not developing a separate reuse alternative for the EE/CA. The developed alternative provides for the ability to either delay implementation of the remedy or remove the building from the remedy if a future use for an individual building is identified. As discussed in Section 4.1.2 of this EE/CA, DOE has determined that reuse will not be carried forward for the removal action alternatives analysis.

Buildings that are shown to be free of contamination according to DOE Order 458.1 and applicable segments of DOE Order 5400.5, either under current conditions or after decontamination for the purpose of reusing the building, can be removed from this alternative and the corresponding decision through a decision modification pursuant to agreement between DOE and Ohio EPA and in accordance with CERCLA and the DFF&O. Ohio EPA-approved SAPs will be developed to guide the confirmation sampling used to demonstrate the lack of contamination of the building. The results of the sampling will be presented with the documented change to the remedy.

Demolition activities would be performed in compliance with the ARARs presented in Appendix B. The D&D activities include removal of scrap metal, equipment, infrastructure, and any waste materials and debris. The Clean Air Act of 1970, as amended, for control of asbestos and/or radionuclide emissions would be met. Engineering controls (e.g., spraying or misting water) would be used to minimize the release of fugitive dust or other contaminants during D&D activities.

Building removal activities may result in the generation of hazardous waste, asbestos, and other types of waste. All wastes, including but not limited to debris, contaminated personal protective equipment, and decontamination wastes, generated will be appropriately characterized and managed in accordance with appropriate state of Ohio laws and regulations for hazardous and solid waste, the federal Toxic Substances Control Act of 1976 (TSCA), and other requirements as specified in Appendix B. Mixed and hazardous waste stored in the RCRA-permitted storage areas will comply with the terms and conditions of the permit. Subsequent SAP(s) will be submitted to present the planned collection of data necessary to support the design or implementation of this alternative, especially with respect to characterizing potential waste streams.

Decontamination waters will be discharged to existing treatment plants and will comply with the requirements of the applicable NPDES permits for any permitted outfall through which this wastewater is discharged.

Any waste transferred offsite along public right-of-ways will meet packaging, labeling, marking, manifesting, and placarding requirements, depending on the waste. In addition, EPA in 40 *CFR* 300.440

requires that offsite disposal of any hazardous substance, pollutant, or contaminant generated during CERCLA response actions be sent to a treatment, storage, or disposal facility that complies with applicable federal and state laws and has been approved by EPA for acceptance of CERCLA waste.

The following activities would be the key components of Alternative 2 and would be further defined in the appropriate RAWPs or other appropriate project documentation:

- **Mobilization/Site Preparation/Upkeep of Facility Configuration and Controls**
  To the extent such activities meet the definition of D&D in the DFF&O, the following types of activities would be conducted:

  - Office activities, support trailers and utilities may need to be reconfigured or installed to support the D&D activities.

  - Parking areas, fences, lighting, and stormwater controls may also need reconfiguration or installation.

  - Equipment would be brought onto the site, vegetation may be removed, and until the D&D occurs, the building or structure would be maintained in a safe configuration.

  - This effort includes maintenance and housekeeping of the facilities and support systems in advance of D&D activities.

- **Support Activities for D&D**
  To the extent such activities meet the definition of D&D in the DFF&O, the following types of activities would be conducted:

  - There may be a need to upgrade or install transportation support facilities such as: haul roads, rail spurs, or decontamination facilities.

  - Depending on the recent mission of the building, there may be a need to relocate materials, offices, storage areas, treatment facilities, computer or communication systems, and construction of replacement services such as treatment facilities, or shop.

  - Environmental or radiological monitoring systems may need to be upgraded in support of D&D.

- **Utility Redistribution**
  To the extent such activities meet the definition of D&D in the DFF&O, the following types of activities would be conducted:

  - It may be necessary to relocate or redistribute site utilities before a building or structure is demolished.

  - New firewater, process water, storm water, sewers, air, or steam systems may need to be installed to support D&D.

  - Power distribution systems may need to be moved or reconfigured.

  - Switchyards may need to be replaced and temporary boilers installed to support the isolation and demolition of switchyards and the steam plant.

- **Removal of salvageable/reusable equipment**
  Equipment identified as salvageable/reusable is expected to include, but not be limited to, transformers, empty tanks, switchgear, wet well pumps, motors, and overhead trolley cranes. Equipment removal would be initiated prior to demolition and would continue as demolition of the structures progressed. Cranes and/or heavy equipment would be used to remove the equipment. Equipment identified as salvageable/reusable would be loaded onto the recycler or end-user vehicle for transport.

- **Removal of nonsalvageable/nonreusable equipment**
  Larger pieces of equipment and excess materials may be removed from the buildings and structures prior to demolition. Remaining waste would be removed from the buildings and structures prior to demolition. Any elements of the structures that require discrete packaging or disposal apart from the structure itself, such as remaining RCRA hazardous waste or asbestos, would also be removed. Liquids would be drained and collected. To the extent practical, equipment and materials would be removed from any subsurface structure, leaving only a structural shell below ground.

- **Decontamination**
  Pieces of equipment or portions of the structure could be cleaned of contamination to meet any disposal requirements, transportation requirements, or future use as part of this alternative. Decontamination to free-release criteria could be completed prior to recycling or reusing a component of the equipment or structure or prior to reusing the building itself. Decontamination could be accomplished by washing, blasting, or scabbling contaminated surfaces. Residue would be collected and disposed of appropriately as a secondary waste stream.

- **Asbestos removal**
  Some buildings contain asbestos that may remain in the buildings at the time of demolition. Engineering controls, including wetting methods, negative pressure air units, or containment structures, would be used to control air emissions during demolition according to ARARs. Air monitoring would be conducted to assure adequacy of engineering controls and PPE.

- **Demolition of surface structures**
  The above-grade portion of the plant support buildings and structures would be removed using excavators with concrete-breaker, bucket, shear, and grapple attachments. Consistent with Attachment G of the DFF&O, these structures would be removed to the slab. Likewise, where slabs are not covering subsurface features, the slabs would also be demolished.

- **Concrete characterization**
  Characterization of concrete would be conducted as part of this non-time-critical removal action. If cost effective, decontamination would occur if characterization data indicated the concrete walls would not qualify as clean hard fill (as defined in Ohio Administrative Code [OAC] 3745-400-01(E)). If it is not cost effective to decontaminate the concrete or the decontaminated concrete does not meet the requirements as clean hard fill, it would be disposed in accordance with ARARs. If characterization data indicates the concrete meets the requirements as clean hard fill per the ARARs, the concrete would be removed and could be rubblized for use as clean hard fill elsewhere on the PORTS site or otherwise disposed in accordance with ARARs.

- **Recycling/reuse**
  DOE may identify demolished materials or equipment meeting reuse criteria and requirements (e.g., ARARs, DOE order requirements, etc.) that may be recycled or reused. The materials or

equipment to be recycled or reused, and the conditions for recycle and reuse will be described in the RAWP. Such material would be prepared to meet the transportation requirements and conditions set forth by the recycler. Material or equipment otherwise eligible for recycling/reuse that is not recycled/reused will be dispositioned along with other material generated during the removal action.

- **Site restoration and demobilization**
  Upon completion of demolition, the equipment and materials used in the non-time-critical removal action would be demobilized from the site, and the site would be put in a safe configuration. Pathways for contaminant migration would be controlled (e.g., sealing of slabs, capping of pipelines, or removing remaining contamination open to the environment). Temporary access roads and laydown areas would be removed in accordance with the applicable RAWP. Disturbed areas would be regraded and seeded when activities in the area are complete.

- **Waste disposition**
  Waste generated by the removal action would be segregated, size-reduced if necessary, containerized, and shipped to an appropriately licensed off-site disposal facility. No decontamination or treatment would be required unless decontamination or treatment is necessary to meet LDRs or receiving facility WAC.

  Waters generated by the project (e.g., decontamination waters) would be sent to an existing on-site treatment facility or an existing NPDES outfall. Waters could be pretreated. If wastewaters do not meet the requirements for on-site treatment facilities or an NPDES outfall, those waters would be sent off site for disposal in accordance with ARARs.

4.1.2.3 Alternative 2a – Remove structures, on- and off-site disposition of equipment and materials

This alternative contains the same elements as Alternative 2. In addition, this alternative allows for on-site disposal in the event that an on-site disposal cell becomes operational and available for any project waste stream pursuant to the Ohio EPA-approved WAC issued under the Sitewide Waste Disposition Evaluation project ROD, prior to the Milestone (as identified pursuant to Paragraph 12.a.v. of the DFF&O) in the Ohio EPA concurred with RAWPs. This alternative includes both onsite and offsite disposal of solid waste. In the event that an onsite waste disposition component is implemented in accordance with the DFF&O, Paragraph 12.a.v of the DFF&O does not apply to any RAWPs issued thereafter, however, Paragraph 19 of the DFF&O does apply to any RAWPs issued thereafter.

5. ANALYSIS OF REMOVAL ACTION ALTERNATIVES

The alternatives developed in Section 4.1.2 have been evaluated against the short- and long-term aspects of three broad criteria: effectiveness, implementability, and cost. These main criteria are summarized in Table 9. The evaluations were used to draw sufficient distinctions between the alternatives to allow the identification of a recommended alternative.

Table 9. Criteria Used to Evaluate the PORTS Removal Action Alternatives

Effectiveness
• Protectiveness o Protective of public health and community (short and long term) o Protective of workers during implementation (short term) o Protective of the environment (short and long term) o Complies with ARARs
• Ability to achieve RAOs o Level of treatment/containment expected o No residual effect concerns o Will maintain control until long-term solution is implemented
Implementability
• Technical feasibility o Construction and operational considerations o Demonstrated performance/useful life o Adaptable to environmental conditions o Contributes to remedial performance
• Availability o Equipment o Personnel and services o Outside laboratory testing capacity o Off-site treatment and disposal capacity o Post-removal site control
• Administrative Feasibility o Permits required o Easements or rights-of-way required o Impact on adjoining property o Ability to impose institutional controls o Likelihood of obtaining exemption from statutory limits (if needed)
Cost
• Capital cost • Post-removal site control cost

ARAR = applicable or relevant and appropriate requirement
RAO = removal action objective

In accordance with DOE's *Secretarial Policy Statement on the National Environmental Policy Act of 1976 (NEPA)* (DOE 1994), NEPA values have been incorporated into the alternatives analysis.

5.1 ALTERNATIVE 1 – NO ACTION

The No Action alternative is included to serve as a baseline for comparison to the other alternatives. In the No Action alternative, no S&M activities would continue, including no major repairs or upgrades.

The plant support buildings and structures would continue to deteriorate and D&D would not be performed.

5.1.1 Effectiveness

Alternative 1 does not meet the RAOs.

Protectiveness and ability to achieve RAOs. Because this alternative consists of no action, the short-term risks to the public, workers, and environment would increase with the reduction in institutional controls. There could be immediate access to the buildings.

In the long term, further reduction in protection of human health and the environment would result from deterioration of the structures, with further potential risks to on-site worker health and safety resulting from eventual failure of the structures. The inevitable deterioration of the structures eventually could result in the release of contamination to the environment. Upon structural failure, release of contaminants to the atmosphere and surface water pathways could potentially occur (e.g., asbestos and lead-based paint could become airborne because of structural failure). This could also present a hazard to on-site workers from physical dangers associated with roof and building structure failure.

With regard to NEPA values, contaminant releases from the buildings could contaminate underlying media, limiting future uses of the site. Residual piles of debris would also hamper reindustrialization efforts at the site, diminish the potential for future jobs, and have a socioeconomic impact. Gradual deterioration of the structures would present limited impacts to air, soil, and other affected aspects of the environment, unless a catastrophic release of the contaminants occurred. Wetlands and floodplains would be impacted if asbestos, lead-based paint, or other potential contaminants migrated after being released through aging and degradation of the structures. No federal or state-listed threatened or endangered plant or animal species have been identified at the locations addressed in this EE/CA. Habitat for the federally endangered Indiana bat (*Myotis sodalis*) potentially exists in the vicinity, but these buildings and structures do not provide suitable habitat. Indiana bats require exfoliating trees, which are not present at these buildings.

Executive Order 12898, "*Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations,*" requires agencies to identify and address disproportionately high and adverse human health or environmental effects that the agencies' activities would have on minority and low-income populations. No census tracts near PORTS include a higher proportion of minorities than the national average. Some nearby tracts meet the definition of low-income populations, but there would be no disproportionately high and adverse environmental impacts to any minority or low-income populations because there is limited opportunity for off-site migration of contamination.

5.1.2 Implementability

Technical and administrative feasibility. The No Action alternative is technically readily implementable.

Availability of services and materials. No services or materials are required.

5.1.3 Cost

There are no costs associated with Alternative 1.

5.2 ALTERNATIVE 2 – REMOVE STRUCTURES, OFF-SITE DISPOSITION OF EQUIPMENT AND MATERIALS

Under this alternative, surface structures associated with the plant support buildings and structures, including slabs-on-grade, would be removed, as well as all material and equipment in surface and subsurface structures. Only subsurface walls and floors (and any slab covering a subsurface structure) would remain for a future decision. The removal action is described in detail in Section. 4.1.2.2.

5.2.1 Effectiveness

Alternative 2 would meet the RAOs.

Protectiveness and ability to achieve RAOs. Based on the streamlined risk assessment, D&D of the plant support buildings and structures would prevent, minimize, or eliminate potential and actual risks to workers and ecological receptors posed by the uncontrolled release or threat of release of the contaminants of potential concern. The D&D of these structures, equipment, and materials would prevent or minimize any migration of hazardous constituents to the environment.

The ARARs for this alternative are presented in Appendix B. All entirely on-site response actions under this non-time-critical removal action are anticipated to comply with the ARARs. The transportation of waste to any off-site disposal facility (and any treatment that may be required to satisfy LDRs or WAC) would be performed in accordance with the ARARs. Shipments would be accomplished via truck or rail. All off-site disposal activities would be conducted in accordance with disposal site permit requirements.

This alternative would permanently remove contaminants in the building structures from an uncontrolled environment. Waste would be disposed at an authorized, licensed, and/or permitted disposal facility (on site or off site) that would provide long-term containment for any hazardous and/or radioactive constituents. The disposal facility would prevent any residual effects on the environment, worker health and safety, and public health and safety.

With regard to NEPA values, future land use would not be inhibited if the structures were removed. There could be positive socioeconomic impacts if new industries were introduced to the area. No contaminants currently found in the structures would remain, so there would be no impact to the air, soil, and/or surrounding environments. Wetlands and floodplains would not be affected by the removal action because engineering controls would be implemented during the removal activities. No federal or state-listed threatened or endangered plant or animal species have been identified at the plant support buildings and structures addressed in this EE/CA. This alternative would not have any direct or indirect impacts on local socioeconomic resources as the scope of work is sufficiently small to be handled with existing work forces.

The Phase I archaeological survey (Schweikart et al. 1997) determined there are no archaeological resources within Perimeter Road; therefore, implementation of this alternative would not affect any archaeological resources. DOE will perform certain mitigation measures to address the adverse effects to properties that are considered eligible for inclusion in the National Register of Historic Places (see Appendix B for further discussion).

Executive Order 12898, *"Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations,"* requires agencies to identify and address disproportionately high and adverse human health or environmental impacts that agencies' activities would have on minority and low-income populations. No census tracts near PORTS include a higher proportion of minorities than the national average. Some nearby tracts meet the definition of low-income populations, but there would be no disproportionately high and adverse environmental impacts to any minority or low-income populations

because there is limited opportunity for off-site migration of contamination. Dust suppression and stormwater control would prevent releases from implementation of this alternative. Additionally, this action would benefit populations in the vicinity of the site because the presence and mobility of hazardous constituents would be reduced after the action is completed.

If Alternative 2 is implemented, building deterioration that could otherwise result in a significant increase in contaminant release would not occur. Risks to on-site workers and the public could increase slightly during implementation, however, these risks would be managed by adhering to health and safety requirements and PORTS procedures. Chemical, radiological, and physical risks to workers would be controlled by engineering controls and/or PPE.

Alternative 2 would include the shipment of wastes to off-site disposal facilities. These shipments would increase cargo and vehicle-related transportation risks to workers (e.g., crew) and members of the public. If characterization of the concrete and surrounding soils indicates the concrete can be left in place (see Section 4.1.1.2) or if equipment or materials are reused or recycled, the number of shipments would be reduced, lessening the associated transportation risks.

Existing Permit Requirements. There are several existing permits at Portsmouth, including but not limited to, an NPDES permit for the discharge of wastewater and a RCRA Part B permit for the storage of hazardous waste. Project activities subject to any of the existing permit(s) must continue to comply with such permits.

New Permit Requirements. The following permit application or administrative notification activities would normally be triggered if this removal action were not being conducted entirely as an on-site action. The substantive requirements of these notification and permit activities are listed as ARARs in Appendix B.

- A notice of intent for coverage under Ohio's NPDES general permit ("Authorization for Storm Water Discharges Associated with Construction Activity under NPDES," NPDES OHC00003) for stormwater discharges associated with construction/demolition activities would normally need to be filed if the activities were not being performed as part of an entirely on-site response action under Paragraph 9.a of the DFF&O. The stormwater runoff controls in the general permit are substantive requirements for this response action, as listed in Table B.2 of Appendix B, and would be met through the implementation of best management practices to control pollutants in runoff as detailed in the RAWP. Such practices will include soil stabilization (e.g., seeding), perimeter structural practices (e.g., gabions, silt fences, sediment traps), and stormwater management devices.

- Planned asbestos removal activities would require formal notification to the state pursuant to 40 *CFR* 61.145(c) and OAC 3745-20-04, if the activities were not being performed as an entirely on-site action under Paragraph 9.a of the DFF&O. Off-site activities would be subject to these formal notification requirements. Substantive requirements that are identified as ARARs and will be met for this action include those for asbestos removal, handling, and disposal activities as detailed in 40 *CFR* 61.145(a)(1) [OAC 3745-20-04(A)(1)]; 40 *CFR* 61.145(c)(1)(i) through (iv) [OAC 3745-20-04(A)(1) (a) through (d)]; 40 *CFR* 61.150(b)(1) - (2) [OAC 3745-20-05(A)]; 40 *CFR* 61.150(a)(3) [OAC 3745-20-05(B)(2)]; 40 *CFR* 61.150(b)(3) [OAC 3745-20(B)(5)]; 40 *CFR* 61.150(b)(1) and (2) [OAC 3745-20-05(A)]; and 40 *CFR* 61.150(a)(4) [OAC 3745-20-05(B)(4)].

- If DOE were to establish new RCRA or TSCA storage or treatment area(s) as part of this removal activity, they would have to meet applicable RCRA permit modification or TSCA approval requirements, respectively, if the activities were not being performed as an entirely on-site action under Paragraph 9.a of the DFF&O. The ARARs for operating new storage and treatment units for RCRA hazardous wastes and TSCA PCB wastes, as detailed in Appendix B, constitute the substantive requirements under such permit modification or approval requirements. Storage and treatment units would be designed and operated to meet the ARARs listed in Appendix B.

Subsequent project documents to be prepared and submitted for Ohio EPA review pursuant to the terms of the DFF&O (e.g., RAWPs) for this removal action will describe in more detail the activities planned to meet the ARARs and TBC guidance.

5.2.2 Implementability

Technical and administrative feasibility. This alternative is technically and administratively feasible. Conventional construction/removal techniques would be used to remove the equipment, materials, and structures. Off-site disposal of waste materials would occur at existing facilities that have sufficient existing capacities. After D&D is complete, the sites would be regraded to final design grade.

Availability of services and materials. Sufficient equipment and personnel are available for this alternative. On-site waste storage is available, if necessary, for unexpected or unknown wastes generated during the D&D process and waste being prepared for and waiting for off-site disposal. Off-site disposal services are available.

5.2.3 Cost

The total estimated cost for removal of all aspects of the structures associated with the plant support buildings and structures addressed in this EE/CA is approximately $66,000,000. This cost represents removal and off-site disposal of the structures and all equipment and materials, including both subsurface and surface features, of the plant support buildings and structures. These costs were obtained from the costs associated with Critical Decision-1. In general, costs were identified for each building and were developed for components of the D&D, including characterization, equipment removal, and building demolition. Off-site disposal costs are included with each component that generates waste. A rollup of costs from all activities within the scope of this EE/CA is shown in Table 10. The costs presented are direct costs and do not include costs associated with contractor oversight and project management. These are capital costs escalated to Fiscal Year 2011 dollars. There are no operations and maintenance (O&M) activities, so no O&M or present worth costs are presented.

Table 10. PORTS Alternative 2 Costs

Element	Cost
Characterization	$925,598
Excess material removal	$510,273
Utility isolation	$1,102,450
Decontamination	$5,286,062
Equipment removal	$12,973,893
ACM removal	$15,422,716
Above-ground demolition	$25,225,625
Slab demolition	$5,012,688

ACM = asbestos-containing material

5.3 ALTERNATIVE 2A, REMOVE STRUCTURES, ON- AND OFF-SITE DISPOSITION OF EQUIPMENT AND MATERIALS

5.3.1 Effectiveness

Protectiveness and ability to achieve RAOs. As with Alternative 2, Alternative 2a is protective and meets the ARARs identified. The difference between Alternatives 2 and 2a is that the use of an onsite disposal location combined with offsite disposal locations would shorten the miles traveled for waste disposal, lessening transportation risks. The degree of risk reduction would be dependent on whether and when an onsite disposal location might become available.

5.3.2 Implementability

Technical and administrative feasibility. An onsite disposal facility is not currently available or authorized so this alternative is not technically or administratively implementable at this time. Otherwise, the implementability of Alternative 2a is the same as for Alternative 2.

Availability of services and materials. Any designed onsite disposal cell would be anticipated to have sufficient capacity to accommodate the waste volumes expected to be generated by this demolition alternative.

5.3.3 Cost

Costs for Alternative 2a are anticipated to be reduced over the costs of Alternative 2. Any decrease in costs would depend on the timing and outcome of the site-wide waste disposition decision for PORTS. If that decision results in selecting an on-site disposal option, the earlier the decision is made, the more the costs would be expected to decrease (DOE 2002).

6. COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES

This section compares the alternatives on the basis of effectiveness, implementability, and cost. The comparative analysis is presented in Table 11.

Table 11. Comparative Analysis of PORTS Removal Action Alternatives

Alternative	Effectiveness	Implementability	Estimated Cost
1. No action	• Will not achieve RAOs • Will not remove hazardous or radiological constituents • Least protective of human health and the environment • Highest potential for environmental release • Does not provide long-term or permanent solution • Does not result in progress toward site cleanup goals	• Readily implementable technically	$0
2. Remove Structures, Off-site Disposition of Equipment and Materials	• Will achieve RAOs • Protective of human health and the environment • Could be implemented in compliance with ARARs • Could be implemented in a manner protective of workers and public • Provides long-term solution • Results in progress toward site cleanup goals • Effective at isolating contaminants from the environment	• Readily implementable utilizing conventional, readily available construction techniques • Services and materials are readily available • Appropriate permitted disposal facilities with sufficient capacity are available to disposition wastes generated from facilities removal	$66,000,000
2a. Remove Structures, On and Off-site Disposition of Equipment and Materials	• Same as Alternative 2 • Short-term transportation risks could be reduced over Alternative 2 with onsite disposal	• Onsite disposal not currently available or approved. Not implementable at this time. • Same as Alternative 2, onsite disposal facility would have sufficient capacity.	Cost reduction over Alternative 2 depends on when onsite is available

ARAR = applicable or relevant and appropriate requirement
RAO = removal action objective

6.1 EFFECTIVENESS COMPARISON

The No Action alternative (Alternative 1) does not meet RAOs; remove hazardous substances, pollutants, and contaminants from the environment; provide a long-term or permanent solution; or contribute to progress toward overall site cleanup goals. The plant support buildings and structures addressed in this EE/CA would remain in place and, as time passed, would be subject to deterioration, thereby presenting the potential for release of hazardous substances, pollutants, and contaminants to the environment and presenting a substantial safety hazard with respect to workers on the reservation.

Alternative 2 and Alternative 2a, would be the more effective alternatives with respect to the mitigation or prevention of releases of hazardous substances, pollutants, and contaminants to the environment, and would provide a long-term solution by removing the facilities (e.g., structures, equipment) that pose potential risks to human health and the environment. These alternatives also meet RAOs, comply with ARARs, and contribute progress toward the overall site cleanup goals.

Because of increased short-term risks (e.g., potential for contaminant release created by implementation of the removal action), Alternative 2 results in greater short-term risks than Alternative 1. However, with appropriate planning and application of engineering (e.g., dust suppression) and administrative (e.g., procedures) controls, these risks can be controlled at an acceptable level. Engineering controls that minimize the release of contaminants would be implemented during the removal of equipment, asbestos material, and structures.

The short-term effectiveness of Alternative 2a is the same as Alternative 2 except onsite disposal would reduce the transportation risks associated with offsite transport of waste. The reduction in risk depends on if and when onsite disposal may become available.

6.2 IMPLEMENTABILITY COMPARISON

Alternative 1 would be easier to implement because no activities would be required, however, both alternatives are implementable using existing technologies and services. Alternative 2 could be implemented using readily available construction equipment and common industry practices. Additionally, appropriately permitted disposal facilities with sufficient capacity are available to disposition wastes anticipated to be generated from removal of the plant support buildings and structures.

Any on-site disposal facility would be designed with sufficient volume to accommodate the waste anticipated to be generated in Alternative 2a. However, Alternative 2a is not currently implementable because an onsite disposal cell is not available or authorized.

6.3 COST COMPARISON

Comparative analysis of the removal action alternatives is provided in Table 11. The cost for Alternative 1 is $0. The current estimated cost for removal and off-site disposal of the structures and associated equipment and materials (Alternative 2) is approximately $66,000,000. Alternative 2a costs would be lower than Alternative 2, depending on if or when an onsite disposal cell would become available (DOE 2002).

7. RECOMMENDED REMOVAL ACTION ALTERNATIVE

Alternative 2, Remove Structures, Off-site Disposition of Equipment and Materials, is the recommended alternative for D&D of the plant support buildings and structures addressed in this EE/CA. This alternative has been determined to be the most cost-effective approach that satisfies the objectives for the removal action and meets the ARARs to the extent practicable. This recommended removal action contributes to the efficient performance of the anticipated long-term remedial action for this site.

A contingent remedy is also recommended. Alternative 2a, Remove Structures, On- and Off-site Disposition of Equipment and Materials, allows for on-site disposal if an on-site disposal cell is selected in a finalized ROD (i.e., a ROD concurred with by Ohio EPA) and such on-site disposal cell becomes available and operational for the waste stream pursuant to an Ohio EPA approved WAC prior to the Milestone identified for all staged waste to be taken off-site for disposal in an Ohio EPA approved RAWP. At this time, DOE is evaluating an onsite disposal cell in the Site-Wide Waste Disposition Evaluation RI/FS. In the event the contingent waste disposition component is implemented, Paragraph 12.a.v does not apply to any RAWPs issued thereafter. In the event the contingent waste disposition component is implemented, Paragraph 19 does apply to any RAWPs issued thereafter.

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APPENDIX A: PLANT SUPPORT BUILDINGS AND STRUCTURES DESCRIPTIONS

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CONTENTS

ACRONYMS

ACM	asbestos-containing material
ACP	American Centrifuge Plant
AST	above-ground storage tank
CAAS	Criticality Accident Alarm System
CPRTF	Coal Pile Runoff Treatment Facility
CCZ	contamination control zone
DOE	U.S. Department of Energy
GCEP	Gas Centrifuge Enrichment Plant
HPFW	high-pressure fire water
OCB	oil-filled circuit breaker
NPDES	National Pollutant Discharge Elimination System
PA	public address
PCB	polychlorinated biphenyl
PORTS	Portsmouth Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act of 1976
SAA	satellite accumulation area
TCE	trichloroethene
TPMC	Theta Pro2Serve Management Company, LLC
TSCA	Toxic Substances Control Act of 1976
UST	underground storage tank

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A.1 GROUP R1

A.1.1 X-100 – ADMINISTRATION BUILDING

Description of Building: The X-100 Administration Building is a two-story, 135,000-sq ft office building built in 1954. This building has four wings extending from a cement and block core that has a basement and penthouse. The wings of this building are wood frame with asbestos-cement siding (square transite tiles), and the exterior walls are 25 percent windows. The center of the core serves as a security vault on all three floors. There is a freight elevator on the south side of the core facing a parking lot.

The building is used for administrative and related functions. The building provides offices for central files, document records, senior United States Enrichment Corporation management, Security, Engineering, Nuclear Material Control, U.S. Nuclear Regulatory Commission, Quality Assurance, Nuclear Regulatory Affairs, Atomic Employees Credit Union, Mail, Safety Analysis, subcontractors, and others. There is a significant amount of records in all three vaults and a large quantity of abandoned files throughout the remainder of the half unoccupied building (Theta Pro2Serve Management Company, LLC [TPMC] 2006). Located in one half of the basement are the Print Shop, Secured Communications Center, and Telephone Switchboard. The other half of the basement contains a hydraulic system for the freight elevator and a steam condensate tank. There is an ambient air monitoring station located in the penthouse. Half of the building is currently unoccupied (U.S. Department of Energy [DOE] 1993). There are no known underground storage tanks (USTs) or above-ground storage tanks (ASTs) associated with the building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Janitor and office supplies are used and stored in the building.
- Asbestos-containing material (ACM) is reported to be in the thermal system insulation on the piping, transite siding tile, floor tile, and asbestos/polychlorinated biphenyl (PCB) ventilation duct gaskets (DOE 1993, TPMC 2006).
- Lead-based paints may be present on some of the walls and pipes (DOE 1993, TPMC 2006).
- Original fluorescent light fixtures may contain PCBs in the ballasts and mercury in the bulbs (DOE 1993, TPMC 2006).

Known Releases of Contaminants:

- A trichloroethene (TCE) spill may have occurred in front of the spray booth in the office machine repair shop. Discolored stains on the tile were observed in front of the spray booth. Also, a partially full 5-gal container of TCE was stored in the spray booth (DOE 1993).

- Two occurrences involving ammonia fumes from a leaking ammonia container were reported. Exhaust fans were activated to evacuate the fumes. No residual contamination was reported. (DOE 1993).

- Recent walkdowns have identified damaged transite siding and peeling interior and exterior paint.

Contaminants of Potential Concern: ACM, lead, PCBs, TCE, and mercury

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 279,763 cu ft; 12,103 tons

A.1.2 X-100B – AIR CONDITIONER EQUIPMENT BUILDING

Description of Building: The X-100B Air Conditioner Equipment Building is an 800-sq ft, steel-framed structure built in 1958. The building provides air conditioning to the adjacent X-100 Administrative Building from spring through fall and is also used for the maintenance of air conditioning equipment. The building contains chiller equipment, a feed tank system, and an equipment maintenance area. Overhead pipes leading from the northeastern corner of the building to the X-100 Administrative Building contain chilled water, potable water, and steam. Utilities in the building include electricity and potable water. Electrical power is provided by electrical substation X-502 located to the west of the building. The building has one floor drain that discharges to the storm sewer system. There is one sink in the building that discharges to the sanitary sewer system. There are no known USTs or ASTs or below-grade structures associated with the building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- ACM is present in the thermal system insulation on the piping and, possibly, in the vessel walls. Some abatement work (encapsulation) has been conducted on the piping (DOE 1993).

- The age of the building suggests that lead-based paints may be present on the piping and building walls (DOE 1993).

- Ethylene glycol is used in the chiller system and Freon is used in the new air conditioning air-cooled condenser on the west side of the building (TPMC 2006).

- There is a flammable storage cabinet containing penetrating oil for the compressor and janitorial supplies (DOE 1993).

Known Releases of Contaminants: Paint, potentially containing lead, is peeling from exterior and interior surfaces.

Contaminants of Potential Concern: ACM and lead

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 8,476 cu ft; 537 tons

A.1.3 X-101 – DISPENSARY

Description of Building: The X-101 Dispensary, which was built in 1954, is a 10,300-sq ft, single-story, wood-framed building with a 300-sf penthouse for the heating, ventilation and air conditioning system. The exterior walls of the building are covered with transite shingle siding. The floor is reinforced concrete with tile covering.

The building houses a hospital that includes five treatment rooms, four doctor's offices with examination rooms, a laboratory, an X-ray room, a ward, an emergency room, a decontamination area, a lobby waiting room, an office area, medical records storage room, physical therapy area, audio booth, secure storage closet for prescription drugs, and vision and pulmonary function test equipment. The X-ray room was originally built using a lead-backed rock lath applied to the wood studs of the walls and doors. There are no known USTs or below-grade structures associated with the building.

The building is currently used for physical examinations and occasionally for treatment of illness or minor injury. Industrial Hygiene department offices are in the building on the west end.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Hazardous substances stored in the building and waste streams constitute potential sources of contamination, including X-ray solutions and fixers, janitorial supplies, drugs, cylinders of compressed gases, medical waste, and radioactive wastewater from decontaminating employee patients (DOE 1993). The X-ray machine currently in use has its own attached lead shielding. This newer type machine also has an electronic X-ray developing system and does not require or create X-ray solutions and fixers. The biohazard medical waste is currently handled/disposed of through a contract with a certified company that collects and disposes of biohazard waste. Any potential radioactive wastewater generated from decontaminating employee patients is collected in a tank and disposed of on site in accordance with all applicable procedures.

- Lead-based paints may be present on the walls and pipes (DOE 1993, TPMC 2006).

- Fluorescent light fixtures may contain PCBs in ballasts and mercury in bulbs (DOE 1993, TPMC 2006).

- PCBs are reported to be in the uninsulated ventilation ductwork.

- ACM is reported to be in the thermal system insulation on the piping, and transite siding (DOE 1993, TPMC 2006). ACM is also assumed to be in the floor tile.

Known Releases of Contaminants: None

Contaminants of Potential Concern: ACM, lead, PCBs, and mercury.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 61,977 cu ft; 3,669 tons

A.1.4 X-109C – PERSONNEL MONITORING STATION

Description of Building: The X-109C Personnel Monitoring Station is a 70-sq ft steel mobile home trailer installed in 1975. Personnel monitoring stations are used as assembly points for personnel evacuating buildings served by the Criticality Accident Alarm System (CAAS), if alarm systems sound or if public address (PA) system announcements are initiated, and have been used routinely to conduct evacuation drills. The building is equipped with an argon gammagraph for personnel radiation exposure monitoring. There are no known USTs presently or historically associated with the building. There are no wastewater discharges from the building, no floor drains or catch basins, or no sources of drinking water. There are no known PCB-containing capacitors or transformers (DOE 1993, TPMC 2006). There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Floor tiles may contain ACM, and fluorescent light fixtures and bulbs may contain PCBs and mercury (DOE 1993, TPMC 2006).

- Painted interior and exterior surfaces may contain lead-based paint. Paint is peeling from the skirting all around the building (DOE 1993).

Known Releases of Contaminants: None

Contaminants of Potential Concern: ACM, PCBs, mercury, and lead.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 2,013 cu ft; 130 tons

A.2 GROUP R2

A.2.1 X-624-1 – DECONTAMINATION PAD

Description of Building: X-624-1 was constructed in 1991 and is a partially covered pad located next to X-624 with a roof and two sides. This pad is 3,500 sq ft and presently contains miscellaneous stored items, which appear to be large metallic pieces and some large containers. Previously, equipment was cleaned of mud and any contaminants mixed in the mud at this pad in the early 1990s. There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: None

Known Releases of Contaminants: None

Contaminants of Potential Concern: None

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 20,129 cu ft; 1,277 tons

A.2.2 X-744S –WAREHOUSE S NON-UEA

Description of Building: The X-744S warehouse was originally built in 1957 and near the present location of Bldg. X-7725. The X-744S warehouse was moved to its present location in 1978. The warehouse is a 50,000-sq ft, single-story, steel-framed structure covered with 26-gauge galvanized, corrugated steel siding panels and 24-gauge galvanized, corrugated steel roof panels with a concrete slab floor (DOE 1993). This warehouse, along with the X-744T and X-744U warehouses, was used to store lithium hydroxide (DOE 1993, TPMC 2006). The warehouse is currently empty (TPMC 2006) and the building has no utilities. There are no known wastewater discharges from this building. The stormwater discharge from the roof of building enters the West Storage Ditch (DOE 1993). There are no known USTs, ASTs, or below-grade structures associated with the building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: There is potential for chemical contamination from the materials previously stored in the building. The X-744S warehouse, in combination with other warehouses (X-744T and X-744U), reportedly contained tens of thousands of 110-gal metal drums of lithium hydroxide (DOE 1993).

Known Releases of Contaminants:

- A release of lithium hydroxide in this building has been reported. The lithium hydroxide was originally packaged in fiber drums that were found to be inadequate. In 1988, the 77- and 55-gal drums were double wrapped in plastic and overpacked into 110-gal steel drums (DOE 1993).

- Soil around the warehouse is contaminated with lithium (DOE 1993).

Contaminants of Potential Concern: Lithium hydroxide from stored materials.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 157,751 cu ft; 7,603 tons

A.3 GROUP R3

A.3.1 X-743 – LUMBER STORAGE FACILITY

Description of Building: The X-743 Lumber Storage Yard is a large concrete slab on a fill-based platform with open sides and a corrugated asbestos roof supported by steel columns. The south end of the platform is ramped to ground level. The concrete slab, not including the ramp, is approximately 13,750 sq ft, with dimensions of approximately 76 ft × 180 ft. The ramp adds an additional 2,660 sq ft. A railway spur runs parallel to the building on the west side.

The shed was built in the mid-1950s to provide storage for treated lumber and sawdust. At one time, materials were loaded directly off railroad cars onto the platform. Lumber was stored there until about 1989-90. Over time, its function expanded to include storage of acid and gas cylinders. The shed is now used to store empty gas cylinders on the north end, and for storage of pipe and equipment on the south end. There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: Contaminated cylinders are stored on the pad.

Known or Potential Chemical Hazards:

- A wide variety of materials and equipment has been, and is still, stored at the X-743 building. The pad may have contamination in the concrete from releases of these materials or from equipment.
- The roof material contains ACM.

Known Releases of Contaminants: The pad has numerous stains that indicate the release of oil or other potential contaminants.

Contaminants of Potential Concern: Radionuclides and ACM

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 18,329 cu ft; 818 tons

A.3.2 X-744H – BULK STORAGE BUILDING

Description of Building: The X-744H Bulk Storage Building, built in 1953, is a 58,700-sq ft, single-story, steel-framed structure with corrugated metal siding and roof over a concrete pad. It was originally a fabrication shop during the Portsmouth Gaseous Diffusion Plant (PORTS) construction, but was converted into a warehouse in 1956. From 1958 to 1964, the building was used as supplemental storage of uranium hexafluoride and for storage of cylinders that contain heel quantities of uranium hexafluoride. Spill control equipment was also stored in the building. Radioactively contaminated non-Resource Conservation and Recovery Act of 1976 (RCRA) and non-Toxic Substances Control Act of 1976 (TSCA) wastes were stored in the North Waste Management Unit on the north end of the building. Visual assessment indicates the building is not in very good condition. The north end of the bulk storage portion of the building is a secured area and the remaining areas of the building are closed for general access (DOE 1993). The building is currently used for bulk storage of new and surplus equipment (TPMC 2006). There is no known water supply to this building. The water connections were removed and the drains were plugged when the building was converted into a warehouse. There is no known wastewater discharge from this building. Stormwater runoff from the roof is discharged to the East Drainage Ditch. There are no known USTs or below-grade structures associated with the building.

Known or Potential Radiological Hazards: This building has contaminated equipment within the boundaries of the contamination control zones (CCZs). Fixed and surficial radioactive contamination may exist in the storage areas (DOE 1993).

Known or Potential Chemical Hazards:

- Lead-based paint may have been used on the surfaces of the interior and exterior walls due to the age of the building (DOE 1993).
- ACM waste (cooling tower fill) is stored in a secured area of the building (DOE 1993).
- Two pole-mounted transformers on the west side of the building are assumed to be PCB contaminated (DOE 1993).
- Several drums in the North Waste Management Unit have “PCB” stenciled on their sides (DOE 1993).
- Fluorescent light fixtures are assumed to contain ballasts containing PCBs and bulbs containing mercury.

Known Releases of Contaminants:

- Soil around the area of the removal near the north AST is contaminated with benzene, toluene, ethylbenzene, xylenes, petroleum hydrocarbons, and lead (DOE 1993).

- Fixed and surficial radioactive contamination may exist in the storage areas (DOE 1993).
- There are numerous floor stains within the building (2011 photographs).
- Potentially lead-based paint is peeling from exterior and interior surfaces (2011 photographs).

Contaminants of Potential Concern: Radionuclides, lead, ACM, PCBs, and mercury

Previous Removal Actions or Investigations: There were two 1,200-gal diesel fuel ASTs located at the building, one north and one west of the building. The tanks were removed but the dike for the north AST remains with a sign instructing personnel to stay at least 15 ft away.

Estimated Waste Volume and Weight: 213,265 cu ft; 8,666 tons

A.3.3 X-744J – BULK STORAGE BUILDING

Description of Building: The X-744J Bulk Storage Building, also known as Warehouse #17, is a 58,700-sq ft, single-story, steel-framed building with prefabricated corrugated metal siding and roof that sits on a concrete pad. This building was reportedly constructed in 1953 as a fabrication/pipe, plumbing, and mechanical shop and was converted into a warehouse in 1956, when all utilities were disconnected, removed, and drains plugged. Sanitary water is supplied to the building for the fire sprinkler system. Two ASTs that were associated with the building include a 1,200-gal diesel fuel tank and a 55-gal gasoline tank. Both of these ASTs have been removed. There are no known USTs associated with the building (DOE 1993).

The building is used to store a wide variety of new and surplus equipment and supplies, including new pole transformers, calcium hypochlorite, sodium bifluoride, sodium hydroxide, sodium nitrate, ammonium carbonate, alumina, sodium hexametaphosphate, desiccant, ferric sulfate, magnesium fluoride, freon 11, salt, sodium sulfate, PCBs in static capacitors, and bags of absorbent. The north end of the building, which houses miscellaneous classified hardware, is separated from the remainder of the building.

Known or Potential Radiological Hazards: Two small areas (2 ft × 3 ft) of fixed radioactive contamination have been discovered but the majority of the building has not been surveyed (DOE 1993).

Known or Potential Chemical Hazards:

- Due to the age of the building, lead-based paint may have been used on the surfaces of the walls (DOE 1993).
- An asbestos survey of the building indicated there were no ACM present in the building (DOE 1993).
- Although no other chemical hazards have been reported, there may be additional hazards due to the varied nature of the materials and equipment stored in the building.

Known Releases of Contaminants: None

Contaminants of Potential Concern: Radionuclides, lead, and PCBs.

Previous Removal Actions or Investigations: The two ASTs (1,200-gal diesel tank and 55-gal gasoline tank) were removed.

Estimated Waste Volume and Weight: 212,806 cu ft; 8,616 tons

A.4 GROUP R4

A.4.1 X-109A – PERSONNEL MONITORING STATION

Description of Building: The X-109C Personnel Monitoring Station, built in 1955, is a 1,100-sq ft block building with a concrete slab roof and floor. It was originally used as a switch house for a temporary power switch yard during original PORTS construction. The building has an abandoned restroom. Personnel monitoring stations are used as assembly points for personnel evacuating buildings served by the CAAS, if alarm systems sound or if PA system announcements are initiated, and have been used routinely to conduct evacuation drills. Sanitary waste was previously discharged from this building to a septic system that has been rendered permanently inoperable. The building is connected to the plant's water supply (DOE 1993, TPMC 2006). Miscellaneous materials and equipment are currently stored in the building. There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: There is an area of fixed radiological contamination on the floor.

Known or Potential Chemical Hazards:

- The building contains a solvent vat with residual residue and a drum containing solvent. Both the residue and solvent are considered to be nonhazardous material. An old air conditioner located in the building may contain Freon.

- Fluorescent light fixtures and bulbs may contain PCBs and mercury (TPMC 2006).

- Lead-based paint is potentially present on interior and exterior surfaces of the building. Paint on the interior concrete floor is peeling (DOE 1993).

Known Releases of Contaminants: In 1992, an overflow of the septic tank that supported this building was discovered in an area approximately 70 ft behind the building. The tank was pumped out twice. The contents were treated as hazardous wastes and were found to be a mixture of oil (possibly fuel oil or used drained oil) and sewage. A waste oil storage shed (X-740) was located next to the X-109A building until its demolition in 2006. There may be oil-contaminated soil in the vicinity of the septic tank. The sanitary system has been rendered permanently inoperable (DOE 1993).

Contaminants of Potential Concern: Radionuclides, PCBs, mercury, and freon.

Previous Removal Actions or Investigations: Asbestos surveys conducted in 1988 through 1990 did not reveal the presence of asbestos (DOE 1993).

Estimated Waste Volume and Weight: 6,498 cu ft; 316 tons

A.4.2 X-530A – HIGH VOLTAGE SWITCH YARD

Description of Building: The X-530A High Voltage Switch Yard, constructed in 1954, is located immediately due west of the X-330 Process Building in the central portion of PORTS. Throughout its operational life, this switch yard has been used to control power distribution to PORTS and the Gas Centrifuge Enrichment Plant (GCEP).

This building is an open yard surrounded on three sides by a perimeter fence. It measures 1,200 ft × 650 ft. A Sergeant's Yard extends to the west from the main yard. The bed of the switch yard contains a 1- to 3-ft layer of 1- to 3-in.-diameter limestone gravels, which are underlain by clay soils. A series of north-south French drains are sandwiched between the clay layer and limestone bed. These French drains discharge to Storm Sewers A and B and the northern two tributaries of the West Drainage Ditch. Electrical cables and a grounding grid are located on and/or under the limestone gravel bed (DOE 1993).

The X-530A High Voltage Switch Yard contains electrical transformers, switching equipment, and various towers and other elements that comprise the overall steel superstructure of the building. High-voltage, oil-filled circuit breakers (OCBs) and gas circuit breakers provide line switching capabilities. Oil-filled transformers step power down to a nominal 13.8 kV. All of the transformers currently contain mineral oil with < 50 ppm PCBs. The Sergeant's Yard supplies power to the Ohio Valley Electric Power Company. It contains one 150 mVA transformer and its associated OCBs. A gas cart containing sulfur hexafluoride gas (SF_6) and equipment for flushing the circuit breakers is stored in the switch yard.

The switch yard is served by and part of the plant electrical utility system. Water from the X-611 Water Treatment Facility supplies water to the sprinkler system that serves the transformers in the switch yard (DOE 1993).

This Engineering Evaluation/Cost Analysis addresses the above-grade structures and equipment associated with the switch yard.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Chemicals that have been stored and used in the switch yard include PCB-based transformer oil (Askarel), mineral oil, and lead. The oil was contained in various transformers, circuit breakers, and tanks (DOE 1993).

- Pole-mounted transformers in the switch yard may contain PCBs (DOE 1993).

- Lead-covered power cables may be present in the switch yard (DOE 1993; TPMC 2006).

- OCBs in the switch yard were repainted in the 1980s. Just prior to this repainting, the old paint on the OCBs was removed by sandblasting. This old paint may have been lead-based. Sandblasting residue was observed in the switch yard, which means that the switch yard may be contaminated with residual lead from the old paint (DOE 1993).

- Lead-covered power cables may be present in the switch yard (DOE 1993, TPMC 2006).

- No asbestos or ACM is present in the switch yard (DOE 1993).

Known Releases of Contaminants:

- Over many years of operations, some of this oil was released accidentally to the limestone gravel bed from leaking oil transfer lines and overfilling of OCBs. Oil stains are visible on the limestone gravel under all of the transformers in the switch yard (DOE 1993).

- Several spills and fires have occurred in the switch yard. In March 1990, a ruptured gasket resulted in the release of 1,000 to 1,500 gal of oil. Spill containment was implemented before the oil reached the West Holding Pond. A portion of the spill was assumed to have soaked into the limestone gravel bed and soil in the switch yard (DOE 1993).

- Prior to 1993, a transformer explosion and fire occurred in the Sergeant's Yard. An estimated 20 to 30 gal of mineral oil were released to the limestone gravel bed. The oils were wiped down and soil sampling was performed. No PCBs were detected in the samples (DOE 1993).

Contaminants of Potential Concern: PCBs and lead

Previous Removal Actions or Investigations:

- Prior to 1993, a PCB survey was conducted in the switch yard. Most of the transformers and OCBs contained oil with PCBs at concentrations < 50 ppm, but some grounding transformers had concentrations up to 90 ppm (DOE 1993). More recent information suggests that the oil has been changed in the grounding transformers and they now contain oil with < 50 ppm PCBs.

- An asbestos survey of the switch yard was conducted prior to 1993. No asbestos was found in the switch yard proper, but ACM was present in some of the buildings located within the perimeter of the switch yard (DOE 1993).

Estimated Waste Volume and Weight: 370,134 cu ft; 1,724 tons

A.4.3 X-530B – SWITCH HOUSE

Description of Building: The X-530B Switch House consists of three structures: a Control House, North Switch House, and South Switch House. The complex covers an area of approximately 112,600 sq ft, and the Control House is located between the Switch Houses.

Control House: The Control House is a rectangular two-story, steel-framed structure with corrugated cement asbestos (transite) siding on a reinforced concrete slab. This building is 120 ft in length along the axis of the building group and about 67 ft wide. The second, or operating, floor is also on reinforced concrete. The exterior walls are fluted insulated metal panels for the full height of the building.

The first, or ground, floor houses carrier current equipment, two battery rooms with batteries and chargers, supervisory cabinets, alarm relay cabinets, heaters, a room containing ventilating and air-conditioning equipment, and a synchronous condenser amplifying and field rheostat controls. The operating floor contains the substation control panels, lighting and auxiliary power control panel, and an operator's console. The operating floor also contains a kitchen, restroom, and shower facilities.

Switch Houses: Electric power at 13.8 kV from the X-530A Switch Yard is received at the high-voltage switchgear of the Switch Houses and is distributed in underground tunnels to the X-326 and X-330 Process Buildings, X-300 Plant Control Facility, and other buildings.

Switch Houses are one-story, steel-framed structures with flat reinforced concrete slab roofs. The walls of the buildings are corrugated transite siding and the roof consists of metal panels supported on steel framing.

An underground power tunnel adjacent to the east wall of the Switch Houses extends the full length of the buildings and connects with the Control House and the outside tunnel distribution system. The interior underground power tunnels are reinforced concrete box-type structures, sloped for drainage, waterproofed, and provided with openings for access.

The roof area of the Switch Houses is a deck area that contains 13.8 kV switch gear and synchronous condensers. Switchgear and synchronous condensers are installed on the roof of each of the two Switch Houses. The ground floors house auxiliary equipment such as synchronous condenser controls and pumps, switch gear air compressors, low-voltage switch gear, heating and ventilating equipment, distribution transformers and panels, batteries, and lighting transformers and panels.

Known or Potential Radiological Hazards:

- Ventilation ducts and fans on the ground floor of both the North and South Switch Houses are contaminated with radionuclides.

- There are areas of fixed radiological contamination on the first floors concrete floor.

Known or Potential Chemical Hazards:

- ACM is potentially present in cable trays, thermal insulation, floor tile, and transite siding.
- Lead-based paint is potentially present due to the age of the building.
- Battery rooms have batteries containing battery acid.
- PCBs are potentially present in transformers, synchronous condensers, ventilation duct gaskets, and fluorescent light fixture ballasts.
- Mercury is potentially present in switches and fluorescent light tubes.
- Nitrogen is used for pressure control in numerous places within the buildings.

Known Releases of Contaminants:

- There are battery acid stains on floors in the battery rooms, with some leading from the batteries to the floor drains. In September 1992, a battery electrolyte discharge occurred in the North Switch House, which was diluted and cleaned.
- Numerous lubricating, hydraulic, and potentially PCB oil stains on floors due to spills and leakage.

Contaminants of Potential Concern: Radionuclides, ACM, lead, PCBs, mercury, and battery acid residue

Previous Removal Actions: None

Estimated Waste Volume and Weight: 361,975 cu ft; 14,873 tons

A.4.4 X-530C – TEST AND REPAIR BUILDING

Description of Building: The X-530C Test and Repair Building is a 1,200-sf building of steel frame construction on a concrete slab with transite siding. Constructed in 1954, this building provides an electrical maintenance shop for the X-530 Switch Yard Complex, work benches, lunchroom, and a restroom. There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- ACM is present in the transite siding and thermal pipe insulation.
- Lead-based paint is potentially present due to the age of the building.
- Fluorescent light fixtures may be present that contain PCBs in the ballasts and mercury in the tubes due to the age of the building.

Known Releases of Contaminants: None

Contaminants of Potential Concern: ACM, lead, PCBs, and mercury

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 10,453 cu ft; 674 tons

A.4.5 X-530D – OIL HOUSE

Description of Building: The X-530D Oil House is a 500-sq ft steel-framed structure on a concrete slab with transite siding and roof built in 1954. The building encloses equipment that provides insulating oil exchange in electrical equipment at the switch yard. Oil drained from the non-PCB transformers and breakers is stored, filtered, and recycled through this building. There are two 15,900-gal tanks and two 34,000-gal tanks in the switch yard that are associated with this building (DOE 1993). The only oil processed in this building contained less than 50 ppm PCBs.

There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- The building siding and roof are ACM.
- Painted surfaces potentially contain lead-based paint.

Known Releases of Contaminants:

- Oil leaks are common around the pumps and oil-soaked absorbent material has been seen around all the mechanical equipment (DOE 1993).
- In 1976, an oil film was seen in the West Drainage Ditch that was traced to an overflow from an uncovered 3-gal garbage can in the X-530D Oil House.

Contaminants of Potential Concern: ACM and lead

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 2,578 cu ft; 192 tons

A.4.6 X-530E – VALVE HOUSE

Description of Building: The X-530E Valve House is a 500-sf, reinforced-concrete structure built in 1954. This building is located on the north side of the X-530A Switch Yard. A below-ground pump house contains eight water pumps and distribution lines that are part of the deluge fire water system protecting high voltage transformers on the north side of the switch yard. There are below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- There are 30 mercury switches used in this building.
- Although it is thought the oil processed in this building was < 13 ppm in PCB content, the processing of higher PCB content oil at some time is assumed for risk assessment purposes.
- Any painted surfaces are assumed to have lead-based paint.

Known Releases of Contaminants: There are oil stains on pumping equipment.

Contaminants of Potential Concern: Lead, PCBs, and mercury

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 1,165 cu ft; 120 tons

A.4.7 X-530F – VALVE HOUSE

Description of Building: The X-530F Valve House is a 500-sq ft reinforced concrete structure built in 1954. It is located on the south side of the X-530A Switch Yard. A belowground pump house contains eight water pumps and distribution lines that are part of the deluge fire water system protecting high voltage transformers on the south side of the switch yard.

There are below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- There are 30 mercury switches used in this building.
- Although it is thought that the oil processed in this building was < 13 ppm in PCB content, the processing of higher PCB content oil at some time is assumed for risk assessment purposes.
- Any painted surfaces are assumed to have been painted with lead-based paint.

Known Releases of Contaminants: There are oil stains on pumping equipment.

Contaminants of Potential Concern: Lead, PCBs, and mercury

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 1,165 cu ft; 120 tons

A.5 GROUP R5

A.5.1 X-600 – STEAM PLANT

Description of Building: The X-600 Steam Plant was built in 1953 and is a 19,506-sq ft building constructed on a concrete slab with concrete walls on the ground floor and transite siding on a steel frame for the operating floor and upper floor. The control room is located on the operating floor. The building has produced steam to heat buildings, vaporize uranium hexafluoride, maintain process temperatures, and clean equipment throughout the plant site (DOE 1993, TPMC 2006).

Three coal-fired boilers are used in conjunction with necessary auxiliary equipment to generate the required quantity of steam. The building was upgraded with stack emissions abatement and coal handling capital improvement in the 1980s and 1990s. Steam is distributed through two lines referred to as the east and west loops. The condensate is returned to the condensate tank located at the Steam Plant. Coal is trucked into the plant and delivered to the coal storage yard or placed directly into the coal conveyor system. Coal dumped into the coal chute is fed onto a system of large belt conveyors that transport it to the coal bunker room where a conveyor distributes it to the three coal bunkers. Coal from the bunkers slides through baffles down four chutes into stokers that feed the boiler. The fly ash is removed by mechanical dust collectors and electrostatic precipitators before the gases are released to the atmosphere through the boiler stacks. Stack particulate emissions to the atmosphere are controlled by electrostatic precipitators and ash is removed from the boilers by a vacuum conveying system. The ash is stored in silos and periodically hauled to an off-site landfill. Water used in the boilers to produce steam is softened using sodium zeolite and hydrogen zeolite that are contained within tanks. To regenerate the sodium zeolite and hydrogen zeolite tanks, a large brine tank and a 4,000-gal sulfuric acid AST are used, respectively. The ASTs are diked and are located on the west

side of the X-600 Steam Plant. Pumps are used to draw the materials into the zeolite tanks when the resins in the tanks need to be regenerated. After the water is softened, it is pumped into a degasifier to drive off the carbon dioxide and is then pumped into a deaerator storage tank. The boiler feed water is supplied from the deaerator storage tank and the condensate tank (DOE 1993, TPMC 2006).

Sanitary water is supplied to the building for boiler water, sinks, and the restroom. Steam condensate returns from the site and is fed back to the boilers. The sanitary wastewater discharges (bathrooms and sinks) are connected to the sanitary sewer and ultimately flow to the sewage treatment building. Storm water flows directly into a nearby ditch and discharges into the South Holding Pond. Surface water runoff, zeolite regeneration water, and blowdown water are discharged into Storm Sewer G, and then to the South Holding Pond and National Pollutant Discharge Elimination System (NPDES) Outfall 002. Wastewater entering floor drains at the building flows into the coal runoff lagoon and is treated at the X-621 building (NPDES Outfall 002) for pH adjustment and metal and suspended solids removal before discharge to the South Holding Pond (DOE 1993).

Known or Potential Radiological Hazards:

- The X-600 Steam Plant is designated as being radioactively contaminated because of the natural radiation of coal (DOE 1993).

- There may be contamination in the return steam condensate from radioactive facilities (DOE 1993, TPMC 2006).

Known or Potential Chemical Hazards:

- Some raw materials, hazardous materials, and hazardous waste streams associated with the X-600 Steam Plant include asbestos, sulfuric acid, ethylene glycol, kerosene, transmission fluid, hardness buffer, alum, waste coal sludge (arsenic and other metals), waste oil (benzene), cleaning solvents, scrap metal, aerosol cans, asbestos insulation, rags, fluorescent light bulbs, and incandescent light bulbs (DOE 1993).

- The major source of solid waste found at the Steam Plant is coal ash from the hoppers, coal dust, and fly ash (DOE 1993).

- ACM is present or has been observed in the form of thermal system insulation on condensate pipes, zeolite tanks, boilers, other piping, and in the transite siding (DOE 1993). Floor tile containing asbestos is also suspected due to the age of the building.

- Lead-based paint may have been applied to the walls due to the age of the building (DOE 1993).

- A transformer containing Pyranol (PCB dielectric fluid) is located in the north central area of the ground level floor and may contribute to PCB contamination (DOE 1993).

- Fluorescent light fixtures may contain ballasts with PCBs and bulbs may contain mercury (DOE 1993).

- Two 135-gal, hand-pumped drums containing lube oil are located on a diked platform. Also located on the platform are four 5-gal lube oil containers and one 5-gal container of transmission fluid (DOE 1993).

- A diked, 4,000-gal sulfuric acid AST is located outside on the west side of the building. The dike has cracks and has leaked during integrity tests (DOE 1993).

Known Releases of Contaminants:

- On March 3, 1990, a fish kill occurred in a drainage ditch to the South Holding Pond. Due to the low pH caused by the discharge of hydrogen zeolite regeneration water that consists of diluted sulfuric acid, 400 blue gill fish were killed. The discharge occurred due to the erosion of the floor under the hydrogen zeolite tanks and around the acid pumps. Undocumented sulfuric acid spills and releases have occurred when acid was used to regenerate the hydrogen zeolite tanks. A documented release of 4 gal of sulfuric acid occurred when a portion of an abandoned pipe to the acid storage tank was removed. The area was flushed with water and discharged to a flow drain. The flow to the South Holding Pond was blocked (DOE 1993).

- Small stains were visible around a PCB transformer located in the north-central portion of the ground floor of the building (DOE 1993).

- Oil stains were observed on and around the three boiler feed pumps located in the south-central area of the ground floor, on and around acid pumps located in the northwest corner of the ground floor, and in the room on the east side of the ground floor near the turbines. The stains may be a source of PCB contamination due to the various types of oils used over the years in the pumps and turbines (DOE 1993).

- Oil stains were observed in the area of the platform containing the two 135-gal, hand-pumped drums that contain lube oil and the 5-gal container of transmission fluid. Information obtained indicated that leaks had occurred in the past from the hand pumps. A visual assessment was performed of the pumps but no leaks were observed. The potential for leaks into the floor drains was reduced by placing the oils and fluids on the containment platform (DOE 1993).

- A white precipitant-like stain was observed near a 55-gal drum of sodium sulfate that is located on the operating floor. It is possible the stain is from a spill from the drum (DOE 1993).

Contaminants of Potential Concern:

- ACM associated with thermal insulation, transite siding and floor tile
- Lead associated with lead-based paint
- PCBs associated with oils, transformer fluid, and fluorescent light fixture ballasts
- Mercury associated with fluorescent light bulbs
- Sodium sulfate associated with drum leakage
- Sulfuric acid associated with the AST
- Arsenic, beryllium, cadmium, manganese, thorium (specifically thorium-228), and uranium (specifically uranium-235 and 238) associated with coal, coal ash and fly ash.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 157,539 cu ft; 15,196 tons

A.5.2 X-600B – STEAM PLANT SHOP BUILDING

Description of Building: The X-600B Steam Plant Shop is a 1,000-sq ft building built in 1981 that is constructed of metal panels that fit together on a central beam, with a main structure built on a concrete slab. A flammable storage cabinet and a metal storage shed are located outside the building. The building is used to conduct repairs and maintenance on parts and components associated with the X-600 Steam Plant and serves as a storage area for small replacement parts and maintenance equipment. The only known water supplied to the building is water to a sink and a drinking fountain. Wastewater discharges into a sink and floor drain, both of which are connected to the sanitary sewer that ultimately flows to the X-6619 Sewage Treatment Facility. Steam is used to heat the building. There is no mention of any known USTs, ASTs, or below-grade structures associated with the X-600B building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Hazardous materials that can be found in the X-600B Steam Plant Shop and its appurtenances include pipe sealants (adhesives, cements), oils (penetrating and lube), used oil, grease, degreasing solutions, aerosol paint cans, etc. (DOE 1993, 2011 walkdown).

- Hazardous wastes stored in a marked satellite accumulation area (SAA) include rags, gloves, scrap metal, and fluorescent light bulbs stored in 55-gal drums or the original box. The SAA is located in the northeast corner of the building (DOE 1993).

- No asbestos, lead-based paint, or other hazardous building materials are known to be present in the building or equipment (DOE 1993).

- Although the X-600B Steam Plant Shop was built in 1981, it is possible, but unlikely, that the fluorescent light ballasts contain PCBs. No data exist that would identify possible PCB-contaminated oils used in this building (DOE 1993).

Known Releases of Contaminants: Oil and grease stains are evident on the floor, but no sampling data are known to exist with respect to these stains (DOE 1993).

Contaminants of Potential Concern: None

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 9,429 cu ft; 536 tons

A.5.3 X-600C – ASH WASH TREATMENT BUILDING

Description of Building: The X-600C Ash Wash Treatment Building was built in 1985 and comprises 400 sq ft of floor space. The floor and bottom half of the building structure are comprised of concrete; the top half of the building structure is comprised of corrugated metal on a steel frame. The removal of ash from water that collects in the ash silos is performed in the X-600C building (DOE 1993), which includes the use of ash handling blowers, a wash system, a cyclone separator, and ash collection silos (TPMC 2006).

There is no known water supply to the building and no wastewater is known to discharge into the sanitary waste system from this building. Ash removal water is normally vacuum pumped from the top of the ash silos into a thickener tank before it is discharged. The wastewater is normally discharged into the South Holding Pond, but can be diverted to the Coal Pile Treatment Building (X-621) (DOE 1993).

There are no known USTs, ASTs, or below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- There are no known hazardous substances, raw materials, or products stored, treated, or generated at the X-600C building (DOE 1993).
- There are no known hazardous or solid waste management units associated with this building. Ash sludge from the filter presses is collected in the hoppers and deposited on the coal ash pile in the coal yard. The coal ash contains arsenic and metals that are common to coal (DOE 1993).
- ACM is not known to be present in the building (DOE 1993).
- Lead is not known to be present in the building (DOE 1993).
- No known PCB equipment or PCB-contaminated equipment is present in the building. Incandescent lighting is used in the building (DOE 1993).

Known Releases of Contaminants: None

Contaminants of Potential Concern: Arsenic, beryllium, cadmium, manganese, thorium (specifically Th^{228}), and uranium (specifically U^{235} and U^{238}) associated with coal, coal ash and fly ash.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 9,782 cu ft; 640 tons

A.5.4 X-621 – COAL PILE TREATMENT FACILITY

Description of Building: The X-621 Coal Pile Runoff Treatment Facility (CPRTF), which was built in 1984, has an area of 1,900 sq ft and is constructed of steel with a concrete floor. In 1992, a 400-sq ft room was added to the east side of the building. The CPRTF is used as a treatment building to adjust pH and remove iron, copper, and zinc from the surface runoff of the coal storage yard, and to divert wastewaters from the steam plant. Wastewater that has been treated with sodium hydroxide (NaOH), anionic polymer, and alum is discharged from the X-621 CPRTF via Outfall 602 to the X-230K South Holding Pond. The South Holding Pond provides a quiescent zone for the settling of suspended solids and dissipation of chlorine. It also provides for the adjustment of pH before discharge. There is one 25,000-gal AST containing NaOH at this building. An earthen dike is used as a secondary containment. Water to the X-621 CPRTF for the emergency shower, eyewash, polymer dilution, and flushing is provided by the plant water system. Floor drains are piped to the X-621 building lagoon (DOE 1993). There are no known USTs associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Hazardous materials found in the X-621 CPRTF building include NaOH in a 25,000-gal AST, bags of alum, caustic soda, Betz Foam-Trol, citric acid, and anionic polymer. The quantities of these materials vary on a weekly basis (DOE 1993).

- The X-621 CPRTF does not generate any hazardous wastes. The normal waste stream from the X-621 building includes sludges from the filter press, which is collected in hoppers and disposed at the X-735 Landfill (DOE 1993).

- There is no PCBs or PCB-contaminated equipment present at the CPRTF. A transformer located on the east side of the building does not contain PCBs (DOE 1993).

- Due to the age of the building, no ACM, lead-based paint, or fluorescent light fixtures containing ballasts with PCBs or tubes containing mercury are expected in the building.

Known Releases of Contaminants:

- A NaOH spill has occurred at this building. Five 55-gal drums containing potentially NaOH-contaminated soil were located on a pallet outside of the X-621 building (DOE 1993).

- There are stains near the citric acid drums and near the polymer tank, and brown splatter stains near the filter press on the floor and ceiling (DOE 1993).

Contaminants of Potential Concern: NaOH and citric acid.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 7,275 cu ft; 406 tons

A.6 GROUP R6

A.6.1 X-744B – SALT STORAGE BUILDING

Description of Building: The X-744B Salt Storage Building is a 1,000-sq ft, 3-sided wooden structure built in 1979 that is used to store salt for de-icing plant roads. One end of the building is open for access by front end loaders to drive into the building, load the salt, and place it in salt trucks for delivery to the plant roads. Storm water runoff that discharges to the North Holding Pond constitutes the only source of wastewater from the building. There are no known USTs or below-grade structures associated with the building; it does not contain insulation; and is not painted. There are no transformers or other known PCB-contaminated equipment known to be associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: The potential for an environmental impact exists if large amounts of rainwater or water from another source enter the building because of the quantity of salt stored at this building.

Known Releases of Contaminants: None

Contaminants of Potential Concern: Salt

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 3,390 cu ft; 156 tons

A.6.2 X-744W – SURPLUS AND SALVAGE WAREHOUSE

Description of Building: The X-744W Surplus and Salvage Warehouse is a 94,000-sq ft, single-story building with steel-framed construction and corrugated metal siding and a roof that sits on a concrete pad. The building was built in 1957 and was initially located near the X-751 GCEP Mobile Equipment Garage and the X-1000 Parking Lot Area. In 1983, the frame and siding were relocated to the present location. The warehouse stores surplus plant equipment such as desks, shelves, calculators, tools, electronic equipment, construction materials, pumps, and raw materials for potential auction/sale to the public. The type of material stored at the warehouse changes continuously due to the sales of the material to the public. The building has an area located in its center that contains restrooms, showers, and offices. There are no known USTs associated with the building (DOE 1993). Sanitary water for the restrooms is supplied to the building via the X-611Water Treatment Plant (DOE 1993, TPMC 2006). The wastewater (water from the restroom and showers) from the building is discharged into a septic tank and leach field located northeast of the X-744W building (DOE 1993).

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- The raw materials or substances at the X-744W warehouse include paints and coatings; oils, such as mop oil and cutting oil; inorganics, such as activated alumina, sodium bicarbonate, and batteries. General housekeeping solid wastes are generated at the warehouse (DOE 1993).

- Due to the age of the building lead-based paint may have been used on the interior office walls. No documentation was available on the possible presence of lead-based paint (DOE 1993).

- Although no contamination has been reported, potential sources of contamination include items that are brought into the building for storage, which could include PCBs, oils, and solvents (DOE 1993).

Known Releases of Contaminants: Approximately 300 pounds of sulfuric acid was spilled on the east drive of the X-744W warehouse when two wooden pallets containing wet cell batteries slipped off a flatbed truck. The acid was neutralized and cleaned up. It is possible that trace amounts of acid and lead may remain (DOE 1993).

Contaminants of Potential Concern: Lead

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 157,786 cu ft; 6,943 tons

A.6.3 X-752 – WAREHOUSE

Description of Building: The X-752 Warehouse, formally known as the Hazardous Waste Storage Unit, is a 20,000-sq ft building constructed of corrugated metal on a steel frame built on a concrete slab. The southeast end of the building contains 8-in. concrete dikes that were constructed to contain and segregate the various types of liquid wastes once stored at the building. Thirty large concrete tubs or vats measuring approximately 5 ft × 10 ft × 1.5 ft that provided secondary containment for stored wastes remain in the building. The building was built in 1978 and operated until 1980 as a general purpose warehouse. From 1980 to 1986, the building was used to store radioactive, mixed, and hazardous wastes. From 1986 to 1992, the building was operated as a hazardous waste storage unit. In 1992, all of the stored wastes were transferred to the X-7725 GCEP Recycle/Assembly Building. Currently, the west half of the building (separated with a wall) contains radiologically contaminated equipment and containerized waste. The east half of the building contains clean supplies to support the waste shipping operation at the X-747 complex. There are no known USTs, ASTs, or below-grade structures associated with this building.

Known or Potential Radiological Hazards:

- The west side of the building is designated a CCZ (TPMC 2006).
- Radioactive and mixed wastes were stored at the building (DOE 1993, TPMC 2006).

Known or Potential Chemical Hazards:

- Paint observed peeling from the ceiling and most of the walls may contain lead due to the age of the building (DOE 1993).
- Fluorescent light fixture ballasts may contain PCBs (DOE 1993) and the tubes may contain mercury.
- Hazardous chemical residues are assumed to be present in the concrete (TPMC 2006).

Known Releases of Contaminants:

- A release of several 55-gal drums of chromic acid occurred in February 1988 near the southeastern door of the building and clean up was conducted. However, no sampling was reportedly performed to confirm cleanup completion. There is evidence of contamination under the concrete slab (DOE 1993).
- Oil stains have been observed on the floor throughout the building. A potential source of these oil stains is the PCB waste oil that was previously stored in drums at the building (DOE 1993).

- Other floor stains were observed at locations where 55-gal drums of radioactive, mixed, and RCRA and TSCA wastes were stored. Drums contained radioactive and mixed sludge, TCE wastes, paint wastes, flammable solvents, cyanide wastes, mercury residues, watery sludges containing metals, lab packs containing expired laboratory chemicals, and chromic acid. It is not known whether the stains were due to possible contamination from past waste storage or condensation (DOE 1993).

Contaminants of Potential Concern: Radionuclides, PCBs, mercury, lead, and chromic acid residue

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 74,902 cu ft; 3,435 tons

A.6.4 X-752AT 1-4 – TRAILER COMPLEX

Description of Building: The X-752AT 1-4 Trailer Complex is located on the south side of the X-752 warehouse and consists of four trailers: one for offices, one for a donning/doffing building, one for a break room, and one that contains men's and women's locker rooms.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: None

Known Releases of Contaminants: None

Contaminants of Potential Concern: None

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 6,427 cu ft; 112 tons

A.7 GROUP R7

A.7.1 X-102 – CAFETERIA

Description of Building: The X-102 Cafeteria, constructed in 1954, is a 19,000-sq ft single-story, wood-framed building with cement-asbestos shingles covering the exterior walls. The cafeteria consists of the northern section, which is used for food preparation, serving, and storage, and the southern section, which contains the dining area and meeting rooms. The building was remodeled in the 1980s. The building has served as a cafeteria since its construction. There are no known USTs associated with the building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Lead-based paints may be present on pipes (DOE 1993, TPMC 2006).
- Fluorescent light fixtures may contain PCBs in ballasts and mercury in bulbs (DOE 1993, TPMC 2006).
- Ventilation ducts may contain PCB-impregnated gaskets (DOE 1993, TPMC 2006).
- ACM is reported to be in the thermal system insulation on the piping, and cement-asbestos transite siding (DOE 1993, TPMC 2006).

Known Releases of Contaminants: None

Contaminants of Potential Concern: ACM, lead, PCBs, and mercury.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 108,699 cu ft; 6,619 tons

A.7.2 X-106 – TACTICAL RESPONSE BUILDING

Description of Building: The X-106 Tactical Response Building is a 6,200-sq ft, single-story, concrete block building with a metal-tar-gravel roof. Transite siding is located above the large vehicle doors across the north side of the building. The building was built in 1955 and served as the fire station into the early 1980s. It is currently used as office space by the Protective Force physical fitness staff and for storage of Protective Forces equipment and gear.

The X-106 building is divided into the following rooms: locker, clothing storage, laser, general storage, shower, tower (formerly used to hang fire hoses to dry), weapons vault, and the main equipment storage room with five-bay garage doors. The current use for this building is for storage. However, the building provides inside parking for the emergency mobile communications van.

This building has steam, fire water, electric, drinking water, sanitary sewer, storm sewer, and telephone services. Water is supplied to the building via the X-611 Water Treatment Plant. There are no known USTs or below-grade structures associated with the building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Based on asbestos surveys, ACM is reported to be on the thermal system insulation on the steam lines (DOE 1993, TPMC 2006). Transite siding is also located above the large vehicle doors across the north side of the building.
- Because of the age of the building, lead-based paint is suspected to be present on the walls and pipes; however, there is no formal documentation (DOE 1993, TPMC 2006).
- PCBs may be present in the fluorescent light fixtures and mercury in the bulbs.
- Lead from spent ammunition is stored in the building to be recycled, therefore, there is a potential for lead contamination.

Known Releases of Contaminants: None

Contaminants of Potential Concern: ACM, lead, PCBs, and mercury.

Previous Removal Actions or Investigations: A PCB survey of electrical equipment was conducted at the building and no PCB equipment or PCB-contaminated equipment was found (DOE 1993).

Estimated Waste Volume and Weight: 45,238 cu ft; 2,722 tons

A.8 GROUP R8

A.8.1 X-611 – WATER TREATMENT PLANT

Description of Building: The X-611 Water Treatment Plant (Chemical Building) was constructed in 1954 and is a two-story, 8,000-sq ft concrete building housing lime mixing equipment, a control room, battery room, and break room. It has a fuel oil heating unit that is currently not in use.

A 60,000 gal AST that contains carbon dioxide is located south of the building (DOE 1993).

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Raw materials stored in the building include lime, chlorine cylinders, polyvinyl chloride cement and cleaner, bleach, and descaler (DOE 1993).
- The thermal piping insulation contains ACM (DOE 1993, TPMC 2006).
- Lead-based paint is potentially present due to the age of the building.
- Fluorescent light fixtures may contain ballasts with PCBs and bulbs may contain mercury (DOE 1993, TPMC 2006).

Known Releases of Contaminants:

- The top floor of the building, which houses lime hoppers, is covered with powdered lime. The room on the first floor of the building that contains the lime shakers is also coated with lime dust (DOE 1993).
- Exterior paint, possibly lead-based, is peeling.

Contaminants of Potential Concern: ACM, lead, PCBs, mercury and calcium oxide.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 77,941 cu ft; 7,271 tons

A.8.2 X-611C – FILTER BUILDING

Description of Building: The X-611C Filter Building is a two-level, 600-sq ft reinforced concrete structure with a concrete roof slab. The superstructure extends one story above the outside grade and above the substructure. The substructure serves as a wet well for the supply pumps and filtered water basins, or clear well. The building is divided into two separate areas for filtering and pumping. The filter operating floor, which is approximately 7 ft below the normal level of water in the X-611 Water Treatment Plant secondary basin, contains four sand filters. A clear well below provides filtered water storage. The pump room, which is adjacent to the filter area and at the same floor level, contains four high-lift pumps and a balcony that provides space for motor controls and access to the east entrance door. There are two diesel generators located on the same level as the pumps and filters. There are below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: Lead-based paint is potentially present due to the age of the building.

Known Releases of Contaminants: There are floor stains near the diesel generators that may have resulted from fuel or hydraulic oil leakage.

Contaminants of Potential Concern: Lead associated with lead-based paint

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 7,875 cu ft; 559 tons

A.8.3 X-611D – RECARBONIZATION INSTRUMENTATION BUILDING

Description of Building: The X-611D Recarbonization Instrument Building, which was built in 1979, is a 200-sq ft metal frame and siding structure that sits on a concrete slab. This building houses controls and equipment for the addition of carbon dioxide to water prior to filtering in the X-611C Filter Building. There are no below-grade structures associated with the building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Fluorescent light fixtures may contain ballasts with PCBs and bulbs with mercury due to the age of the building (DOE 1993, TPMC 2006).

- Lead-based paint may have been used on internal and external surfaces due to the age of the building (DOE 1993, TPMC 2006).

Known Releases of Contaminants:

- Numerous floor stains are visible due to corrosion and grease.
- There are numerous roof leaks that could potentially result in contaminant migration.

Contaminants of Potential Concern: PCBs, mercury and lead

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 1,871 cu ft; 110 tons

A.8.4 X-611E – CLEAR WELL AND CHLORINE BUILDING

Description of Building: The X-611E Clear Well and Chlorine Building, constructed in 1996, is a single-story, cement block structure on a concrete slab. Water is chlorinated prior to distribution into the sanitary water system/low-pressure fire water system in this building. A below-grade clear well is utilized to allow water to meet regulatory retention time requirements.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Chlorine is stored in cylinders within the building but is assumed to be removed prior to the initiation of decontamination and decommisioning.
- Due to the age of the building, fluorescent light fixtures may contain ballasts with PCBs and bulbs with mercury (DOE 1993, TPMC 2006).
- Due to the age of the building, lead-based paint may have been applied to the walls of the building.

Known Releases of Contaminants: Paint, potentially containing lead, is peeling from exterior and interior surfaces.

Contaminants of Potential Concern: Lead, ACM, PCBs, and mercury.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 3,178 cu ft; 170 tons

A.9 GROUP R9

A.9.1 X-108H – PIKE AVENUE PORTAL

Description of Building: The X-108H Pike Avenue Portal is a 100-sq ft wooden building sitting on a concrete slab that has been used as a security check point since it was built in 1976. There is no water known to be supplied to this building or sanitary sewer connections (DOE 1993, TPMC 2006). Personnel working in the X-330 and X-333 Process Buildings, and in the X-340 Complex enter and exit through this portal. There are no USTs or below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Due to the age of the building, lead-based paint may be present (TPMC 2006).
- Fluorescent light fixtures may contain PCBs in their ballasts and have mercury in their tubes (TPMC 2006).
- A pole-mounted transformer is assumed to contain PCBs (DOE 1993, TPMC 2006).
- Floor tile is assumed to be ACM.

Known Releases of Contaminants: Although there are no known documented releases of contaminants from this building, paint that is assumed to be lead-based is peeling from exterior and interior surfaces and the ceiling shows signs of deterioration.

Contaminants of Potential Concern: ACM, lead, PCBs, and mercury.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 1,660 cu ft; 59 tons

A.9.2 X-735A – LANDFILL UTILITY BUILDING

Description of Building: The X-735A Landfill Utility Building is a 5,200-sf steel frame and siding structure with a concrete floor used in support of X-735 Landfill operations. Constructed in 1980, the building is used for heavy equipment storage and repair, and office space. A lunchroom, restroom, and shower facilities are also part of the building. A floor drain in the vehicle maintenance area discharges to a sediment trap at the southern end. A 4,000-gal diesel fuel UST along with a dispenser pump is located immediately south of the building. The building's septic and wastewater discharge to a septic system and leach field. There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Fluorescent light fixtures could potentially contain PCBs in the ballasts and mercury in the bulbs.
- Diesel fuel and oil leakage associated with equipment storage and repair could be potential hazards.

Known Releases of Contaminants: None

Contaminants of Potential Concern: PCBs and mercury.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 11,690 cu ft; 478 tons

A.10 GROUP R10

A.10.1 X-104 – GUARD HEADQUARTERS

Description of Building: The X-104 Guard Headquarters is a 10,600-sq ft concrete and concrete block office building built in 1954. This building is used for routine protective forces activities and contains offices, a training room, a physical fitness room, locker rooms, a locksmith shop, weapons cleaning area, a kitchen, a lunch room, restrooms, and storage lockers for guard equipment. It also contains an emergency generator with an associated diesel fuel AST. Water is supplied to the building for drinking, showers, and restroom usage, and wastewater (floor drains and drains) from the building is discharged into the sanitary sewer system.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Four storage areas are located in the building: one for storing aerosol cans, fluorescent and incandescent light bulbs, and nickel-cadmium batteries; one for storing metal shavings from the locksmith section; and two for storing oily, lead-contaminated rags used in weapons cleaning and maintenance (DOE 1993).

- ACM is reported to be in the thermal system insulation on pipelines in the building (DOE 1993, TPMC 2006). ACM may also be located in the floor tiles.

- Documentation indicates the building was coated with potential lead-based paint (DOE 1993, TPMC 2006).

- The building contains fluorescent lighting fixtures that may contain ballasts with PCBs and light bulbs with mercury.

Known Releases of Contaminants:

- Recent walkdowns show paint peeling from exterior surfaces and interior ceiling deterioration.

- There are floor stains associated with diesel fuel leakage around the emergency generator (DOE 1993).

Contaminants of Potential Concern: ACM, lead, PCBs, and mercury

Previous Removal Actions or Investigations: A 37-year old UST (Tank # 104) was removed in 1991. No leaks or releases were observed from the tank.

Estimated Waste Volume and Weight: 49,935 cu ft; 2,998 tons

A.10.2 X-612 – ELEVATED STORAGE TANK

Description of Building: The X-612 Elevated Storage Tank stores sanitary water for the Sanitary Fire Water System and for general use. This tank provides a storage capacity of 250,000 gal of water at an elevation 170 ft above the foundation. The tank has a standard-type cylindrical steel construction with ellipsoidal top and bottom, is painted in alternate bands of white and orange, and is equipped with ruby aircraft warning lights. A combination valve pit and concrete foundation at the base of the tank riser houses the valves required for the connections to the piping grid and flow meter orifice. There is an altitude valve located in the tank to prevent an overflow. There are six steel legs in addition to the stand-pipe riser supporting the tank. Each leg is supported on a concrete pier-type footing and it is assumed that each leg has a steel base plate attached to anchor bolts embedded in the concrete at the top of the piers. There is no structural slab below this tank. When the foundations were built in August 1953, the contractor excavated approximately 420 cy to construct the footings, valve pit, and concrete foundation piers totaling 175 cy.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: The original paint and at least one repaint was lead-based paint.

Known Releases of Contaminants: None

Contaminants of Potential Concern: Lead associated with lead-based paint

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 918 cu ft; 118 tons

A.10.3 X-640-1 – FIRE WATER PUMP HOUSE

Description of Building: The X-640-1 Fire Water Pump House, which was constructed in 1960, is a single-story, 1,600-sq ft masonry building with a concrete floor that contains fire water pumps and a diesel generator. A remediated 500-gal UST was replaced with a 400-500-gal AST on a pedestal. The pump house is part of the High-Pressure Fire Water (HPFW) System that supplies water to sprinkler systems in X-326, X-330, and X-333, remaining cooling towers, X-343, and American Centrifuge Plant (ACP) site. There are below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Thermal insulation contains ACM (DOE 1993).
- Lead-based paint may have been used on surfaces (DOE 1993).

Known Releases of Contaminants: None

Contaminants of Potential Concern: ACM and lead

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 3,567 cu ft; 200 tons

A.10.4 X-640-2 – ELEVATED STORAGE TANK

Description of Building: The X-640-2 Elevated Storage Tank is a 300,000-gal, 265-ft-high elevated steel tank that is part of the HPFW system. This tank supplies water to sprinkler systems in X-326, X-330, X-333, remaining cooling towers, X-343, and the ACP site. The tank has a combination valve pit and concrete foundation at its base.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: The tank was painted red and white in the summer of 1992. Due to the lack of documentation, the red paint must be considered potentially lead based (DOE 1993).

Known Releases of Contaminants: None

Contaminants of Potential Concern: Lead

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 1,095 cu ft; 139 tons

A.11 GROUP R11

A.11.1 X-614A – SEWAGE PUMPING STATION

Description of Building: The X-614A Sewage Pumping Station is located in the outfall of the sanitary sewer system to pump sanitary wastes from the plant area collection system into a force main that discharges into the X-6619 Sewage Treatment Plant.

This building, located just south of the X-330 Process Building, consists of an underground pumping vault, with a concrete slab top; the latter forms the floor of a pump house where the pumping equipment motors and controls are installed.

The concrete pumping vault, which is 15 ft × 29 ft × approximately 27-ft deep, is divided into a dry well section containing the pumps, valves, and piping, and the wet well, which constitutes a reservoir for receiving and temporarily storing sewage for intermittent pump operations.

The pump house is a concrete block building 15 ft square and 9 ft high. A single entrance door provides access to the building, and manholes in the floor provide access to the wet and dry wells below.

Known or Potential Radiological Hazards: Both above- and below-grade structures are radiologically contaminated.

Known or Potential Chemical Hazards:

- Due to the age of the building, lead-based paint is assumed to have been used on exterior and interior surfaces.
- Sewage is assumed to contain hazardous materials such as heavy metals, volatiles, semivolatiles, and biological agents (e.g., E. coli, etc.).
- Float switches in the wet well may contain mercury.

Known Releases of Contaminants: The building has been radiologically contaminated as a result of contaminant releases from other buildings which are serviced by the sewage system. Contaminants have been transferred from the below-grade structure and equipment to the above-grade structure and equipment.

Contaminants of Potential Concern:

- Radionuclides associated with sewage
- Lead associated with lead-based paint
- Mercury associated with float switches
- Heavy metals, volatiles, semivolatiles, and biological agents associated with sewage.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 883 cu ft; 50 tons

A.11.2 X-614B – SEWAGE PUMPING STATION

Description of Building: The X-614B Sewage Pumping Station, built in 1954, provides a sump where sanitary wastes from the buildings in the north portion of the site are drained. This station also contains pumping facilities for discharging the sewage at a higher elevation into the main sewer system.

The pumping station, located northeast of the X-330 Process Building, consists of an underground reinforced concrete vault 7.5 ft square and 22.5 ft deep, a manhole in the top, connections to the sewers, and pumping equipment mounted on a concrete platform in the upper portion of the structure. The lower portion of the vault contains a sump and sewage storage chamber for intermittent operation.

Known or Potential Radiological Hazards: Both above- and below-grade structures are radiologically contaminated.

Known or Potential Chemical Hazards:

- Due to the age of the building, lead-based paint is assumed to have been used on exterior and interior surfaces.
- Sewage is assumed to contain hazardous materials such as heavy metals, volatiles, semi-volatiles, and biological agents (e.g., E. coli, etc.).
- Float switches in the wet well may contain mercury.

Known Releases of Contaminants: The building has been radiologically contaminated as a result of contaminant releases from other buildings which are serviced by the sewage system. Contaminants have been transferred from the below-grade structure and equipment to the above-grade structure and equipment.

Contaminants of Potential Concern:

- Radionuclides associated with sewage
- Lead associated with lead-based paint
- Mercury associated with float switches
- Heavy metals, volatiles, semivolatiles, and biological agents associated with sewage.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 883 cu ft; 50 tons

A.11.3 X-618 – NORTH HOLDING POND STORAGE BUILDING

Description of Building: The X-618 North Holding Pond Storage Building is a 100-sq ft, steel-framed "Butler"-type building on a concrete pad. This building was built in 1981 and was once used to store emergency response equipment, such as sampling materials, skimmers, and floating booms for the Environmental Control Department. The building was upgraded in 1989 and now contains monitoring equipment for the X-230L North Holding Pond. The monitoring equipment continuously samples the pond for temperature, pH, and flow rate, and provides the means for samplers to collect composite samples for total suspended solids and metals. Water is pumped by a submerged pump from the North Holding Pond through piping to the X-618 building for sampling, and is then returned to the holding pond. A floor drain in the building contains a conduit through which the piping runs; therefore, any spills or releases to the building would be returned back to the North Holding Pond via this drain. The building has plastic foam insulation, fluorescent lights, and electric heat. A refrigeration unit is also contained within the building to hold composite samples that have been collected. There are no known USTs, ASTs, or below-grade structures associated with the building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Fluorescent light fixtures may contain ballasts with PCBs and bulbs with mercury (DOE 1993, TPMC 2006).
- Surfaces may be painted with lead-based paint (DOE 1993, TPMC 2006).

Known Releases of Contaminants: None

Contaminants of Potential Concern: PCBs, lead, and mercury.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 2,119 cu ft; 119 tons

A.11.4 X-750 – MOBILE EQUIPMENT MAINTENANCE SHOP

Description of Building: The X-750 Mobile Equipment Maintenance Shop is a 15,500-sq ft building of masonry construction with a concrete floor. This building has been in operation as the main on-site fueling station since 1953. It is also used to maintain the mobile equipment fleet in-plant operations. The building has a vehicle repair shop, refueling station, tire change bay, wash bay, and oil change bay. The building also houses offices, restrooms, and a lunchroom (DOE 2003, TPMC 2006). There are two USTs associated with the building, including a 20,000-gal gasoline fuel UST and a 20,000-gal diesel fuel UST. These fuels are used for dispensing into mobile equipment on site (DOE 1993).

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Vehicle maintenance chemicals such as gasoline, diesel, and alcohol fuels, lubricating oils, motor oils, cutting oils, greases, antifreeze, solvents, carburetor cleaner, kerosene, tires, batteries, pesticides, and janitorial supplies, and battery acid are used and stored in this building (DOE 1993, TPMC 2006).
- PCBs are located in ventilation duct gaskets and potentially in fluorescent light fixture ballasts (DOE 1993, TPMC 2006).
- Mercury is potentially contained in fluorescent light bulbs (DOE 1993, TPMC 2006).
- ACM is located in piping insulation throughout the building (DOE 1993, TPMC 2006).
- Lead-based paint is suspected due to the age of the building (DOE 1993, TPMC 2006).
- Drained oil is contained in 55-gal drums (TPMC 2006).

Known Releases of Contaminants:

- Numerous fuel, oil, and grease stains on the floor have been observed.
- There is soil contamination associated with former leaking USTs and contamination of surrounding pavements due to leaking vehicle fluids.

Contaminants of Potential Concern: PCBs, mercury, ACM, lead, solvents, pesticides and acids

Previous Removal Actions or Investigations: Several gasoline and diesel USTs have been removed due to leakage.

Estimated Waste Volume and Weight: 57,952 cu ft; 1,192 tons

A.11.5 X-750A – GARAGE STORAGE BUILDING

Description of Building: The X-750A Garage Storage Building is a 500-sq ft, steel-framed structure that stores heavy equipment parts, tires, and miscellaneous parts (DOE 1993, TPMC 2006). There are no wastewater discharges from the building other than stormwater runoff. Water is not supplied to the building. There are no USTs, ASTs, or below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards:

- Lead-based paint may be present based on the age of the building (DOE 1993, TPMC 2006).
- Fluorescent light fixtures may have ballasts that contain PCBs and bulbs that may contain mercury (DOE 1993, TPMC 2006).

Known Releases of Contaminants: None

Contaminants of Potential Concern: Lead, PCBs, and mercury

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 1,590 cf; 74 tons

A.12 GROUP R12

A.12.1 X-106C – NEW FIRE TRAINING BUILDING

Description of Building: The X-106C New Fire Training Facility is a 2-story, all-steel structure on a concrete slab with an outside stairway to a partial third level. The building is used by on-site Fire Protection personnel to comply with State required training. A below-grade water tank associated with the X-106B Old Fire Training Building that has been demolished is located approximately 100 ft to the south of the X-106C building. The tank is approximately 12 ft deep, 12 ft wide, and 6 ft long. The tank is used by the Fire Department to check the pumps on pumper trucks.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: None

Known Releases of Contaminants: None

Contaminants of Potential Concern: None

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 3,779 cu ft; 227 tons

A.12.2 X-109B – PERSONNEL MONITORING STATION

Description of Building: The X-109B Personnel Monitoring Station is a 120-sq ft, steel-framed building constructed with steel siding in 2006. This building has no water supply. Personnel monitoring stations are used as assembly points for personnel evacuating buildings served by the CAAS, if alarm systems sound or if PA system announcements are initiated, and have been used routinely to conduct evacuation drills. There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: None

Known or Potential Chemical Hazards: The pole-mounted transformer associated with this building may contain PCBs.

Known Releases of Contaminants: None

Contaminants of Potential Concern: PCBs associated with pole-mounted transformer

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 2,189 cu ft; 83 tons

A.12.3 X-343 – FEED VAPORIZATION AND SAMPLING BUILDING

Description of Building: The X-343 Feed Vaporization and Sampling Facility was constructed in 1981 and was used to vaporize uranium hexafluoride for feed for the diffusion cascade, sampling uranium hexafluoride cylinders prior to feeding them to the process buildings, and removal of technicium-99 from uranium hexafluoride chemical trapping. This building was the receiving point for all inbound uranium hexafluoride feed material and the shipping point for the empty cylinders after having been fed to the diffusion cascade.

The structure of this building consists of steel framing with exterior cement-asbestos (transite) siding set on a concrete slab. The building occupies a total floor area of approximately 18,500 sq ft. The building features hanger-type doors in the north and south walls. A row of single-story rooms, offices, a control room, locker rooms, electrical and mechanical rooms, and a janitor closet are along the west wall of the building. Recirculating heating water from the X-633 Pump House/X-333 recirculating cooling water system was used to heat this building until the diffusion cascade was shut down. Currently, the building is heated with steam and electric space heaters. A lower level is located on the east side of the building that extends under the autoclave heads for access to autoclave drain piping. The building is connected to the process buildings through tie-lines that pass through a heated duct between X-343 and X-333 Process Building. A control room is available to monitor the process.

The building contains seven steam-heated containment autoclaves. Three of the autoclaves are 84 in. in diameter and are equipped with rollers, and four of the autoclaves are 72 in. in diameter and are not equipped with rollers. These autoclaves were designed for feed vaporization only. The building is equipped with three 20-ton bridge cranes that were used to place cylinders into the autoclaves as well as retrieve cylinders from storage and place into storage.

Known or Potential Radiological Hazards:

- The primary radiological contaminants of concern are uranium and technicium-99. Other radionuclides that were introduced to the diffusion cascade include plutonium-239 and neptunium-237.

- Due to the presence of uranium hexafluoride feed cylinders in this building, the potential for radionuclide contamination exists. Valves on cylinders of uranium hexafluoride occasionally malfunctioned and resulted in small releases (DOE 1993, TPMC 2006).

- Floor areas around the autoclave and valving manifolds are radiologically contaminated (DOE 1993, TPMC 2006).

- Routine maintenance activities performed on the autoclaves resulted in the generation of radioactive scrap metal waste (DOE 1993).

Known or Potential Chemical Hazards:

- Raw materials or products such as adhesive spray and nitrocellulose lacquer (TPMC 2006).
- Janitorial and maintenance supplies such as penetrating oil, hydraulic oil, and starting fluid (TPMC 2006).
- Acetylene cylinders (TPMC 2006).
- Lead-based paint may be present (TPMC 2006).
- Fluorescent light fixture ballasts may contain PCBs and the tubes may contain mercury (TPMC 2006).
- Freon is present in cold recovery uranium recovery equipment (TPMC 2006).

Known Releases of Contaminants:

- Uranium hexafluoride cylinder valve maintenance and pigtail connection activities occasionally resulted in small releases of radiological contamination. The highest potential for radiological contamination exists in the high bay area (DOE 1993, TPMC 2006).
- The building is heated with the site's recirculating heating water system. A rupture in the recirculating heating water system resulted in possible chromate contamination of the piping system in the building, however, no written documentation was available for confirmation (DOE 1993).

Contaminants of Potential Concern:

- Radionuclides, including mainly uranium and smaller amounts of technicium-99, plutonium-239, and neptunium-237 associated with releases.
- Lead associated with lead-based paint.
- Mercury associated with fluorescent bulbs.
- PCBs associated with fluorescent light fixture ballasts.
- Chromate associated with recirculating heating water system rupture.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 110,036 cu ft; 8,354 tons

A.12.4 X-744G – BULK STORAGE BUILDING

Description of Building: The X-744G Bulk Storage Building is a steel-framed building with a concrete floor. The building is divided into an eastern section of approximately 49,000 sq ft and a western section of approximately 37,000 sq ft. Across the north side of the building is an open, but covered, area of 20,000 sq ft called the "north drum storage area". There is also a 60-ft-high bay area inside the building. This building was built in 1956 for use as a pipe yard for the assembly of cascades for the process buildings. Since 1957, the warehouse has been used for storage of uranium hexafluoride in 5-, 8-, and 12-in. cylinders, uranium oxides, nitrates (from X-705 Decontamination Building processes and off-site sources), uranium solutions, contaminated cascade trapping materials, contaminated solid scrap, contaminated wastes (oil adsorbent and oil-soaked cleaning rags from the process buildings), and special nuclear material. This building was also used for sampling solid contaminated scrap. The building housed an aluminum smelter that operated from the late 1960s until 1981, and was used for melting aluminum parts into aluminum ingots. The building contains a sealed glovebox used for homogenizing and sampling alumina and sodium fluoride. In August 1992, all RCRA hazardous wastes were removed from the building (DOE 1993). The building is currently the Uranium Management Center for staging and shipping various types of uranium material and container types.

Potable water is supplied to the building and sanitary waste discharges to the sanitary sewer. There are no floor drains in the storage areas. Heat is provided by an oil furnace and the office is air conditioned. There is a 2,000-gal diesel fuel tank located south of the building (DOE 1993), but there are no known USTs associated with the building. There are no below-grade structures associated with this building.

Known or Potential Radiological Hazards: The floors are beta contaminated (fixed contamination). Upon visual assessment, it appears that several coats of sealant/varnish have been applied to contain the contamination (DOE 1993).

Known or Potential Chemical Hazards:

- Due to the age of the building lead-based paint may have been used to paint exterior and interior surfaces. The floors are marked with yellow truck lanes, which may contain lead since most caution colors of paint have lead content.

- The building contains fluorescent light fixtures that have ballasts that may contain PCBs and bulbs containing mercury. The building also utilizes mercury vapor lighting.

- There are five pole-mounted transformers outside the building that may be contaminated with PCBs.

- A wide variety of chemicals have been stored and/or processed in this building.

Known Releases of Contaminants:

- The floors of the building are beta contaminated (fixed contamination). Upon visual assessment, it appears several coats of sealant/varnish have been applied to contain the contamination (DOE 1993).

- There are numerous spill stains on the floor.

Contaminants of Potential Concern: Radionuclides, ACM, lead, PCBs and mercury

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 490,379 cu ft; 19,691 tons

A.12.5 X-744L – STORES AND MAINTENANCE WAREHOUSE

Description of Building: The X-744L Stores and Maintenance Warehouse is a 53,300-sq ft prefabricated structure built in 1983 that consists of a metal roof, metal walls, steel beams, and a concrete slab on a graded floor. The building exterior walls measure 150 ft × 150 ft (DOE 1993). The building is separated into north and south sections. The north half of the building is used for bulk storage of new and surplus equipment and supplies. The south section, which is separated from the north section by a chain-link wall and is tightly controlled and monitored, is a storage area for compressor components, valve components, large equipment, process and non-process equipment used for general plant support, and radiologically contaminated material and equipment.

Although the building is supported by electric utilities and a sprinkler system, there are no sanitary sewer connections or drinking water at the building. There is no sanitary discharge associated with this building and no other wastewater discharge other than the storm water runoff. There are no known ASTs, USTs, or below-grade structures associated with the building.

Known or Potential Radiological Hazards: Radiologically contaminated equipment is located in the south portion of the building within CCZs (DOE 1993, TPMC 2006, 2011 photographs). The northern portion of the building has a 2-ft × 3-ft area that is radiologically contaminated (DOE 1993).

Known or Potential Chemical Hazards:

- There is a potential for exposure to mercury from releases in the southern portion of the building (DOE 1993).
- There is no ACM in the building according to existing documentation (DOE 1993).
- Paints (red, yellow, and orange) used to indicate “caution” may have some lead content (DOE 1993).
- Although no other chemical hazards have been reported, there may be additional hazards due to the varied nature of materials and equipment stored in the building.

Known Releases of Contaminants:

- A mercury manometer was broken in March 1990 in the south section of the building. The amount of mercury was not a reportable quantity and the spill was cleaned up the same day (DOE 1993).
- In September 1990, a mercury manometer was moved and mercury vapor was possibly released (DOE 1993).

Contaminants of Potential Concern: Lead, mercury, and radionuclides.

Previous Removal Actions or Investigations: None

Estimated Waste Volume and Weight: 213,194 cu ft; 8,633 tons

A.13 REFERENCES

DOE 1993. *Report for Environmental Audit Supporting Transition of the Gaseous Diffusion Plants to the United States Enrichment Corporation, Appendix A, Volumes I and II: Portsmouth Sites/Facilities Reports,* U.S. Department of Energy, Portsmouth, OH, June.

TPMC 2006. *Facility Condition Survey of Portsmouth Gaseous Diffusion Plant Facilities, Piketon, Ohio,* TPMC/PORTS-59/R1, Theta Pro2Serve Management Company, LLC August.

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APPENDIX B: APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS AND TO-BE-CONSIDERED GUIDANCE FOR PLANT SUPPORT BUILDINGS AND STRUCTURES ENGINEERING EVALUATION/COST ANALYSIS

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TABLES

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ACRONYMS

ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	*Code of Federal Regulation*
D&D	decontamination and decommissioning
DFF&O	Director's Final Findings and Orders
DOE	U.S. Department of Energy
EE/CA	engineering evaluation/cost assessment
EPA	U.S. Environmental Protection Agency
FS	feasibility study
HEU	highly enriched uranium
LPP	LATA/Parallax Portsmouth, LLC
NCP	National Oil and Hazardous Substances Contingency Plan
NRCE	National Register Criteria for Evaluation
OHI	Ohio Historic Inventory Form
Ohio EPA	Ohio Environmental Protection Agency
OHPO	Ohio Historic Preservation Officer
OSWER	U.S. Office of Solid Waste and Emergency Response
PORTS	Portsmouth Gaseous Diffusion Plant
RI	remedial investigation
TBC	to-be-considered [guidance]
T&E	threatened and endangered

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B.1 INTRODUCTION

In accordance with the requirements of the Director's Final Findings and Orders (DFF&O) and pursuant to Ohio's laws and regulations, and utilizing 40 *Code of Federal Regulations* (*CFR*) Section 300.415(j) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as a framework, on-site removal actions are required to attain applicable or relevant and appropriate requirements (ARARs) to the extent practicable, considering the exigencies of the situation. 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), substantive requirements of other advisories, criteria, or guidance may be considered in determining remedies (to-be-considered [TBC] category).

As defined in paragraph 5.e of the DFF&O, decontamination and decommissioning (D&D) activities include deactivation of equipment; removal and cleaning of process residues and deposits from equipment structures and piping; dismantlement, demolition, and removal of equipment, structures, piping, building contents, concrete foundations, and any residual soil which adheres to the foregoing or otherwise must be excavated as part of D&D activities; treatment, disposition, and disposal, off-site or in a secure on-site disposal cell the above listed materials. The proposed removal action alternatives include: (Alternative 1) no action; (Alternative 2) remove structures, off-site disposition of equipment and materials; and (Alternative 2a) remove structures, on- and off-site disposition of equipment and materials. The proposed removal action alternative (i.e., other than no action) would comply with all identified ARARs/TBCs.

Paragraph 9.a of the DFF&O provides that portions of response actions conducted entirely on-site pursuant to Work Plans or plans concurred with or approved by Ohio Environmental Protection Agency (Ohio EPA) under the Order can be conducted pursuant to Section 121(e)(1) of CERCLA, 42 *United States Code* Section 9621. Section 121(e)(1) specifically provides that no federal, state, or local permit shall be required for the portion of any removal or remedial action conducted entirely as an on-site response action. In addition to "permits", the U.S. Environmental Protection Agency (EPA) has interpreted this section broadly to cover: "all administrative provisions from other laws, such as recordkeeping, consultation, and reporting requirements. In other words, administrative requirements do not apply to on-site response actions." (Office of Solid Waste and Emergency Response [OSWER] 9205.5-10A). Those portions of the removal action that are taken off site are subject to both the substantive and administrative requirements of applicable laws. Only the substantive requirements in the ARARs and TBCs in the table in this appendix shall be binding for entirely on-site actions.

ARARs are typically divided into three groups: chemical-specific, location-specific, and action-specific. Pursuant to EPA guidance, there are no ARARs invoked for a "no action" alternative. Tables B.1 and B.2 group the location- and action-specific ARARs/TBCs, respectively, for the D&D removal action. There were no chemical-specific ARARs identified. In some cases, the conditions associated with the prerequisite requirements have not been confirmed to be present; if the subject condition is encountered during implementation of the action, then the specified ARAR would apply. A brief description of key ARAR/TBC topics follows.

B.2 CHEMICAL-SPECIFIC ARARS/TBCS

Chemical-specific ARARs provide health or risk-based concentration limits or discharge limitations in various environmental media (i.e., surface water, groundwater, soil, and air) for specific hazardous substances, pollutants, or contaminants. The scope of this action is D&D of facilities and does not include remediation of environmental media, therefore, there are no chemical-specific ARARs triggered.

B.3 LOCATION-SPECIFIC ARARS/TBCS

Location-specific requirements establish restrictions on permissible concentrations of hazardous substances or establish requirements for how activities will be conducted because they are in special locations (e.g., wetlands, floodplains, critical habitats, streams). The location-specific ARARs for the protection of historic properties are listed in Table B.1.

B.3.1 FLOODPLAINS AND WETLANDS

None of the activities associated with the removal action alternatives would be conducted within any floodplain. In addition, no wetlands are present at or near the vicinity of the buildings. Thus, no impacts to either floodplains or wetlands would result from either of the alternatives considered for this proposed removal action.

B.3.2 THREATENED AND ENDANGERED SPECIES

Neither of the removal action alternatives would adversely impact any federally or state-listed threatened and endangered (T&E) species located or seen at the Portsmouth Gaseous Diffusion Plant (PORTS). Consequently, none of the requirements for protection of T&E species or critical habitat are included as ARARs.

B.3.3 CULTURAL RESOURCES

Cultural resources include prehistoric or historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason. When these resources meet any one of the National Register Criteria for Evaluation (36 *CFR* Part 60.4), they may be termed historic properties and thereby are eligible for inclusion on the National Register of Historic Places.

In order to identify architectural resources, a systematic and comprehensive survey of PORTS was completed. As part of the architectural survey, an Ohio Historic Inventory Form (OHI) was completed for each of the 196 resources. The OHI forms were submitted to and recorded by the Ohio Historic Preservation Officer (OHPO). The architectural inventory report documenting the results of the survey was accepted by the OHPO in March 2011 (U.S. Department of Energy [DOE] 2011). Information about the buildings in this Engineering Evaluation/Cost Assessment (EE/CA) can be found in the inventory report.

The proposed activities are described in Section 4.1 of this EE/CA.

The project area (area of potential effect) for this proposed undertaking includes facilities that are located throughout the PORTS site and the areas in close proximity to each of the structures, all of which are within Perimeter Road. Based on the results of the Phase I Archaeological Survey at PORTS, it was determined that all of the area within Perimeter Road was disturbed during plant construction. Therefore, no archaeological resources would be impacted during a removal action.

PORTS' architectural resources have been divided into three broad categories based on their original function: Cold War-era core processing facilities; Cold War-era processing support facilities; and Non-Cold War-era mission facilities.

- Cold War-era core processing facilities: These eligible historic properties are character defining resources. They are unique to the production of highly enriched uranium (HEU) by the gaseous diffusion process (PORTS historic mission). These facilities are central to telling the PORTS' Cold

War-era story. These properties are eligible under Criterion A of the National Register Criteria for Evaluation (NRCE). Mitigation measures are typically identified for this category of facilities, but none are included in the scope of this EE/CA.

- Cold War-era processing support facilities: These eligible properties were essential to the HEU production process. They were, however, not unique to uranium enrichment facilities and could be found on other large industrial sites. These properties are eligible under Criterion A of the NRCE. Mitigation measures are identified for this category of facilities.

- Non-Cold War era mission facilities: These are resources that were not specifically associated with the Cold War-era mission. This category can be further divided into two subcategories: resources that date to the Cold War-era, but were not specifically associated with the enrichment process; and resources that were (or are) associated with other missions. These resources may date after the Cold War-era or they may date to the era but not be associated with the Cold War-era mission. For example, Environmental Management facilities are in this category. These facilities are not considered to be eligible.

The following 10 Cold War Mission "processing support resources" are being evaluated for demolition under this EE/CA:

- The X-100 Administration Building
- The X-104 Guard Headquarters
- A series of buildings associated with the X-530 switchyard complex
    - The X-530B Switch House
    - The X-530C Test and Repair Building
    - The X-530D Oil House
    - The X-530E Valve House
- The X-600 Steam Plant
- The X-611 Water Treatment Plant
- The X-612 Elevated Storage Tank
- The X-750 Mobile Equipment Maintenance Shop.

Three additional facilities being evaluated for demolition in the EE/CA are the best "representatives" of a type of general support facility to the uranium enrichment process:

- The X-109A Personnel Monitoring Station
- The X-614-A Sewage Pumping Station
- The X-744H Warehouse.

The documentation level for the 10 core processing support facilities and the three "representative" facilities described above will consist of: a detailed written history and description; a compendium of copies of historic documentation including photographs, floor plans, equipment layout, and training manuals; and new photography and interpretive graphics, as appropriate. In most cases, high-quality, detailed photographs and drawings of the interior and exterior of these resources as well as their floor plans and arrangement of their equipment already exist in PORTS records. After the available historic documentation is analyzed, it will be determined if new photography and graphic documentation is needed to preserve the significance of these resources.

The balance of the structures proposed for demolition in the EE/CA are indistinct and non-representative support facilities (e.g., trailers, portals, shelters, sewage lift stations, etc.) that provided a variety of functions to the gaseous diffusion process. These non-distinct support facilities are utilitarian and not unique to the PORTS Cold War mission.

Information that is gathered for implementation of any proposed mitigation measures must be deemed suitable for public release before it can be made available. Should aspects of the proposed measures include items which have classification concerns, DOE will appropriately maintain and control those materials and will review them periodically to ascertain whether or not they may be added to the collection of publicly available information.

In addition to the specific measures described above for the processing support resources and the core processing resources, DOE has also proposed a comprehensive interpretation effort for the DOE-built environment at PORTS. The comprehensive measures are found in the Remedial Investigation (RI)/ Feasibility Study (FS) Work Plan for the Process Buildings and Complex Facilities D&D Evaluation Project (hereinafter referred to as the Process Buildings project). The measures agreed to and memorialized in the DFF&O RI/FS/Proposed Plan and subsequent record(s) of decision for the Process Buildings project also provide the comprehensive measures for the facilities proposed for removal in this EE/CA and the DOE PORTS built environment overall.

B.4 ACTION-SPECIFIC ARARS/TBCS

Action-specific ARARs include operation, performance, and design requirements or limitations based on the waste types, media, and removal/remedial activities. The ARARs for the D&D alternatives include requirements related to waste characterization, scrap metal removal, decontamination, waste storage, treatment and disposal, and transportation of hazardous materials.

B.4.1 BUILDING REMOVAL

The D&D alternatives include removal of scrap metal, equipment, infrastructure, any waste materials and debris, and, where necessary, stabilization of foundation concrete surfaces, etc. Requirements under the Clean Air Act of 1970, as amended, for control of asbestos and/or radionuclide emissions included in Table B.2 would have to be met. Requirements for the closure of tanks containing hazardous (i.e., acids used for cooling water treatment) materials would have to be met.

B.4.2 WASTE MANAGEMENT

Building removal activities may result in the generation of Resource Conservation and Recovery Act of 1976, as amended, solid or hazardous waste and asbestos-containing waste materials.

Although some characterization has been performed, additional waste streams may be identified during implementation of the removal action.

All primary wastes (e.g., D&D debris) and secondary wastes (e.g., contaminated personal protective equipment, decontamination wastes) generated during building remediation activities must be appropriately characterized and managed in accordance with appropriate state of Ohio laws and regulations for hazardous and solid waste, the federal Toxic Substances Control Act of 1976, DOE Order requirements, or other requirements as specified in the ARARs tables. Hazardous waste determinations will be made based on available process knowledge and sampling/analysis results. Assuming no listed hazardous wastes are present and the sample does not exhibit a hazardous characteristic, the debris will be categorized as nonhazardous. Requirements associated with the characterization, storage, treatment, and

disposal of the aforementioned waste types are listed in Table B.2. Hazardous and other waste may be accumulated and stored in appropriate short-term storage areas at PORTS. Long-term storage of waste is not anticipated. The *Closure Performance Review Guidance* will be consulted if a 90-day storage area in any of the buildings needs to be closed.

B.4.3 TRANSPORTATION

As noted in the DFF&O Paragraph 9.a, the NCP at 40 *CFR* 300.400(e)(1) defines "on-site" as meaning "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for the implementation of the response action." Off-site disposal, 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 normally be labeled relevant and appropriate under the ARARs process.

Any wastes transferred off site or transported in commerce along public right-of-ways must meet the requirements summarized on Table B.2, depending on the type of waste (e.g., hazardous, low-level, mixed, or solid waste). These requirements include packaging, labeling, marking, manifesting, and placarding for hazardous materials in accordance with 49 *CFR* 170-180 *et seq.* Transport of D&D wastes along roads within the PORTS site must meet the requirements of the *Transportation Safety Document for the On-Site Transfer of Hazardous Material at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (LATA/Parallax Portsmouth, LLC [LPP] 2008).

In addition, EPA in 40 CFR 300.440 requires that the off-site transfer of any hazardous substance, pollutant, or contaminant generated during response actions be to a treatment, storage, or disposal facility that complies with applicable federal and state laws and has been approved by EPA for acceptance of such waste (see also the "Off-Site Rule" at 40 *CFR* 300.440 *et seq.*). Accordingly, DOE will verify with the appropriate EPA regional contact that any needed off-site facility is acceptable for receipt of these D&D wastes before transfer.

B.5 REFERENCES

DOE 2011. *National Historic Preservation Act Section 110 Survey of Architectural Properties at the Portsmouth Gaseous Diffusion Plant in Scioto and Seal Townships, Piketon, Ohio*, DOE/PPPO/03-0147&D0, January.

LPP 2008. *Transportation Safety Document for the On-site Transfer of Hazardous Material at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, LPP-0021/R3, LATA/Parallax Portsmouth, LLC, November.

OSWER 1998. *RCRA, Superfund & EPCRA Hotline Training Module, Introduction to: Applicable or Relevant and Appropriate Requirements*, OSWER Directive 9205.5-10A, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C., June.

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Table B.1. Location-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio

Location	Requirements[a]	Prerequisite	Citation
	Cultural resources		
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 historical properties listed or eligible for inclusion on the National Register of Historic Places—**applicable**	16 USC 470f 36 *CFR* 800.1(a)
	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 alterations or demolition of a historic property—**applicable**	16 USC 470h-2(b)

[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.

ARAR = applicable or relevant and appropriate requirement
CFR = *Code of Federal Regulations*
USC = United States Code

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Table B.2. Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio

Action	Requirements[a]	Prerequisite	Citation
	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
	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)
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)
	• 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)
	• 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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
	• Use of adequate containment methods during sandblasting or similar operations;		*OAC* 3745-17-08(B)(5)
	• Cover, at all times, open-bodied vehicles when transporting materials likely to become airborne;		*OAC* 3745-17-08(B)(7)
	• Pave and maintain roadways in a clean condition; and		*OAC* 3745-17-08(B)(8)
	• 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)
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
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)
	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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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 OHC000003.	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 OHC000003, Part III.G.2
	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)
	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)
	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)
	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)
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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
	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)
	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 non-wastewaters 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)
	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—a**pplicable**	40 *CFR* 268.9(b) to (d) *OAC* 3745-270-09(B) to (C)
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)
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)
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, 3745-65 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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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
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
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)
	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)
	• Physical and chemical characteristics;		DOE M 435.1-1(IV)(I)(2)(a)
	• Volume, including the waste and any stabilization or absorbent media;		DOE M 435.1-1(IV)(I)(2)(b)
	• Weight of the container and contents;		DOE M 435.1-1(IV)(I)(2)(c)
	• Identities, activities, and concentrations of major radionuclides;		DOE M 435.1-1(IV)(I)(2)(d)
	• Characterization date;		DOE M 435.1-1(IV)(I)(2)(e)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Characterization of LLW (continued)	• Generating source; and		DOE M 435.1-1(IV)(I)(2)(f)
	• 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)
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)
	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)
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)
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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
Torch cutting of metal coated with paint that may contain PCBs	No person may open 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)
Management of PCB items	Any person removing from use a PCB Item containing an intact and non-leaking 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 non-leaking 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)
Demolition of a facility containing RACM	Remove all RACM from the facility before demotion 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)
	• RACM need not be removed before demolition if:		40 *CFR* 61.145(c)(1)(i) *OAC* 3745-20-04(A)(1)(a)
	• It is Category I nonfriable ACM that is not in poor condition and is not friable;		
	• 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)
	• 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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Demolition of a facility containing RACM (continued)	• 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)
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)
	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)
	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 is has not been crumbled, pulverized, or reduced to powder.		40 *CFR* 61.150(a)(5) *OAC* 3745-20-05(B)(5)
	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 coverts 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)
	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)
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

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Characterization and management of universal waste (continued)	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)
	Must label or mark the universal waste to identify the type of universal waste.		40 *CFR* 273.34 *OAC* 3745-273-34
	May accumulate waste for no longer than one 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)
	May accumulate universal waste for longer than one year from the date the 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)
	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
	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
	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

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Management of universal waste lamps (fluorescent, mercury vapor)	Must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps.	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)
	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.		
	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)
	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)
	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)
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)
	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)
	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)
	Upon detection of a release of used oil to the environment, a generator must stop the release; contain, clean up, 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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
	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
Decontamination of PCB contaminated materials prior to use, re-use, 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 non-porous surfaces, as listed in 40 *CFR* 761.79(b).	Generation of PCB wastes, including water, organic liquids, non-porous surfaces (scrap metal from disassembled electrical equipment), concrete, and non-porous surfaces covered with porous surfaces, such as paint or coating on metal—**applicable**	40 *CFR* 761.79(b)
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)
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)
Decontamination of organic liquids or non-aqueous inorganic liquids containing PCBs	For organic liquids or non-aqueous inorganic liquids containing PCBs, decontamination standard is < 2 mg/kg (i.e., < 2 ppm) PCBs.	Release of organic liquids or non-aqueous liquid containing PCBs—**applicable**	40 *CFR* 761.79(b)(2)
Decontamination of non-porous surfaces in contact with liquid PCBs to levels acceptable for unrestricted use	For non-porous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, ≤ 10 µg PCBs per 100 sq cm (≤ 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 non-porous surfaces in contact with liquid PCBs at any concentration for unrestricted use—**applicable**	40 *CFR* 761.79(b)(3)(i)(A)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Decontamination of non-porous surfaces in contact with non-liquid PCBs to levels acceptable for unrestricted use	For non-porous surfaces in contact with non-liquid PCBs (including non-porous 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 non-porous surfaces in contact with non-liquid PCBs for unrestricted use—**applicable**	40 *CFR* 761.79(b)(3)(i)(B)
Decontamination of non-porous surfaces in contact with liquid PCBs to levels acceptable for disposal in a TSCA smelter	For non-porous 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 non-porous 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)
Decontamination of non-porous surfaces in contact with non-liquid PCBs to levels acceptable for disposal in a TSCA smelter	For non-porous surfaces in contact with non-liquid PCBs (including non-porous 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 non-porous surfaces in contact with non-liquid PCBs into a smelter operating in accordance with Section 761.72(b) —**applicable**	40 *CFR* 761.79(b)(3)(ii)(B)
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)
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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
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)
	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)
	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 non-municipal non-hazardous 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)
	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
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* 260.10—**applicable**	40 *CFR* 262.34(a)(1)(i) *OAC* 3745-52-34(A)(1)(a)
	• 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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Temporary storage and accumulation of hazardous waste in containers on site (continued)	• Container is marked with the words "hazardous waste" • 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)(3) *OAC* 3745-52-34(A)(3) 40 *CFR* 262.34(a)(4) *OAC* 3745-52-34(A)(4)
	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)
	Must be marked with either the words "Hazardous Waste" 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)
	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)
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), (D), 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)
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
	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
	Keep containers closed during storage, except to add/remove waste.		40 *CFR* 264.173(a) *OAC* 3745-55-73(A)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Management of hazardous waste stored in containers (continued)	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)
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
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)
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)
	• 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)
	• 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)
	• Must have sufficient capacity to contain 10 percent 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)
	• 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)
	• 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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Storage of ignitable or reactive waste in containers	Containers holding ignitable or reactive waste must be located at least 15 m (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
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)
	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)
	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)
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
Required equipment	All facilities shall be equipped with the following:		40 *CFR* 264.32 *OAC* 3745-54-32
	• 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)
	• 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)
	• 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)
	• 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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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 his facility.	Operation of a RCRA hazardous waste facility—**applicable**	40 *CFR* 264.14(a) *OAC* 3745-54-14(A)
	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)
	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 twenty-five ft.		40 *CFR* 264.14(c) *OAC* 3745-54-14(C)
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)
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
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

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
	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)
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
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 non-sudden 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)
	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)
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 non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface waster 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

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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
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
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: • Facilitate a reliable, effective and protective remedy; • 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).	Accumulation of non-flowing 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 40 *CFR* 264.554(d)(1)(i) *OAC* 3745-57-74(D)(1)(a) 40 *CFR* 264.554(d)(1)(ii) *OAC* 3745-57-74(D)(1)(b)
	Must not place incompatible wastes in same pile unless comply with 40 *CFR* 264.17(b) [*OAC* 3745-54-17(B)]. 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.	Storage of "incompatible" remediation waste in staging pile—**applicable**	40 *CFR* 264.554(f)(1) *OAC* 3745-57-74(F)(1) 40 *CFR* 264.554(f)(2) 3745-57-74(F)(2)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Temporary storage of PCB waste in a non-RCRA regulated area	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 *CFR* 274.17(b) [*OAC* 3745-54-17(B)].		40 *CFR* 264.554(f)(3) *OAC* 3745-57-74(F)(3)
	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 storage unit 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)
	The facilities shall meet the following criteria:		40 *CFR* 761.65(b)(1)
	• Adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB Items;		40 *CFR* 761.65(b)(1)(i)
	• Adequate floor that has continuous curbing with a minimum 6-in. high curb. Floor and curb must provide a 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)
	• 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)
	• Floors and curbing constructed of Portland cement, concrete, or a continuous, smooth, nonporous surface as defined at Section 761.3, which prevents or minimizes penetration of PCBs; and		40 *CFR* 761.65(b)(1)(iv)
	• Not located at a site that is below the 100-year flood water elevation.		40 *CFR* 761.65(b)(1)(v)
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) thru (iv)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
	Storage area must be properly marked as required by 40 *CFR* 761.40(a)(10).		40 *CFR* 761.65(c)(3)
	Any leaking PCB items and their contents shall be transferred immediately to a properly marked non-leaking container(s).		40 *CFR* 761.65(c)(5)
	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)
	Items shall be dated when they are removed from service and the storage shall be managed so that PCB items can be located by date. [Note: Date should be marked on container]	PCB items (includes PCB wastes) removed from service for disposal—**applicable**	40 *CFR* 761.65(c)(8)
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)
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)
	Requirements of 40 *CFR* 761.65(c)(9) may be modified under the risk-based disposal option of Section 761.61(c).		40 *CFR* 761.65(c)(9)(iv)
Storage of PCB/radioactive waste in containers	For liquid wastes, containers must be nonleaking.	Storage of PCB/radioactive waste in containers other than those meeting DOT HMR performance standards—**applicable**	40 *CFR* 761.65(c)(6)(i)(A)
	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		40 *CFR* 761.65(c)(6)(i)(B)
	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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Temporary staging and storage of LLW	Ensure that radioactive waste is stored in a manner that protects the public, workers, and the environment and that the integrity of waste storage is maintained for the expected time of storage.	Management and storage of LLW at a DOE facility—**TBC**	DOE M 435.1-1(I)(F)(13)
	Shall not be readily capable of detonation, explosive decomposition, reaction at anticipated pressures and temperatures, or explosive reaction with water.		DOE M 435.1-1(IV)(N)(1)
	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)
	Shall be managed to identify and segregate LLW from mixed waste.		DOE M 435.1-1(IV)(N)(6)
	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)
	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
	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 -270-48).	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

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Disposal of RCRA-prohibited hazardous waste in a land-based unit (continued)	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)
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)
	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)
Soils	May be land disposed if treated prior to disposal according to the 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)
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 though 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

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
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 remain 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)
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)
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
	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
	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

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
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. 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.	Discharge of contaminants to waters of the state – **applicable**	*ORC* 6111.04 *ORC* 6111.07
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. 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.	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) 40 *CFR* 264.17(b) *OAC* 3745-54-17(B)
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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Disposal of solid wastes (continued)	Disposal of solid wastes shall only be by the following methods or combination thereof:		*OAC* 3745-27-05(A)
	• Disposal at a licensed sanitary landfill facility		*OAC* 3745-27-05(A)(1)
	• Incinerating at a licensed incinerator		*OAC* 3745-27-05(A)(2)
	• Composting at a licensed composting facility		*OAC* 3745-27-05(A)(3)
	• 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)
Prohibition on open dumping of solid wastes	Temporary storage of putrescible solid wastes in excess of seven 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)
	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)
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 facility—**TBC**	DOE M 435.1-1(IV)(O)
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)
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)
	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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Disposal of refrigeration equipment (continued)	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)
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)
	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)
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

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
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)
	Clean hard fill may be stored for a period of less than two 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)
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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
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)
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)
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: For mineral oil dielectric fluid, may be disposed in a high efficiency boiler according to 40 *CFR* 761.71(a). For liquids other than mineral oil dielectric fluid, may be disposed in a high efficiency boiler according to 40 *CFR* 761.71(b).	PCB liquids at concentrations $\geq$ 50 ppm—**applicable**	40 *CFR* 761.60(a) 40 *CFR* 761.60(a)(1) 40 *CFR* 761.60(a)(2)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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 non-liquid PCB wastes—**applicable**	40 *CFR* 761.60(a)(3)
	• Disposal does not violate 40 *CFR* 268.32(a) or 268.42(a)(1), and		40 *CFR* 761.60(a)(3)(i)
	• Liquids do not exceed 500 ppm and are not ignitable waste as described in 761.75(b)(8)(iii).		40 *CFR* 761.60(a)(3)(ii)
Disposal of PCB transformers	Shall be disposed of in either:	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)
	• An incinerator that complies with 40 *CFR* 761.70, or		40 *CFR* 761.60(b)(1)(i)(A)
	• 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.		40 *CFR* 761.60(b)(1)(i)(B)
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)
	• In an incinerator under Section 761.70,		40 *CFR* 761.62(a)(1)
	• In a chemical waste landfill under Section 761.75,		40 *CFR* 761.62(a)(2)
	• In a hazardous waste landfill under Section 3004 or /Section 3006 of RCRA,		40 *CFR* 761.62(a)(3)
	• Under alternate disposal under Section 761.60(e),		40 *CFR* 761.62(a)(4)
	• In accordance with decontamination provisions of Section 761.79;		40 *CFR* 761.62(a)(5)
	• In accordance with the thermal decontamination provisions of Section 761.79(e)(6) for metal surfaces in contact with PCBs.		40 *CFR* 761.62(a)(6)
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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
	• 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)		40 *CFR* 761.62(b)(1)(i)
	• 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)
	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)
	• The PCB bulk product waste is segregated from organic liquids disposed of in the landfill, and		40 *CFR* 761.62(b)(2)(i)
	• Leachate is collected from the landfill and monitored for PCBs.		40 *CFR* 761.62(b)(2)(ii)
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)
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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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 non-municipal non-hazardous waste; • 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)(4)(i)
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)
	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)
	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)
	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)
	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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
	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 non-municipal nonhazardous waste; • 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)
	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 • Controls, minimizes or eliminates, to the extent necessary to protect human health and environment, post-closure escape of hazardous waste, hazardous constituents, contaminated run off or hazardous waste decomposition products to ground or surface waters or to the atmosphere.	Closure of a RCRA hazardous waste management unit—**applicable**	40 *CFR* 264.111(a) *OAC* 3745-55-11(A) 40 *CFR* 264.111(b) *OAC* 3745-55-11(B)
	• 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 Sects. 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)
	During closure periods, all contaminated equipment, structures, and soils must be properly disposed or decontaminated.		40 *CFR* 264.114 *OAC* 3745-55-14

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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)
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)
	Must decontaminate contaminated subsoils in a manner that will protect human health and the environment.		40 *CFR* 264.554(j)(2) *OAC* 3745-57-74(J)(2)
	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)
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)
	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)
Closure of TSCA storage facility (i.e., storage areas established under this action)	Must close in a manner that eliminates the potential for post-closure 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)
	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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Closure of TSCA storage facility (i.e., storage areas established under this action) (continued)	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)
	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 -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 a public or private right-of-way—**applicable**	40 *CFR* 262.20(f) *OAC* 3745-52-20(F)
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 Portsmouth site—**TBC**	DOE Order 460.1C(4)(b)
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*). To the extent practicable, the volume of waste and number of shipments shall be minimized.	Preparation of shipment of radioactive waste—**TBC**	DOE M 435.1-1(I)(1)(E)(11) DOE M 435.1-1(III)(L)(2) DOE M 435.1-1(IV)(L)(2)
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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
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
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)
	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
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 U.S. EPA ID numbers.	Preparation of used oil for transport off site—**applicable**	40 *CFR* 279.24 *OAC* 3745-279-24
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)
	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)

Table B.2 Action-specific ARARs for Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (continued)

Action	Requirements[a]	Prerequisite	Citation
Transportation of hazardous materials on 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.	Any person who, under contract with an department or agency of the federal government, transports "in Preparation for transport or shipment "in commerce" of a hazardous material— **applicable**	49 *CFR* 171.1(c)

[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.
[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.

ACM = asbestos-containing materials
ALARA = as low as reasonably achievable
ARAR = applicable or relevant and appropriate requirement
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
CFR = Code of Federal Regulations
CMBST = combustion
CWA = Clean Water Act
DFF&O = Director's Final Findings & Orders
DEACT = deactivation
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 (Amendments of 1976)
ID = identification number
LDR = land disposal restriction
LLW = low-level (radioactive) waste
LPP = LATA/Parallax Portsmouth, LLC
MVAC = motor vehicle air conditioning
NACE = National Association of Corrosion Engineers
NPDES = National Pollutant Discharge Elimination System
OAC = Ohio Administrative Code
Ohio EPA = Ohio Environmental Protection Agency
PCB = polychlorinated biphenyl
POLYM = polymerization
POTW = publicly owned treatment works
RACM = regulated asbestos-containing material
RC = Ohio Revised Code
RCRA = Resource Conservation and Recovery Act of 1976
RORGS = recovery of organics
TBC = to-be-considered
TSCA = Toxic Substances Control Act of 1976
USC = United States Code
UTS = universal treatment standard
WAC = waste acceptance criteria

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ATTACHMENT 2

RESPONSIVENESS SUMMARY FOR PUBLIC COMMENTS RECEIVED ON THE *ENGINEERING EVALUATION/COST ANALYSIS FOR THE PLANT SUPPORT BUILDINGS AND STRUCTURES AT THE PORTMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO*

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SUMMARY OF COMMENTS RECEIVED AND RESPONSES FOR THE PLANT SUPPORT BUILDINGS AND STRUCTURES ENGINEERING EVALUATION AND FEASIBILITY STUDY AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT

This Responsiveness Summary presents the U.S. Department of Energy's (DOE's) responses to comments received from the public review and comment period held October 24, 2011 to November 23, 2011regarding the *Engineering Evaluation/Cost Analysis (EE/CA) for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE/PPPO/03-0207&D4). Comments were received both by mail during the comment period and during a public availability session held November 10, 2011 and recorded by a court reporter. These written and verbal comments have been included verbatim, although some discretion was used in selecting which discussions from the public availability session (as documented in a transcript) were comments or questions and which were just clarifying discussions. Miscellaneous conversations are not captured in this responsiveness summary. The entire transcript can be found in Appendix A.

Verbal responses were provided to all questions and comments during the public availability session. However, those responses were generated on the spot and did not have the benefit of being able to refer to source documents. These written responses are the formal responses to the comments received in the public availability session. All comments received were from individual members of the public.

The comments have been divided into two groups - the first group of comments relates directly to the non-time critical removal action decision described by the EE/CA; responses have been provided for these comments. The second group of comments relates to other Portsmouth Gaseous Diffusion Plant (PORTS) clean-up decisions beyond those represented by the EE/CA. Written responses have not been generated for the second group of comments; rather, these comments are identified in this Responsiveness Summary with the notation that they will be presented again, with formal responses, in the future as part of the appropriate project documentation covering the decision issue raised by the commenter.

Each of the comments received on the EE/CA provided helpful insight. Each of the comments was carefully considered as to its potential implications to the EE/CA. Based on this consideration no changes were identified as being necessary to the EE/CA or the proposed non-time critical removal action alternative as an outgrowth of the comments received.

The following acronyms are used in the responses to provide easier reading and understanding:

ACM	asbestos containing material
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
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 September 12, 2011 Modification thereto*
DOE	U.S. Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
FBP	Fluor B&W Portsmouth LLC
GDP	Gaseous Diffusion Plant
NRC	Nuclear Regulatory Commission
OAC	*Ohio Administrative Code*
Ohio EPA	Ohio Environmental Protection Agency
PORTS	Portsmouth Gaseous Diffusion Plant

RCRA	Resource Conservation and Recovery Act of 1976, as amended
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SSAB	Site Specific Advisory Board
USEC	United States Enrichment Corporation
WAC	waste acceptance criteria
WTI	waste treatment incinerator

1. COMMENTS CONCERNING THE PLANT SUPPORT BUILDINGS AND STRUCTURES EE/CA

1.1 QUESTIONS FROM NOVEMBER 10, 2011 PUBLIC AVAILABILITY SESSION

Note that the following questions and responses are verbatim from the November 10, 2011 public availability session.

1. What is the volume of waste to be disposed of on the site versus the off-site situation? I'm sure it's been discussed with you. Do you have any answers, comments, or whatnot?

Response: The total estimated volume of waste to be generated from this action is approximately 3.4 million cubic feet (124,000 cubic yards [cy]) (p. 23 of the EE/CA). Until a site-wide waste disposition decision is made, all of this waste generated by the demolition activities conducted pursuant to the EE/CA and associated action memorandum must be disposed off site. If a future site-wide on-site waste disposition decision is made while the removal action is still underway, generated waste that meets the on-site disposal facility waste acceptance criteria (WAC) would be disposed in the facility and waste that does not meet the WAC would be disposed of off site. Since the decision with respect to an on-site waste disposal facility has not been made and the WAC has not been established, the volume of waste that could be placed in the cell in the future as a result of this action cannot be determined at this time.

2. Do you have any idea what the percentage of contamination is in the buildings per volume? What I mean is you said 1.3 million. What's the percentage of volume of radiological material, whether it's fixed or airborne or whatnot? Do you have any idea?

Response: [The 1.3 million mentioned in the comment refers to 1.3 million cy of waste for the entire plant.] The debris from the demolition of the buildings within the scope of this EE/CA, which is approximately 124,000 cy, is projected to be less than 10 percent of the total waste volume anticipated to be generated during the decontamination and decommissioning (D&D) of all the facilities associated with the former gaseous diffusion operations at PORTS. The table below presents the approximate types of waste that is anticipated to be generated from demolition of the 46 buildings in the scope of the EE/CA.

Waste Type	Volume (cy)	Percent
Sanitary/Industrial	117,300	94.5
LLW/MLLW	4,200	3.4
RCRA/TSCA	2,600	2.1

LLW = low-level (radioactive) waste
MLLW = mixed low-level (radioactive waste)
RCRA = Resource Conservation and Recovery Act of 1976, as amended
TSCA = Toxic Substances Control Act

Most of the waste is anticipated to be uncontaminated (sanitary/industrial). About 3 percent of the waste is expected to be radiologically contaminated with most of the contamination anticipated to be fixed (i.e., immobile).

3. What is the schedule of the D&D, what will – how will an on-site disposal cell affect the schedule of the project? Time frame? First quarter, second quarter, third quarter, fourth quarter?

Response: If Alternative 2 is selected, the current planning schedule for the D&D of the buildings and structures included in the scope of the EE/CA anticipates an initiation of D&D in the fourth quarter of fiscal year 2012 with a completion date for this D&D effort as early as 2020. Selection of an on-site waste disposal remedy would not affect the scheduled demolition of these buildings. Current schedule projections are preliminary estimates and are subject to change based on variables such as funding.

4. I notice the X-600C plant, it looks like it's pretty soon to be demolished or it's in your recent plan. There's a facility behind that that's called X-621 that is a rainwater treatment facility. Now, how will you treat that? Will you dig it up or will you use it? I know [Resource Conservation and Recovery Act of 1976, as amended] RCRA is your highest goal, to make sure that RCRA is followed. So I was wondering what will you do with 621 where the water goes to 617? What do you do in cases like that? You dig them up and put some other type of containment because there's always going to be the rain. The steam plant will be gone, but….

   The 621 facility is an amazing facility in regards to what they do to the water that gathers in that pond and what it looks like when it leaves the buildings. It's quite effective in the treatment of water in there.

Response: DOE appreciates the comment on the effectiveness of the treatment system and wishes to assure the commenter that the plant will remain as long as the coal pile exists. The X-621 Coal Pile Treatment Facility, which is used to adjust the pH and remove iron, copper, and zinc from the surface runoff of the coal storage yard and to divert wastewaters from the steam plant, will continue to be utilized until it is no longer required to perform its function. However, once the coal pile is removed, the treatment plant will no longer be needed. It will not be replaced at that point and will be made available for demolition.

5a. The buildings here, the 46 buildings you have there, how soon are you going to start demolition on those?

5b. When do you anticipate the first building is going to come down?

Response: If Alternative 2 is selected, the planning schedule for the D&D of the buildings and structures included in the scope of this EE/CA projects an initiation date for field demolition activities in the fourth quarter of fiscal year 2012 (p.17 of the EE/CA). A full list of planned dates is presented in the EE/CA, but they are subject to change.

6. So the decision on which facilities will go when will be based on probably the least risk, least contaminated radiation will be probably first, if they're not being used, or …?

Response: The decision to include a building in the EE/CA was primarily based on the availability of the building in the near term. Availability of the building was also the primary consideration in identification of the proposed sequence of building/structure demolition. Availability depends on when a building/structure is no longer needed or when a replacement can be made available if required. For example, as described in the response to Comment 4, the X-621 Coal Pile Treatment Facility will no longer be needed once the steam plant is shut down and the coal pile is removed. And once trailers are in place to house the occupants of the X-100 Administration Building, it will be available for demolition. A second consideration is available funding. If there is a budget increase, larger available buildings may be demolished sooner than originally planned.

7. Will some of those kind of be put off until the decision is made about the cell, or will that affect the order of maybe demolition of those 46 facilities? So the order of demolition could change at any time on one of those, or is there a specific order you have to go by as far as your procedure you have there.

Response: The projected sequencing of demolition for the implementation of the proposed alternative is not dependent on the availability of an on-site disposal facility, if selected. The proposed alternative establishes no required order of demolition for the facilities within the scope of the removal action. As stated in the response to Comment 6 above, the sequence of planned demolition is mainly predicated on the availability of the individual facilities. The EE/CA (p. 17) presents anticipated dates of when planning for demolition would begin. These dates are subject to change.

8. The question I have is I know once you have your work plan established, there's going to be milestones attached to that work plan. We understand that. We all know that those milestones are going to have money and bonuses and everything else tied to that.

   The question is: If you come into a situation where you find these -- some of these buildings have some salvageable material that was not initially evaluated to be used, if you run into unknown contaminants that had not necessarily been evaluated, is there a mechanism in place to change those milestones?

   And I know that you're all the techie guys. Let me tell you, I mean, I know how money works. When they throw out the bonuses, like somebody might just forget about the extra beryllium that they found in the corner over there and keep on going with the process.

   So the question is: How easy is it going to be to go back through this process and change that without significant pressures on the funding as far as bonuses and milestones.

Response: First, safety of the workers and the community is DOE's number one priority. Building demolition does not begin until sampling and analysis is completed to characterize the buildings for waste disposition and hazard identification, planning documents are written, health and safety plans developed, and worker input to the implementing methods received. The Ohio Environmental Protection Agency (Ohio EPA) reviews and concurs on these sampling and analysis plans as well as removal action work plans prior to initiation of D&D activities. DOE constantly monitors the work in progress, as does the contractor, to ensure safe working conditions. If a changed condition is found, the work stops. If necessary, to accommodate the changed condition, the project milestone would be changed. Project milestones are established between DOE and Ohio EPA in accordance with the requirements of *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 September 12, 2011 Modification thereto* (DFF&O). The DFF&O also establishes a process for requesting changes to milestones when necessary and requires approval by the Ohio EPA for such changes.

9. When you reach those situations, is there an opportunity for public comment to those situations or are those things kind of done behind closed doors?

Response: When significant changes occur necessitating a need to modify the terms of the approved and issued decision document, public review and involvement is recommended by relevant guidance (the U.S. Environmental Protection Agency's [EPA's] Guide to Preparing

Superfund Proposed Plans, Records of Decision (ROD), and Other Remedy Selection Decision Documents, July 1999). After public notice, the decision document is then re-issued for public comment.

Changes requiring public input are defined as "significant changes". Non-significant changes to the issued decisions will be subject to the approval of Ohio EPA and would typically be a subject of discussion at the quarterly public meetings and at Site Specific Advisory Board (SSAB) meetings, currently held monthly.

10. Are you going to have any other public meetings to comment on this like you're having this forum tonight?

Response: Along with the formal public meetings on these future regulatory decisions, quarterly project progress briefings with the public are also planned. The first of these project progress briefings took place in September 2011. There are no other public meetings planned to seek input on the proposed alternative addressed in the Plant Support Buildings and Structures EE/CA. However, there will be future formal public meetings on the larger Process Building Remedial Investigation/ Feasibility Study (RI/FS) and Proposed Plan and for the Sitewide Waste Disposition RI/FS and Proposed Plan. Meetings of the SSAB, currently held monthly, are open to the public and provide an opportunity for the public to learn about the progress being made on DOE projects and to provide the SSAB and DOE with feedback.

11. It would be my view that if we start down a path with the first building that comes down, that path ain't probably going to get changed. In other words, if we decide to dump these buildings into some pit out there, everything else is probably going to follow.

Response: The proposed alternative provides that all waste generated from the D&D of the 46 buildings within the scope of the EE/CA will be disposed off site. There is a provision in the proposed alternative that if the subsequent site-wide waste disposition decision selects on-site disposal, the debris generated from the demolition of the remainder of 46 buildings could be considered for on-site disposal as long as the established WAC is achieved. Likewise, if the sitewide waste disposition decision selects an off-site disposal alternative, the generated waste will continue to be disposed of off site. The public will have input into any site-wide waste disposition decision at various times during calendar year 2012.

12. Who makes the decision in the DOE's chain of command? Is it Chu, the secretary? Who is it? I mean, give us some names.

Response: The Secretary of Energy has authority for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal actions under E.O. 12580. The Secretary has delegated that authority for the Portsmouth facility to Bill Murphie. For the 46 building D&D decision, Bill Murphie, Manager of the DOE Paducah/Portsmouth Project Office, has the authority to sign the action memorandum after Ohio EPA concurrence.

13. What you're basically saying is you can have all kinds of policies, but the Ohio Revised Code is the final say, so to speak? Ohio EPA is under the Ohio Revised Code? How's come if this is, why is the Ohio EPA regulating a government facility? Why isn't it the federal EPA?

Response: The alternative selected in the Action Memorandum must meet a set of agreed upon federal and state regulations to satisfy the DFF&O. The DFF&O is an agreement between Ohio EPA and DOE. Ohio EPA oversees DOE's implementation of the DFF&O and also provides day-

to-day oversight of environmental cleanup activities according to previous agreements made between EPA, Ohio EPA, and DOE. EPA's role at the site is limited and includes involvement in final decision making for environmental media cleanup.

14. This is a DOE job site, correct? How's come DOE is regulating their own job site? Did the [Nuclear Regulatory Commission] NRC used to regulate it before they took over from [United States Enrichment Corporation] USEC? Who regulated it last year? Who do they answer to?

Response: The 3,777 acre PORTS is owned by the U.S. Government and is under the control and stewardship of the DOE. USEC operated the Portsmouth Gaseous Diffusion Plant (GDP) facilities leased from the DOE under the terms of a certificate issued by the NRC. The NRC provided regulatory oversight over all activities conducted by USEC under the terms of the certificate. (We believe the commentor is referring to the DOE.) Activities at the Portsmouth GDP are being conducted by the DOE Office of Environmental Management. This office reports to the Secretary of Energy, who in turn reports to the President. The DOE was granted regulatory authority by the Atomic Energy Act of 1946. Consistent with this authority, DOE promulgates regulations and issues orders and policies, establishing the necessary requirements to ensure the safe and effective operation of the facilities under their control, including the Portsmouth GDP. It should be noted that the EPA and the Ohio EPA share regulatory authority over the Portsmouth GDP for environmental related matters. Over the last year USEC has progressively returned the Portsmouth GDP facilities to the DOE through a formal de-leasing process. As the facilities were de-leased, regulatory oversight responsibility for the GDP facilities was transitioned from the NRC to DOE. It should also be noted that environmental regulatory responsibility has remained unchanged throughout this transition process and remains with the EPA and Ohio EPA.

15. How much experience does Fluor-B&W have with the chemicals and hazards that are on this site, the technetium, the uranium, and so forth?

Response: DOE was obligated to select a qualified contractor when they awarded the five-year Portsmouth D&D Contract in 2010. Fluor and B&W demonstrated their qualifications to execute the requirements of the contract, including the ability to commit qualified personnel and the demonstration of relevant past experience. Fluor and B&W have been part of environmental restoration efforts at over 10 DOE facilities with essentially the same contaminants. Both companies have conducted work at the Oak Ridge Gaseous Diffusion Plant. Fluor completed the environmental restoration efforts at the DOE Fernald facility, also in Ohio, which was a uranium processing plant employing most chemical and metallurgical forms of uranium including UF_6 and high volumes and concentrations of acids, including hydrofluoric acid.

16. You've got people in that plant site, like John said, been there 35, 40 years, experience people that know more about that plant than anybody. I think utilize the people that's been there since the process was there. There's a lot of knowledge out there with the local people. I think it'd be smart. DOE, you folks should utilize those people instead of bringing outside people in from other sites. They bring all the outside contractors in and the local people got to go home and sit on the porch and watch them go by.

    I hope whatever decision they make, if we have any part in it at all, who knows, you know, we can have these meetings and talk about it. Talking about it and getting it done is another thing.

Response: An experienced workforce with historical knowledge of the Portsmouth Site is a benefit to the D&D project at the site. Most of the existing workforce has been retained by Fluor-B&W Portsmouth LLC (FBP). Additionally, many of the retired long-term site personnel are being actively sought out for information and insight on various aspects of historical site operations in support of the D&D scope.

17. As far as that goes, I don't know who needs to know about it or anything else. Getting this out into the public for the people to know about the public meetings, I think it needs to be stepped up a notch. There's a lot of people that have no -- still have no idea. I mean, they can't get on the mailing list unless they come to a meeting and sign to get on the mailing list. A lot of people around here have no idea what's going on right now.

    Somebody needs to put more ads in the newspaper, bigger ads in the newspaper, not inch by inch, and maybe put it on the radio or something. We need to reach out to the public a little bit better.

Response: DOE fully supports a robust public involvement process at the Portsmouth Site. The public outreach and quarterly community meetings that began in September 2011 are aimed at meeting this need, and will explore various technical and regulatory topics of interest to the community. Specific steps taken to announce the availability of the EE/CA to the public are as follows. A fact sheet on the EE/CA was mailed to the FBP mailing list on October 24, 2011. The fact sheet included an announcement regarding the availability of the document for public review, provided the date and time of the public availability session, and included a detachable comment card that could be mailed to DOE. In addition, an announcement of the public availability session was published in the Waverly Watchman newspaper on October 30, 2011. An announcement regarding availability of the EE/CA was also posted on the FBP website. Similar steps will be taken on future documents to ensure the public is aware of opportunities to review and comment on site documents.

18. I had heard that there was a cut in funding to DOE. I don't know if this specifically affected this site or not. I don't know. Maybe you can touch on that.

Response: The Portsmouth Site has adequate funding for work planned in 2012. Because funding for the site is based on congressional appropriations, DOE cannot predict funding levels for future years. Based on funding received in a given year, the site will have to adjust the work planned for that year accordingly.

The D&D activities proposed in this EE/CA will be implemented over a number of years. DOE will prioritize work activities sitewide to accomplish the maximum work activities achievable with the funds provided. This prioritization may result in the scheduling of near term work activities under this EE/CA to later years. Likewise, if there is an increase in funding, additional work under this EE/CA may begin.

19. What about safety? Right, the contractor has to meet DOE's health and safety regulations that's regulating their own jobsite. So don't you think maybe they can fudge a little here, fudge a little there if they need to? When DOE comes through there and they do their walk-throughs and they look and see, well, that's not right, but they turn their head this way and keep right on going. Who do they answer to? Who does DOE answer to? DOE has been there a long time ago, pal. This may be some new thing for DOE. Maybe it's true, but I'm just saying that this has not been true for 40 years. I can't say that one day you'll wake up and say I'm going to do it different and that it's going to be that way it is every day. We will see how it progresses. So I say again, I've been there

40 years, and I've worked in the actual construction and actually worked in the work areas, and I doubt seriously if you have been in that environment.

Response: Worker safety is the first priority for DOE. No work begins without a thorough safety analysis that involves input from the workers. Every step of the activity is identified, along with associated risks and a mitigation strategy. Every shift begins with a review of the job steps and the safety components. Workers are not only authorized to stop work if they see a safety concern, but are required to stop work if the conditions change from those discussed at the beginning of the shift. Work cannot begin again until the job steps are modified and new risks are identified to consider the changed condition. In addition, both the contractor and DOE provide safety professionals and safety oversight of the activities.

1.2 PUBLIC QUESTIONS/COMMENTS VIA MAIL

1. Please ensure the trailer park adequately addresses the loss of office space, conference rooms, restrooms, tornado shelter, break areas, credit union, training rooms, etc. before demolishing the X-100 building. Cafeteria functions need to continue somewhere if the current facility is demolished soon. Don't demolish the X-705 until all cleanup is completed as it has helpful mechanisms for cleaning waste. It would be nice to see the X-720 shop be cleaned and used for demolition support and general industry production.

Response: Required support services, and corresponding facilities, will be provided for prior to demolition of the X-100 Administration Building and X-102 Cafeteria. D&D of the X-705 Decontamination Building and the X-720 Maintenance and Stores Building are not addressed in this EE/CA, but DOE agrees with the commenter on the importance of these buildings in the future. In the proposed alternative, the use of each building, structure, and infrastructure with respect to the overall remediation of the PORTS site will be evaluated prior to implementing a response action.

2. I am in favor of the cleanup now taking place and the demolition of facilities and size reduction of debris and contaminants so it is a safe place to be used again. I'm hoping funds come through to do this.

Response: Thank you for your comment.

3. Please include the following as part of the official record of proceedings. Thank you in advance for providing responsiveness summary. Has DOE considered on-site disposal for the 95 percent of clean waste to be disposed in sanitary/industrial landfills during the cleanup process? DOE controls 3,777 acres approximately on the PORTS site. Please justify creating considerable risk from transportation, use of landfill disposal capacity, and risk to the environment and public health by selecting off-site landfill disposal alternative. DOE controls more than adequate acreage to provide relative isolation in disposal capacity for the estimated 3,168,046 cf of sanitary/industrial waste estimated to be created.

Response: The Sitewide Waste Disposition RI/FS is anticipated to provide much of the analysis recommended, but based on a larger volume of waste materials. If the Sitewide Waste Disposition RI/FS results in the selection of an on-site disposal remedial alternative, all waste generated (including the 3,168,046 cf of sanitary/industrial waste from the 46 buildings) pursuant to the implementation of the proposed EE/CA removal action alternative would be disposed of off-site at an approved disposal facility until such time as an on-site facility

becomes operational. At that time, and with the agreement of DOE and Ohio EPA, generated waste that meets the on-site facility's WAC would be disposed in the cell and waste that did not meet the WAC would be disposed of off site.

Sanitary/industrial waste will be generated through D&D of the gaseous diffusion plant. Depending on the location of the generation, this waste could be either contaminated with site introduced contaminants or clean (free of such contaminants). Contaminated sanitary/industrial waste would be evaluated against the WAC of the on-site or off-site disposal facility and appropriately dispositioned. Clean sanitary/industrial waste would be available for free release to an approved, licensed local sanitary landfill (e.g., Pike Sanitation).

4. Please include the following correspondence as part of the official record of proceedings in the EE/CA cleanup strategy for the PORTS site. Thank you in advance for providing responsiveness summary. Please provide me with a printed copy when the agency develops this document.

Response: A copy of the responsiveness summary will be placed in the Administrative Record. Paper copies of documents in the Administrative Record may be obtained from the DOE Environmental Information Center, 1862 Shyville, Rd., Suite 207, Piketon, Ohio. Copies of the responsiveness summary will also be mailed to all individuals that commented on the EE/CA.

4a. DOE is respectfully requested to selected Alternative 2a with on-site landfill disposal of the estimated 3,168,046 cf of sanitary/industrial waste anticipated to be generated during cleanup.

Response: Thank you for the comment. Consistent with the DFF&O, Alternative 2a is included as a contingency to the proposed removal action alternative. This contingency could be invoked following the issuance of the ROD for the Sitewide Waste Disposition RI/FS.

4b. What dollar amount of DOE's estimated $66 million total cost of cleanup is allocated for sanitary/landfill waste disposal?

Response: Based on the estimate presented in the EE/CA, approximately $14.4 million (~22 percent) of the estimated $66 million is allocated for sanitary waste disposal.

4c. Please provide dollar amounts for both on-site and for off-site alternatives for disposal.

Response: A cost estimate for the on-site disposal of the demolition debris generated from the D&D of the 46 buildings and structures was not included in this EE/CA. Costs associated with the potential on-site disposal of demolition debris generated from the implementation of the proposed alternative will be highly dependent on the timing of the availability of any such disposal facility and the quantities of remaining materials. The Sitewide Waste Disposition RI/FS is anticipated to provide a comparison of the costs for a remedial alternative that relies on the operation of an on-site disposal facility and for a separate alternative utilizing only off-site shipment and disposal. Based on the estimate presented in the EE/CA, the transportation and disposal costs associated with off-site disposal of the 46 buildings and structures in the EE/CA are estimated to be $49 million (this includes the $14.4 million).

4d. Is the 3,168,046 cf of sanitary/industrial waste estimate before or after compaction? If before, what volume in cubic feet is anticipated by DOE after compaction? If after, what volume is anticipated from the D&D of 46 support facilities at PORTS before compaction?

Response: The estimated volume of sanitary/industrial waste is prior to compaction. Placement and compaction of debris in a landfill may reduce that volume 20-30 percent, depending on the type of debris present and the degree of compaction. This may result in a final disposed volume of 2,200,000 cf to 2,500,000 cf.

4e. Is on-site WTI (waste treatment incinerator) alternative being considered by DOE for sanitary/industrial landfill waste? Is off-site WTI alternative being considered by DOE for landfill/sanitary D&D waste before landfill disposal? If so, what is the dollar cost estimate for both on-site and off-site WTI alternatives? Are any WTI facilities currently available and within a 100-mile radius of the PORTS site? Where? What are the estimated costs of using on-site or off-site WTI treatment?

Response: The use of a WTI was not considered in the EE/CA because of the relatively limited quantities of combustible sanitary waste (less than 10 percent) estimated to be generated consequential to the implementation of the proposed removal action alternative. The use of this technology would require labor intensive removal and segregation of the combustible material either prior to building demolition or removal from the rubble following building demolition. No cost estimates or evaluation of the location of such facilities is deemed necessary or appropriate to address the scope and volumes of materials anticipated to be generated from the implementation of the proposed alternative.

4f. How much metal in weight and types of metals are anticipated to be recycled by DOE?

Response: Previous demolition activities conducted at the Portsmouth site on the X-533 and X-633 facilities, both of which were outside the boundary of radiological areas, generated a range of between 10 to 20 percent (p. 23 of the EE/CA) of recyclable materials by volume. DOE may identify demolished materials or equipment meeting reuse criteria and requirements (e.g., applicable or relevant and appropriate requirement, DOE order requirements, etc.) that may be recycled or reused. Such material would be prepared to meet the transportation requirements and conditions set forth by the recycler. Material or equipment otherwise eligible for recycling/reuse that is not recycled/reused will be dispositioned along with other material generated during the removal action. The exact weight and types of materials amenable for recycle will be determined through project specific analyses.

4g. What dollar amounts are anticipated to be recovered?

Response: Since the exact weight and types of recyclable metals or other materials will be established through the completion of waste stream and/or project specific cost benefit analyses, which will have to consider the level of contamination of the material, any anticipated savings or returns to the government from such actions cannot be estimated at this time. The projected magnitude of such savings would not be a significant factor (less than 5 percent) in the overall cost estimate for the proposed alternative and therefore would not impact the decision making process.

4h. Are any metal recycling facilities available to DOE within a 100-mile radius of PORTS? Where?

Response: There are approximately 30 scrap metal dealers/metal recycling companies within a 100 mile radius of the DOE Portsmouth facility. Recent recycling activities have been conducted through the Southern Ohio Diversification Initiative with three primary vendors removing recyclable materials from the site.

4i. DOE lists asbestos (ACM) as potential contaminate of concern in multiple structures of Appendix A, DOE/PPPO/03-0207&D4. In cubic feet, how much ACM has been estimated by DOE for landfill disposal from D&D activities?

Response: Approximately 39,000 cf of asbestos waste will be generated from demolition of the buildings and structures included in the scope of this EE/CA.

4j. What is "friable asbestos" and what procedure is used for its disposal?

Response: Friable asbestos is asbestos bearing material that can be crumbled or pulverized by hand. This condition is typically the result of weathering, normal deterioration over time, excessive use, or exposure to chemicals or high heat. As a result of this condition, the asbestos bearing material is considered to have a high probability of releasing asbestos fibers into the air thus creating a risk to workers and the public from inhalation. Examples of friable asbestos include: acoustical plaster, insulation, paper products, pipe coverings, rollboard, and spackle or patching compounds. Non-friable asbestos cannot be readily crumbled or pulverized by hand, but it can be made friable if it is damaged, sanded, cut, drilled into, etc. Non-friable asbestos has a low probability of releasing fibers into the air (fibers are bound or locked into material such as cement, vinyl, resin, etc.) and therefore poses a relatively low inhalation risk. Examples of non-friable asbestos include: asphalt/cement roofing products, base flashing, asbestos cement siding (transite), vinyl asbestos floor tile, packing material, and gaskets.

Requirements for the management of asbestos-containing material (ACM) may be found in the EE/CA in Appendix B, Table B.2, on pages B-21 and B-22. There are special worker protection and packaging requirements. The demolition of a facility with ACM follows 40 *Code of Federal Regulations* (*CFR*) 61.145(c)(1)-(7) and *Ohio Administrative Code* (*OAC*) 3745-20-04(A)(1)-(7). Disposal of ACM shall be in accordance with the provisions of 40 *CFR* 61.154 and *OAC* 3745-20-06.

4k. Would DOE please provide definitions of the following terms used in the previously referenced document?

- Surficial contamination (radioactive)
- Fixed contamination (radioactive)
- Beta contamination (radioactive)
- Universal waste (radioactive)
- Criticality

Response:

- Surficial contamination (radioactive)
  Surficial contamination is radioactive contamination that exists on a material's surface as opposed to volumetric contamination where the radioactive contamination is dispersed throughout the material. Surficial contamination may be either fixed or removable.

- Fixed contamination (radioactive)
  Fixed radioactive contamination is surficial contamination that cannot be readily spread or removed as opposed to removable surficial contamination that can be readily removed by

wiping with an absorbent material. Surficial contamination can be stabilized by using fixative coatings such as paints, films and resins.

- Beta contamination (radioactive)

  Beta contamination is the contamination of objects with radioactive materials that that emit beta particle during radioactive decay. Technetium-99 is one of the radionuclides present at the DOE Portsmouth site that is a beta particle emitter. Beta particles have moderate penetrating power and can typically move in the range of up to a few meters in air. Beta particles will penetrate only a fraction of an inch of skin tissue and therefore the major risks to human health from beta particles is through ingestion/inhalation and through the penetration of soft tissue such as eye tissue.

- Universal waste

  Non-radioactive universal wastes are specific hazardous waste streams that a generator can choose to manage in an alternative protective manner in place of the more complex hazardous waste requirements. These wastes are generated by numerous businesses, typically in small quantities. The following are the four categories of universal waste that may be managed under the Universal Waste Rules in Ohio:

  - Lamps (incandescent, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium and metal halide)
  - Pesticides
  - Mercury-Containing Equipment-devices, items, or articles (excluding batteries and lamps) that contain varying amounts of elemental mercury that is integral to their functions (e.g., thermostats, barometers, manometers, temperature and pressure gauges, and mercury switches)
  - Discarded Batteries (e.g., nickel-cadmium batteries and spent lead-acid batteries).

  Radioactive universal wastes are managed as low-level waste. Requirements for the characterization and management of universal waste can be found in the EE/CA in Appendix B, Table B.2, pages B-22 thru B-24.

- Criticality

  A criticality refers to a nuclear event that occurs when a sufficient quantity of fissionable radioactive material is brought together in a specific configuration causing a sustained nuclear chain reaction.

4l. Again, in Appendix A, DOE refers to areas of building(s) scheduled for D&D that presently house documents. These documents are part of the role played by PORTS in the Cold War and, possibly, afterward. Loss of these documents to a landfill would be a tragic and unnecessary loss. DOE is respectfully requested to preserve these documents, store them, and allow public access to them.

Response: DOE has specific rules for the management and preservation of historical records. These requirements will be met during the implementation of all building D&D activities. The various Records Managers and Records Specialists take training conducted by the U.S. National Archives and Records Administration. These intense training classes cover a wide variety of subjects and issues, including records scheduling and records disposition.

DOE is evaluating options for the relocation of the records in the X-100 vault as part of the D&D planning process for this facility.

There is a much larger effort underway to preserve the role played by PORTS in the Cold War. The ultimate goal of the documentation measures taken at PORTS and described above is to preserve the information needed to tell the story. Some interpretation measures already underway by DOE include:

- An archive where hard copies of all of the referenced documentation will be available. The amount of existing, period (vintage) written and photographic material, plans, maps, drawings, manuals, and other items associated with the PORTS site is significant. These items will continue to be catalogued, organized, and supplemented, as needed, with new information as described above. DOE recognizes the extraordinary value of the existing archive materials.

- An on-line "Virtual Museum" designed to be the centerpiece of DOE's documentation focal point with the public is being developed. This gateway to PORTS history will facilitate ready public access to all documentation electronically and would be updated as more information resources become available and documentation efforts continue. This is the "entry point" to the archive of information described above.

- PORTS "oral histories," presently being collected, will also be included in the Virtual Museum. The oral histories will draw upon the personal stories of former workers and others whose lives were involved with the gaseous diffusion plant at Piketon.

4m. The PORTS site has created a massive footprint. DOE is respectfully requested to select Alternative 2a on the nearly 4,000 acres of the site thereby minimizing risk to the public from transportation and allowing for isolation of release of contaminants to the environment and the public. Ninety-five percent of the waste generated from D&D activities is anticipated to be sanitary/industrial landfill disposed somewhere, landfill cell(s) should be created on the massive acreage of the PORTS site.

Response: Please see response to Comment 4a in this section of the responsiveness summary.

4n. Please continue to keep me informed as DOE decision making continues regarding the PORTS site.

Response: DOE will make efforts to continue to keep you and other members of the public informed throughout the decision making process by continuing to use the tools discussed in the response to Comment 17 (in Section 1.1 of this responsiveness summary).

2. COMMENTS CONCERNING FUTURE DECISIONS

The following comments were recorded during the November 10, 2011, Public Availability Session. Many comments were received concerning issues outside the scope of the decision on the Plant Support Buildings and Structures non-time critical removal action. DOE has captured these comments in this Responsiveness Summary and will bring them forward into the future Responsiveness Summaries of the appropriate project decision. The comments will be formally responded to in writing at that time; informal verbal responses were provided at the meeting and are shown in the transcript. DOE appreciates receiving these comments and commits to providing a formal response.

1. In your opinion, DOE's opinion, are you leaning to on-site, off-site, transporting hazardous waste? What is your feeling? What are you looking at?

2. For the waste that is proposed to be disposed of on site, that's the question, on site, I assume it will meet the WAC, Waste Acceptance Criteria. What is the criteria? What is the volume on-site waste, which you already answered that. What is the criteria on the waste acceptance criteria?

3. I'm going to get off the subject just a little bit, okay? Just a little bit. Are you familiar with C8 -- remember the DuPont situation in Parkersburg, West Virginia? I got a home, one of my homes is across the river, and I'm a product of the C8 program. Cancer, people's groundwater was being affected. So it hits home with me personally. And until it hits home with people, you don't understand.

   DuPont said that is was okay. Many, many years ago, this is the teflon situation, I used to know what the name of it is. I apologize for forgetting it. So I remember the bottle water being brought in. I remember getting a blood test. I remember all of the kids, my family members.

   So when you talk about -- I remember the situation. When you talk about one million years, 1,000 years, and I'm being respectful to you, believe me, it seems like it's this instead of this. So I ask you as a person that lives in the community, I have a home back there still, evaluate this very, very seriously because I'm a product of that. I appreciate it if you would.

4. How will the radioactive landfill affect redevelopment of the area if a landfill is put in the area?

5. If the cell were built on the plant site, is that ground going to be reusable with a cell sitting there? Do you think companies will come in with that cell sitting there, how tall is it, 60 feet tall and however wide and long?

6. The off-site disposal facilities are designed and constructed to accept and properly manage waste, which you all know that.

   The landfills are located in dry areas. So the potential for contamination of the groundwater is much less in this area. What is the potential, this is a question, what is the potential for contamination in the groundwater further with the on-site disposal cell? And what I'm referring to is the Teays Valley aquifer which runs from, is it Columbus clear down through to Chillicothe to I think it's Portsmouth. Is it under -- it's under the plant site. Have you looked into that, or is it still in the study stage?

7. The reason why that question is being asked is what I refer to about the C8 situation. That has turned into, I don't know if it's a billion dollars yet for DuPont, it probably is over a billion. So I have a little knowledge, so to speak, on how a good thought turned into a really a bad situation for people in our area. And we are Appalachian folks there. So we are the same type of people. And believe me, we aren't stupid. We've been called stupid, but we aren't.

   I believe the EPA's position on allowing landfills to be constructed with assurance of a waiver is not -- is to not allow the approval of construction, and that's a fact. The numerous groundwater wells within 1,000 feet of any of the proposed landfill sites, that's EPA law; correct? I knew you knew that.

   Landfill sites, the waiver won't need to be granted for construction of an on-site cell and that's a law, right, unless there's a waiver; is that correct?

8. What is EPA's position on granting of a waiver for this purpose, for the on-site cell?

9. How close are we to a fault line?

10. How about the tremors we have had lately? I mean, we've had two tremors in the last year.

11. Give me your position on the cell, if you would please. I'll finish it after you give me your position on the cell. I mean, give me a position on how you feel about the cell. I mean, do you feel real comfortable with the cell? Do you really, you know, what's your feelings about this? You know, I hate to put you on the spot, but I would like to know. If you don't feel like you can give me an answer tonight, that's fine. I respect that.

12. Now, that's leaking right now, so to speak [referring to Landfills 774 and 775]. Is it getting in the aquifer situation, so it's seeping in the groundwater and actually going into the water source?

13. What was the year, so to speak, when they built that, they said it's good for a million years, a hundred years, 500 years?

14. We, the residents of Pike County and surrounding areas, do not want to take on the risk of higher cancer rates to dispose of this material on site. I want you to listen closely here. Any increased risk is too high if it affects your family, my family, and our future families. Especially when there are facilities built to properly dispose of this hazardous waste or waste that's generated.

    There are basically no residences in them areas off site in Nevada where it's supposed to be, and they were selected to be built that way for the disposal of hazardous material. And basically what I would like to ask you tonight is to go home and think about our families here in Pike County, Scioto County, Adams County, Vinton County, Jackson County, and where I grew up Washington County because people do care, and I appreciate your comments tonight, your honesty, and I thank you very much for giving me the time.

15. Sometimes money should never play into the issue of people's lives, and sometimes I think us as people lose the focus about the right thing to do sometimes, you know. It's our money, it's our tax dollars. We all earn the tax dollars. We all pay, you know, I'm being paid by the government, you're being paid by the government, you know.

    I've sat on the board of education for 11 years. I understand, you know, how people feel, you know, how they think a lot of times. One of the best school districts in the State of Ohio. It's proven that way. And we was always honest. So I didn't have any problems being honest.

    So tonight I'm being honest. I would like for you, if you're in a leadership role for the DOE, for the outside contractor, my ask of you tonight would be do the right thing for the folks. That's my asking of you. I appreciate very much your time and your honesty.

16. What's the activity going on beyond the trees that the equipment is going through on the east side of the plant? It looks like you're testing for something. It doesn't sound like you're that far ahead in checking the ground for the on-site disposal. So what are you exactly doing on the east side of the plant behind the trees?

17. As far as this cell goes, I live 1.3 miles from Perimeter Road and I don't want to hear it. Plain and simple, I don't want to hear it. If there's a chance of my kids getting any kind of medical problems, I don't want to hear it. If there's facilities in Nevada and Utah and Oak Ridge that we've already

been shipping this stuff to, why don't we continue shipping it there? It comes down to saving money.

18. I know there's railroad spurs in there, and the railway has to be built up. And if they ship it off site, they're going to have build more spurs, put more people to work, more manpower to do it, which makes sense. And when it's done and over with, don't you think that the industry that moves in here would like to have that railway?

19. What kind of influence does the public and the surrounding area have on DOE on this decision?

    I've been to a couple of these meetings and they keep stressing that the public is going to have the biggest influence on whether this cell comes here or not, and I don't want to be too late to voice my opinion.

    I know my grandparents, my parents, and my grandparents tell me back in the early fifties when they went to build this plant, you know, same standards, they had to give the public information and all that stuff, but it didn't make a bit of different. It's still here. The public around here didn't want it here. There it is.

    And by the time they let the public in on the information, it was too late, and DOE really frankly didn't care. They didn't care what the people wanted around here. They was going to build it.

    So I want to know how much my input is going to influence getting this cell out of here and ship that stuff to Nevada. There's a hundred miles, 200 miles, whatever it is it, from the household, from the first family. The stuff's already there. It was built there for that.

    If the public has so much input on this, why wouldn't they get the input from the public before they go spending God knows how much money on doing this research to maybe put it here?

    I would just like to see them [the decision makers] move over here beside me before they make their decision. Bring their families to over there to live, then they can make their decision. That's all I have.

20. Do you intend or is the intent whether or not the on-site disposal cells are there or not, which we're not really crazy about, is there still an attempt to reduce the existing contaminated landfills? Is there a plan to reduce the footprint of those landfills?

21. Does the possibility of reclaiming maybe salvageable metal, steel in those landfills, is that a compelling basis also? Is it possibly compelling?

22. I've been employed at this facility since 1972, almost 40 years. Life-long resident of Highland County for almost 62 years.

    This was not a hazardous waste dump when the government came in here and built this plant. I'm quite proud of all the hard work a lot of my co-workers and stuff have done out there for 40 years producing the enriched uranium that we used for our power plants, our nuclear navy, and our bombs. I can recall the folks in Washington when they were talking about closing down the production. A lot of them said, we don't owe you anything. We paid you when you worked. You should be done.

Well, I would suggest to you that why should this area have, if anything else, a simple "cancer" on a piece of acre here if there is nothing left producing anything and the economy has forced reducing work. It wasn't here when they got here. Why should we have a "cancer" on even 80 or 90 acres of a landfill that can't be developed? Can't build a house on it. Can't grow crops on it.

Currently, you know, I would suggest to you, and no disrespect to the gentlemen here thinking that they're doing the right thing. Everybody that ever did anything on that plant site says they were doing the right thing when they done that, and we found our year after year after year after year that didn't bear out to be true. Doesn't help us much today, does it?

Again, I would say that anything that comes to demolition at that site should leave the site. If you can't find an existing sanitary landfill that is perfectly legal to put it in already in existence, then take to some other hazardous waste cell somewhere else because it wasn't here when you got here.

Like I said, I would love to see this facility still operating. We had a beautiful [Gas Centrifuge Enrichment Plant] GCEP building that was up and running and producing 4,000 jobs, potential 4,000 jobs in 1985, and they shut it down. And I'm telling you got a bunch of, and no disrespect to the companies, that's what they do. They're supposed to make money.

We have a bunch of contractors that are ready to make a lot of money doing whatever they can with this stuff, and they're going to push as hard as they can for the easiest way for them to make money, and they don't care what's left in this reservation here when they leave.

These folks and I who live around here, like I say again, I'm not speaking, I don't have any authority to speak for anybody else. I got a lot of co-workers hanging around today that worked in that facility, and they didn't all die of old age. Now, we could have done it safer and better, but they told us they were doing it right at the time. I can remember a lot of those cases.

So my suggestion is I think you owe it to this community that if it ain't going to support one future producing job of a similar value that we have now, then take it with you somewhere else.

23. But, you know, nobody wants it here. I don't want it here. I got a granddaughter that lives right there. The landfill is literally going to be in her back door on Loop Road. The one site is right in her back door, you know.

Although, too, you look back, if you take it out west, somebody probably lived there at one time that didn't want it in their backyard. Big problem. Anything you go at, whether you're making or building, there's always byproducts or waste to everything. You burn firewood, you have waste. But nobody wants to deal with it.

But I hope you make a good decision. Like I said, I think you need to utilize the people on plant, because there's a lot of good knowledge there.

You got a lot of engineers that come back for part-time work. There's good knowledge there. A lot of your operators, some of us retired, bring them back part time if you have to get that experience that you need and right down to the maintenance guy, the electrician guy that's done the work. We're going to get into something here we're not prepared for because you may not know it, I may not know it, but he might. We got into this a few years back. We need to do something. Go another route with it.

APPENDIX A:
TRANSCRIPT OF THE EE/CA PUBLIC AVAILABILITY SESSION

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PUBLIC AVAILABILITY SESSION

- - -

IN THE MATTER OF:

PORTSMOUTH GASEOUS DIFFUSION PLANT CLEANUP

- - -

PUBLIC HEARING

6:00 - 8:00

ENDEAVOR CENTER
1862 SHYVILLE ROAD
PIKETON, OHIO 45661

NOVEMBER 10, 2011

- - -

PANEL:

J.D. Chiou
Eric Woods
Jeff Stone
Marc Jewett

RENO & ASSOCIATES

273 LITTLE THEATRE ROAD

WAVERLY, OHIO 45690

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PROCEEDINGS

MS. CHANDLER: This is a public availability session for the Engineering Evaluation and Cost Analysis for the plant support buildings and structures at the Portsmouth Gaseous Diffusion Plant. The way the meeting is going to take place is we're not going to do anything formal presentation-wise, but what we are going to do is allow you to ask any questions that you have on the document that we call the EE/CA, so you will hear that term and you may have heard that term before, and that stands for Engineering Evaluation and Cost Analysis. This document is going to or does discuss, I'm sorry, the alternatives to demolishing the facilities that support the gaseous diffusion plant.

And what we have are subject matter experts here to answer any questions that you have. Any comments that you make will be recorded by the court reporter. Eric Woods and Jeff Stone and J.D. Chiou, these guys are going to be -- and this is Marc Jewett. These guys are going to be available to answer any of the questions that you have related to this document and the plan to tear down these

facilities.

Also during this time we will have the environmental information center open so that you can view the administrative record or review any of the documents associated with this project.

If you have not signed in, we would like for you to sign in so we have a record of your attendance. What we're going to do is we're going to go down through the list in the order that you signed in for your official comments.

Has anybody not signed in?

MR. WOODS: Just one or two additional things. As Jen said, this document evaluates the D&D, as we call it, of 46 support structures. This is not an evaluation of all of the process buildings or the entire complex out there. There are 46 support buildings that are evaluated in this document.

We have -- over on our model of the site, we have a figure that shows exactly which buildings that are under consideration and there's a list also over there.

Out on the table as you came in there was a Fact Sheet, and there are several ways you can provide your comments. As Jen said, we'll be glad to

try to answer any questions that we can tonight. You can also just stand up and record a comment and we'll evaluate the comment and respond in our responsiveness summary that will be prepared. You can take one of the Fact Sheets and you can actually write your comment on it.

So there's flexibility on how you provide the comments. I think the e-mail address, Jen, is on the Fact Sheet.

MS. CHANDLER: Yes.

MR. WOODS: So you're welcome however you want to provide the comment. We appreciate you coming. Glad so many showed up.

MS. CHANDLER: Would anybody like one of these Fact Sheets? If you didn't get one, we have them here.

Okay. We can go ahead and start. Willie Holbert.

MR. HOLBERT: That's me. I have some questions that I would like to ask. You really don't have to answer them tonight, but I'd like for you to respond to my questions in a timely manner, please, if you don't mind.

MR. WOODS: Absolutely.

MR. HOLBERT: What is the volume of waste to be disposed of on the site versus the off-site situation? I'm sure it's been discussed with you. Do you have any answers, comments, or whatnot?

MR. WOODS: Well, the waste that will be generated by the Engineering Evaluation and Cost Analysis would be shipped off-site for disposal. If there was a situation in the future where a decision was made to construct an on-site disposal cell, which this document does not evaluate that. This does not have anything to do with on-site disposal. Then there would be an evaluation of what waste might be able to stay on-site and what could go off-site.

As of right now, there hasn't been a decision. There will be another process and another meeting like this actually, which is the Remedial Investigation Feasibility Study. Similar type of process with CERCLA but a little more involved evaluation. And that will essentially evaluate the alternative of on-site disposal versus off-site.

MR. JEWETT: For all the plant.

MR. WOODS: That is correct, for all the plant.

That document is being developed. We

expect a public meeting on that probably early summer next year. So just to lay that part of the question out.

Volume-wise, J.D., I think, can talk a little bit about the potential volumes that would be generated from the D&D. If you want to --

MR. JEWETT: Do you want to start with the total volume of the D&D, do you know offhand, or just from this action?

MR. WOODS: I think, again, under this action it would be everything generated --

MR. JEWETT: I think he's asking how much volume.

MR. HOLBERT: Right. On-site compared to the off-site volume. That was a two-prong question.

MR. WOODS: So there would be, again, the 46 buildings that would be evaluated here. And as of right now, until the decision is made, all that material will go off-site.

MR. HOLBERT: Do you know how many square feet of volume?

MR. WOODS: Let me find it.

MR. HOLBERT: Is it 20 million ton?

MR. CHIOU: I can kind of summarize. We have three big process buildings here. They represent over 80 percent of the D&D volumes, and overall volume is about 1.3 million.

MR. HOLBERT: 1.3 you say?

MR. CHIOU: 1.3 for the entire plant. And 80 percent of that is in these three buildings, which is not covered by this document. This document only covers the other facilities. Not even these kind of bulk containment buildings. Those are kind of being looked at with these three big buildings. But those 46 buildings are smaller buildings.

MR. HOLBERT: Do you have any idea what the percentage of contamination is in them buildings per volume? What I mean is you said 1.3 million. What's the percentage of volume of radiological material, whether it's fixed or airborne or whatnot? Do you have any idea?

MR. CHIOU: We are in the process of characterizing that under this other remedial investigation. Right now we have an estimate of about 110,000 cubic yards out of that 1.3 million can actually be recycled without too much effort of decontamination. At least we can say that much is

clean at this point and that have some value for recycling.

MR. WOODS: There's a breakdown, and I want to make sure we have the right numbers for you. It talks about waste volume and breaks it down by the different categories of materials. So low-level waste, which would be radioactive waste, 7,813 tons.

MR. HOLBERT: 7,813?

MR. WOODS: That's correct. Mixed low-level waste 856 tons. RCRA waste, which is more hazardous waste, 39 tons. Then sanitary/industrial, this would be your typical building material, you know, that would be not contaminated, 136,597 tons. So that's kind of a breakdown of volumes that we're talking about.

Now, I think we can say safely that these are best estimates that we have now. These aren't, you know, will vary depending on characterization of material as sampling goes forward.

This process, once the decision is made, there will be a sampling process that would be part of the design and that's going to give us, you know, more precise numbers. But that gives you an estimate of what we anticipate with the buildings that are in this

document.

MR. HOLBERT: I have some other questions. If other people would like to ask questions, I would be more than happy -- I mean, I got ten questions or something like that I would like to ask. But if someone else would like to ask questions, I have no problem. I don't want to take up the floor the whole time.

MS. CHANDLER: I think we need to go through all ten of your questions. Some of the questions you have might be questions that other people have. So we can go ahead. You're first on the list. We will go through all yours.

MR. HOLBERT: I respect that very much. Thank you.

What is the schedule of the D&D, what will -- how will an on-site disposal cell affect the schedule of the project? Time frame?

MR. WOODS: The scheduling, I'm going to ask Jeff to help out with this. The way these buildings will be processed or handled, again, once a decision is made, they would be packaged into Remedial Action Work Plans. Essentially design packages. I think there's roughly, Jeff, if I'm not mistaken, 11

of those total, 11 packages of buildings.
In other words, you might have two or three or four that would fall in the first package. They would be sequenced first, and then they would be followed by another package.
So I think roughly right now there's an estimated schedule of nine or ten years as far as development of the designs and implementation of the designs.
Any decision on on-site disposal would not be made until sometime late next calendar year. So there's quite a bit of ground to cover before we get to that point.
MR. HOLBERT: So you're talking about 2012?
MR. WOODS: That's correct.
MR. HOLBERT: That's when, approximately first quarter, second quarter, third quarter, fourth quarter?
MR. WOODS: That would the end of the calendar year.
MR. HOLBERT: So you're talking about fourth quarter?
MR. WOODS: Yeah, November, December

2012.
So if the decision was made to have an on-site disposal cell, then there would have to be an evaluation of, you know, what that would do in terms of shipping the waste off-site, which would be the plan without the cell, versus being able to dispose of it on-site.
There would be a lag time between the decision for on-site disposal and when you would actually be able, you know, there's a design process, obviously construction process. So there would be, I think, a couple of years involved in that generally.
So it's likely that the latter, you know, let's say five or six groups of buildings may be able to go into the on-site disposal cell if everything stays with the current schedule. I don't know if I can give you a precise answer what the difference would be or what the change would be, but you would go from the scenario where you're shipping all this off-site to actually being able to dispose on-site, which should accelerate the process.
MR. HOLBERT: In DOE's opinion, so to speak, I'll just ask a question off your answer.
MR. WOODS: Sure.

MR. HOLBERT: In your opinion, DOE's opinion, are you leaning to on-site, off-site, transporting hazardous waste? What's your feeling? What are you looking at?
MR. WOODS: Well, I think where we're at in the processes now is we have to evaluate both options and we have to evaluate both options completely, and that's what CERCLA requires of us. If you're going to make the decision to demolish the buildings and dispose of this material, you have to do an evaluation as required by CERCLA to look at off-site, all of the requirements of off-site disposal, the implementability, the cost. There's criteria you go through to evaluate that.
At the same time you have to look at on-site disposal the same way. You have to look at the cost, the implementability. And in order to do, you know, a thorough evaluation of both options, there is data and information that we need now. So there is, you know, we do have to understand the geology under a location where we might consider on-site. We have to also consider, you know, what the receiving location would be if we go off-site.
So right now, I mean, what I would say

about that is that there will be an RIFS which will be available for public comment, there will be a formal public comment period, and both alternatives would be evaluated.
So I think --
MR. JEWETT: I can summarize it this way. This particular document and the decision that this represents is about 46 buildings. To look at all the buildings and structures on the plant site on that map and on model here, there's nominally about 400 total structures.
So to get some early action on some of the more ancillary support buildings, all this material must leave the site now unless this on-site decision is made down in the future. In that future decision DOE would express their preference whether they want on- or off-site. That will hit the streets for the public in June of next summer. So there you'll see whether DOE is leaning one way or the other.
At this point they're not leaning either because they're still doing the studies. But I would say June time frame nominally the public can expect to see what DOE's preference is for all remaining 400

structures.
MR. HOLBERT: So you're talking about the beginning of the third quarter instead of the end of the fourth quarter?
MR. JEWETT: They'll be sharing their ideas for public comment, and then all the way to -- comment like this, there will be a comment period. Then Ohio EPA and DOE have to get together and figure what did we hear from the public, what's our final decision, and then put that out for a formal legal document. So all that takes another three or four months.
MR. WOODS: That gets into the end of the calendar year.
MR. JEWETT: Exactly. So I think you'll see the preference in June, and then the end of the calendar year the decision would be final.
MR. CHIOU: Let me add one other input to the schedule question earlier. After the decision of these 46 buildings is made, the next step is to submit a work plan, and the work plan would commit to a completion date, and that date will be fixed. No matter how on-site or off-site the decision may be next year, the completion date for these D&D will be

fixed in those work plans.
MR. JEWETT: That's an enforceable milestone for Ohio EPA.
MR. CHIOU: And the reason it's taking ten years for these 46 buildings is because they are still being used for some purpose. So some of those will wait until the D&D is complete before we take them out. So not all of them are vacant and empty. So we can't knock them all down right away.
MR. HOLBERT: Thank you. I appreciate that.
Here's another question I would like to ask, unless somebody else wants to ask a question. For the waste that is proposed to be disposed of on-site, that's the question, on-site, I assume it will meet the WAC, Waste Acceptance Criteria. What is the criteria? What is the volume on-site waste, which you already answered that. I appreciate that. What is the criteria on the Waste Acceptance Criteria?
MR. JEWETT: I can express that one too. Again, these buildings by this definition, what's being asked at this point is should we take these buildings down or not. If the decision is to take them down, which is what the preference is for

these buildings, they must leave the site, unless the decision gets made in the future and then they can then join that future decision.
So the Waste Acceptance Criteria for the big action, remaining 400 structures, I think you'll start seeing what those numerical values are in that June time frame because geologic studies are now underway to see what those numbers would be.
But you're exactly right, a Waste Acceptance Criteria would have to be established all based on science and modeling, and then that becomes a make or break number for what can go in or not. Is that fair, J.D., around June?
MR. CHIOU: Yes. We can explain what is the objective of these Waste Acceptance Criteria, what type of level will there be in order to achieve the level of protectiveness that is required by the regulations.
One other requirement is to protect groundwater. We cannot impact the groundwater. So we want the groundwater still to be able to be used as potable water. That's the first requirement.
The second requirement is any potential human activity about 100 meters from the edge of this

potential facility needs to be protected, and to a level that you have less than 1 in 10,000 to 1 in 1 million chance of getting cancer type of impact.
CERCLA's requirement is we can not impact the geological system, and all these requirements need to be maintained for at least 1,000 years. So that's how we're going to determine a numerical limit as part of the Waste Acceptance Criteria.
MR. HOLBERT: I'm going to get off the subject just a little bit, okay? Just a little bit. Are you familiar with C8 -- remember the DuPont situation in Parkersburg, West Virginia? I got a home, one of my homes is across the river, and I'm a product of the C8 program. Cancer, people's groundwater was being affected. So it hits home with me personally. And until it hits home with people, you don't understand.
DuPont said that it was okay. Many, many years ago, this is the teflon situation, I used to know what the name of it is. I apologize for forgetting it. So I remember the bottled water being brought in. I remember getting a blood test. I remember all of the kids, my family members.
So when you talk about -- I remember the

situation. When you talk about one million years, 1,000 years, and I'm being respectful to you, believe me, it seems like it's this instead of this. So I ask you as a person that lives in the community, I have a home back there still, evaluate this very, very seriously because I'm a product of that. I appreciate it if you would.

I have another question unless someone wants to ask a question: How will the radioactive landfill affect redevelopment of the area if a landfill is put in the area? I know I'm jumping the gun a little bit, but I'm sure if you're honest with yourself and you're honest with us in this room here, you've thought about it. I'd just like to know what your thoughts are on that, if you would, please.

MR. WOODS: I mean, you know, again, full evaluation of on-site disposal is a decision separate from this one, as we talked about.

MR. HOLBERT: And I'm sure it's been talked about.

MR. WOODS: Correct. We're in the early stages of that. We talked a little bit about the time line.

MR. HOLBERT: Right. You can make it

brief.

MR. WOODS: Redevelopment is obviously a priority for the Department of Energy. It's something that's being looked at from the standpoint of what infrastructure's out there that might be able to be used after the clean up. So it's definitely something that's been talked about definitely as a priority.

MR. HOLBERT: I appreciate that.

MR. HAMILTON: If the cell were built on the plant site, is that ground going to be reusable with a cell sitting there? I think that's what he's trying to get at, wasn't it? Not just the disposal area, but the cell itself. Do you think companies will come in with that cell sitting there, how tall is it, 60 feet tall and however wide and long?

MR. WOODS: I mean, it appears -- again, we're a little bit ahead of ourselves in this discussion of the cell. But it appears that there would be enough land available that there would be, you know, potentially be able to accommodate on-site disposal and other development. It's a big site.

The estimates that we've got for the size of the cell, should it be considered and accepted, it

wouldn't consume so much area that it would inhibit other development, if that were something that, you know, there was interest in.

MR. CHIOU: Definitely a factor we are considering.

MR. HOLBERT: The off-site disposal facilities are designed and constructed to accept and properly manage waste, which you all know that.

The landfills are located in dry areas. So the potential for contamination of the groundwater is much less in this area. What is the potential, this is a question, what is the potential for contamination in the groundwater further with the on-site disposal cell? And what I'm referring to is the Teays Valley aquifer which runs from, is it Columbus clear down through to Chillicothe to I think it's Portsmouth. Is it under -- it's under the plant site. Have you looked into that, or is it still in the study stage?

MR. JEWETT: Still in the study stage. Again, just for tonight's action, this is for the 46 buildings. I would make sure that these type of questions you're asking certainly are germane when that next set of studies and decisions and DOE's

preferences hit the street this summer, because these are exactly the issues that will be up for discussion at that point.

But at this point we're certainly protecting any and all aquifer systems and that would be a key priority for that facility. In fact, whenever you make decisions that are related to this, you want to find the best available geology within the footprint of the site. In this case, anything that sits on bedrock would probably be ideal versus sitting on sand and gravel that would be those aquifer formations. So that would be looked at very heavily and scientifically for the next wave.

MR. HOLBERT: The reason why that question is being asked is what I refer to about the C8 situation. That has turned into, I don't know if it's a billion dollars yet for DuPont, it probably is over a billion. So I have a little knowledge, so to speak, on how a good thought turned into really a bad situation for people in our area. And we are Appalachian folks there. So we are the same type of people. And believe me, we aren't stupid. We've been called stupid, but we aren't.

I believe the EPA's position on allowing

landfills to be constructed with assurance of a waiver is not -- is to not allow the approval of construction, and that's a fact. The numerous groundwater wells within 1,000 feet of any of the proposed landfill sites, that's EPA law; correct? I knew you knew that.

Landfill sites, the waiver won't need to be granted for construction of an on-site cell and that's a law, right, unless there's a waiver; is that correct?

MR. CHIOU: Right.

MR. HOLBERT: I thought so. I just wanted -- I knew you were honest. I wanted to make sure we were on the same page here.

What is EPA's position on granting of a waiver for this purpose, for the on-site cell?

MR. CHIOU: Let me answer that. Under the current agreement between DOE and EPA we need to follow currently is that it does not require any waiver. So we can look at multiple options for location or different waiver on that disposal site, but we need to find at least one that does not need waiver to satisfy the agreement between Ohio EPA and DOE.

MR. HOLBERT: With the aquifer is what I'm saying, or what I'm going to talk to you about. With the aquifer situation, you know, that we have in our area, it's almost impossible.

MR. CHIOU: Marc mentioned earlier, and let me use that map again. The whole River Valley goes through the middle of the site.

MR. HOLBERT: Okay.

MR. CHIOU: But on both sides, east and west of the production area, we actually have barriers, and the edge of the aquifer stops around the sides. So that's why we're looking at potentially a site at this location on top of the bedrock and another site at the northeast corner of the property also on top of the bedrock. So they are not sitting on aquifer, at least, on a very thick bedrock more than hundred feet away from --

MR. JEWETT: Mention that bedrock is shale.

MR. CHIOU: Yes, it's shale Cuyahoga formation. Under that is Sunbury formation. Both of them are dry. And then under the front barrier is sandstone aquifer which is under pressure. So these are two possible locations that we look into, like

Marc mentioned, the best geology. We also identified this location because it has a footprint that we can move the waste placement location closer to the DOE property away from any existing swales outside of the DOE property. So we think this location may not need waiver.

MR. HOLBERT: How close are we to a fault line?

MR. CHIOU: We do not have any fault line close, at least 20 miles, 30 miles range.

MR. HOLBERT: How about the tremors that we've had lately from -- I mean, we've had two tremors in the last year.

MR. CHIOU: That was in Virginia.

MR. HOLBERT: I remember my bottle doing this on my desk (indicating).

MR. CHIOU: There's a requirement of seismic analyses we need to analyze. We need to have stability against any significant earthquake that's on record for the location. And we do have minimum distance we need to keep away from in terms of fault.

MR. WOODS: I think it's important to note, you mentioned a couple requirements, which is correct. There is a very lengthy list of requirements

that have to be evaluated for this on-site disposal alternative as well as the off-site.

So I think as we talked about the Remedial Investigation Feasibility Study that we're developing will have to look at every one of those alternatives. That will be made available to you. As we said, we're not doing that in this document. It's a little ahead of the game.

MR. HOLBERT: Well, you know us folks in Pike County, we like to be ahead of the curve, and we like to, you know, really know what's going on prior to it affecting folks in Pike County.

Everybody wants a job in Pike County, we need jobs in Pike County, but we do understand in Pike County that we need to be safe and we need to be respected.

Last is a question and a statement. Give me your position on the cell, if you would, please, I'll finish it after you give me your position on the cell. I mean, give me a position of how you feel about the cell. I mean, do you feel real comfortable with the cell? Do you really, you know, what's your feelings about this? You know, I hate to put you on the spot, but I would like to know. If you don't feel

like you can give me an answer tonight, that's fine. I respect that.

MR. CHIOU: I think I can speak to that since I am the technical lead, so I need to be responsible for any engineering decision. So my personal feeling is we can do it right. Okay. But we need to be very careful in terms of selecting the right location and use the right material in the design and very carefully select those waste acceptance materials. We can not put anything and everything in there.

Based on the best geology, best material, best design, then we set limits and say under that altogether, we still want to be 100 percent sure. Therefore, we want to only put certain amount up to certain concentration of material in there. Okay. And if everybody does their job correctly, then we can be safe.

And also it actually provides some ability for us to consolidate all the existing landfills that's already there sitting on aquifer. We actually may be able to reduce the footprint of the existing landfills. We have 96 acres already used as landfill. If we do nothing, nobody can use it for

anything else.

But by moving altogether into this about 70-acre area and do it right, with latest design, acknowledgment, and material, we actually can free up that 96 acres in the middle of the area. We can bring new industry in.

MR. HOLBERT: Can you show me, please, where you're talking about the 96.

MR. CHIOU: We have landfill in this area. See this kind of line of trees? The landfill here is 749-A we call, and there's another construction landfill called Peter Kiewit Landfill. That's actually the name of a company that built it.

This is landfill here, and you can see that's very plain. We have two closer units here also buried contaminated materials, and then we have two landfills here, Landfill 775, Landfill 774. Okay? And because at the time these landfills were constructed, the only landfill that actually had liner built underneath the waste material is this one. So most of these is straight to the aquifer (indicating).

MR. HOLBERT: So then we're seeping, I'm sure.

MR. CHIOU: They are. At least this

one (indicating).

MR. HOLBERT: What building is that close to, where you pointed just a second ago? What's the closest building to that facility or that dump site?

UNIDENTIFIED SPEAKER: 847.

MR. CHIOU: This is warehouse 847. 1000 building is here. That's the main office building on-site.

So we want to free up this whole area for industrialization (indicating), and improve the current impact to the aquifer.

MR. HOLBERT: Now, that's leaking right now, so to speak. Is it getting in the aquifer situation, so it's seeping in the groundwater and actually going into the water source?

MR. CHIOU: We have a barrier here built and we also have a pump to pump the water up and treat it. Actually Jim is in charge of that operation over there. So that's a long-term liability and cause for the government. We're not walking away from that, but we think if we have ability to improve it, we should take it.

MR. HOLBERT: Now, when that was

built -- let me ask you this question: It's not a smart question. I just want to ask you this question. What was the year, so to speak, when they built that, they said it's good for a million years, a hundred years, 500 years?

MR. CHIOU: No, there was no requirement like that. The requirement when I refer to the 1,000 years was established in the 19 -- late 1990 time frame. These landfills were in the seventies. That's why they even don't have liners.

MR. WOODS: The requirements have changed quite a bit.

MR. HOLBERT: Laws change all the time, don't they?

MR. CHIOU: Yes.

MR. HOLBERT: I appreciate the information. Here's my statement basically. I don't know how everybody feels, but some of the folks I've spoke with feel this way. We, the residents of Pike County and surrounding areas, do not want to take on the risk of higher cancer rates to dispose of this material on-site. I want you to listen closely here.

Any increased risk is too high if it affects your family, my family, and our future

families. Especially when there are facilities built to properly dispose of this hazardous waste or waste that's generated.

There are basically no residences in them areas off-site in Nevada where it's supposed to be, and they were selected to be built that way for the disposal of hazardous material. And basically what I would like to ask you tonight is to go home and think about our families here in Pike County, Scioto County, Adams County, Vinton County, Jackson County and where I grew up Washington County because people do care, and I appreciate your comments tonight, your honesty, and I thank you very much for giving me the time.

MR. WOODS: Thank you.

MR. JEWETT: I just would like to summarize for the remainder of the group that these are all excellent questions and concerns that I'm sure are on everyone's minds. The next decision, which is starting in June and would run through the fall is when we'll have major iterations on exactly those points. The decision -- so you're not missing any opportunities by not weighing in tonight. This is solely to take those 46 buildings down and ship them off-site. So all those issues will be front and

center later this summer. So I appreciate that.

MR. HOLBERT: You know, sometimes -- and this is something, I know everything is on record. Sometimes money should never play into the issue of people's lives, and sometimes I think us as people lose the focus about the right thing to do sometimes, you know. It's our money, it's our tax dollars. We all earn the tax dollars. We all pay, you know, I'm being paid by the government, you're being paid by the government, you know.

I've sat on the board of education for 11 years. I understand, you know, how people feel, you know, how they think a lot of times. One of the best school districts in the State of Ohio. It's proven that way. And we was always honest. So I didn't have any problems being honest.

So tonight I'm being very honest. I would like for you, if you're in a leadership role for the DOE, for the outside contractor, my ask of you tonight would be do the right thing for the folks. That's my asking of you. I appreciate very much your time and your honesty.

Thank you.

MR. WOODS: Thank you.

MS. CHANDLER: Next person on the list is Frances Mullins. Would you like to speak tonight?

MS. MULLINS: I'm just listening.

MS. CHANDLER: Sundee Angel.

MS. ANGEL: I'm just here to view.

MS. CHANDLER: Jack Angel.

MR. ANGEL: I'm just listening and absorbing.

MS. CHANDLER: Okay. Shannon Gee.

MS. GEE: Yes. You referred to the edge of the aquifer on the east side of the plant. What's the activity that's going on beyond the trees that the equipment is going through on the east side of the plant? It looks like you're testing for something. It doesn't sound like you're that for ahead in checking the ground for the on-site disposal. So what are you exactly doing on the east side of the plant behind the trees?

MR. WOODS: That's a geotechnical investigation. J.D.

MR. CHIOU: We are drilling soil borings. We are drilling to find where the groundwater elevation is. Also what type of material is under the ground surface. Whether there is any

connection between the rock and the aquifer. So that's what we are doing in this area.

In that area plus two more areas, because we also want to look at the area already disturbed, already a building, instead of these areas. So one area here we call Area A and another area is B, we call Area B. So there are four areas being looked at in order for us to find the best location, and we are not really starting from scratch there.

Back in early 2000 we actually looked at the entire site. The entire site was divided into 16 pieces. Out of them all those landfills were already there. We narrowed it down to those four locations for further evaluation, and that's what we are doing.

MR. JEWETT: Those are activities to support studies, not any construction to build waste disposal facilities. I think that was the heart of your question.

MS. GEE: I have another question. I notice the X-600C plant, it looks like it's pretty soon to be demolished or it's in your recent plan. There's a facility behind that that's called X-621 that is a rainwater treatment facility. Now, how will you treat that? Will you dig it up or will you use

it?

I know RCRA is your highest goal, to make sure that RCRA is followed. So I was wondering what will you do with 621 where the water goes to 617? What do you do in cases like that? You dig them up and put some other type of containment because there's always going to be the rain. The steam plant will be gone, but --

MR. JEWETT: Jeff, are those facilities part of this 46 decision?

MR. WOODS: 621. I don't have my glasses. Coal pile run-off facility.

MS. GEE: So that's part of that plan there?

MR. WOODS: Yes, that's correct.

MR. CHIOU: That's another reason we are not tearing down all the buildings right away even after the decision is made. It will take ten years because the coal pile near there is supporting the steam plant. And so we're only taking down when that pile is gone, it's no longer necessary.

MR. WOODS: There would have to be some other arrangement made for, you know, the function of that building. As J.D. said, that's why

these are sequenced in packages that extend over a number of years. There will be some use of these facilities over time. So the decision doesn't mean at that point we start, you know, all of these buildings. There is a sequence process.

MR. STONE: I will add additional information related to your question. We are looking at right now evaluating a scaled down version of the steam plant. We are looking at building a small steam plant so that we could support the buildings that require heat, steam heat for some of the remaining processes that have to occur and the comfort heating that some of the buildings still have. So we're looking at a scaled down version that we would want to construct so that it would be a predecessor activity to the actual demolition of the main plant.

We're evaluating what is the best way to go right now gas versus an electric fired boiler plant. And so that we, in the future as we move forward and tear down facilities, you can kind of -- as the main users come off, the main steam users come offline, you can kind of dial down the system to support just what you need. So we're looking at what -- from a cost perspective which would be the

best way to go.

But we would do that and have that online to support the on-site buildings before we tear down the steam plant. That is one we're looking at by virtue of the -- there's a lot of greenhouse gasses and things that are emitted from it right now.

The steam plant is way oversized for what it's doing now because of, you know, it was meant to help run a lot of the buildings that aren't really at full production. So that is something that is on the near horizon for us to be looking at. Added bonus information for you.

MS. GEE: The 621 facility is an amazing facility in regards to what they do to the water that gathers in that pond and what it looks like when it leaves the building. It's quite effective in the treatment of water in there. Thank you.

MS. CHANDLER: We have Hamilton first letter K.

MS. HAMILTON: No.

MS. CHANDLER: Josh Lamerson.

MR. LAMERSON: I've got a couple statements and a couple questions. Forgive me if I'm blunt. I'm not much of a politician.

As far as this cell goes, I live 1.3 miles from Perimeter Road, and I don't want to hear it. Plain and simple, I don't want to hear it. If there's a chance of my kids getting any kind of medical problems, I don't want to hear it. If there's facilities in Nevada and Utah and Oak Ridge that we've already been shipping this stuff to, why don't we continue shipping it there? It comes down to saving money.

I know there's railroad spurs in there and the railway has to be built up. And if they ship it off-site, they're going to have to build more spurs, put more people to work, more manpower to do it, which makes sense. And when it's done and over with, don't you think that the industry that moves in here would like to have that railway? I'm kind of nervous, so let me think a minute. It just makes sense to me that the railway is going to help develop that land once it's down and gone.

And my question is: What kind of influence does the public and the surrounding area have on DOE on this decision?

MR. WOODS: We talked a little bit earlier about the process, the regulatory process that

we are under, which is CERCLA. Public involvement is required under that process. There are, as we talked about, RAFS proposed plan that will be developed that will be made available and there will be a hearing similar to this where everyone can come and provide their comments, you know, pro, you know, for, against, however you want to comment. And then there is a responsiveness summary, responses that we have to develop to address those questions.

So that's required by us under the process. It's something we have to go through. And, you know, we don't have any way of not doing that. So that is, as we talked a little bit earlier, the time frame on the on-site disposal decision looks like it will be about June of next year, June of 2012.

MR. JEWETT: It's a dialogue.

MR. WOODS: It's a dialogue. There's an opportunity for public comment.

MR. LAMERSON: I've been to a couple of these meetings and they keep stressing that the public is going to have the biggest influence on whether this cell comes here or not, and I don't want to be too late to voice my opinion.

I know my grandparents, my parents and my

grandparents tell me back in the early fifties when they went to build this plant, you know, same standards, they had to give the public information and all that stuff, but it didn't make a bit of difference. It's still here. The public around here didn't want it here. There it is.

And by the time they let the public in on the information, it was too late, and DOE really frankly didn't care. They didn't care what the people wanted around here. They was going to build it.

So I want to know how much my input is going to influence getting this cell out of here and ship that stuff to Nevada. There's a hundred miles, 200 miles, whatever it is it, from the household, from the first family. The stuff's already there. It was built there for that.

Another question is: If the public has so much input on this, why wouldn't they get the input from the public before they go spending God knows how much money on doing this research to maybe put it here?

MR. JEWETT: I can address that. Those are all good questions, great questions. And I think we have to maybe step back for just a second and

figure out who is the decision maker here, because it's generally not us. We're the contractor folks doing the studies, providing the data, and basically laying out the alternatives for the government to consider.

The government is the decision maker. And that's really two entities. The Department of Energy would make the first, basically weighing in on all the information and the public sentiments, offering a proposal then to Ohio EPA for consideration. Both of those agencies, the DOE goes first, Ohio EPA weighs in on what they see, and then together they must consider the public's voice. They have to. We're ambivalent to that. We don't have a voice. All we are are scientists and engineers. So we really can't answer how the government is going to respond to your questions.

But that process that it goes through is respected. I do know that. The studies have to be legit and complete. And then the emotions and beliefs and feelings of the public is one of those factors. It has to be considered.

But it's not really something for tonight at these meetings. We're a little unprepared really

to have too much dialogue on that. We promise you that will be a big factor coming up starting this June. You're not too late.

The dialogue begins now. There are monthly what are called Site Specific Advisory Board Meetings, which are members of the public that volunteer their time to work with DOE on various matters. They meet every month. Those are open to the public.

At lot of neighbors have come to those meetings and expressed their views. Those are open. Feel free to -- it's not too late is my point.

MS. REVEL: First Thursday of every month.

MR. WOODS: I just want to add one thing to what you said, Marc. You mentioned why are we out collecting data right now. Generally speaking, the decision that's being made is a significant decision, obviously. There is a very rigorous process you have to go through, evaluate that.

So in order to come up with, you know, the right investigation, you know, the right feasibility study, we have to have quite a bit of data to support that. That's kind of the reason we're out

doing some of the things that J.D. described earlier, to make sure we do a thorough job in that evaluation. So we can present that, you know, to anyone that's interested in that.

MR. LAMERSON: I would just like to see them move over here beside me before they make their decision. Bring their families over there to live, then they can make their decision. That's all I have.

MR. WOODS: Thank you. Appreciate it.

MS. CHANDLER: Next is Mike Carrico.

MR. CARRICO: I'm here to listen.

MS. CHANDLER: Jason Knauff.

MR. KNAUFF: The buildings here, the 46 buildings you have there, how soon are you going to start demolition on those?

MR. WOODS: We talked a little bit about the process we're in right now. We're obviously getting public input on this.

We would expect sometime after the first of year, 2012, for a decision to be made. There is a decision document that will be issued called an Action Memorandum that will be signed by the Department of Energy, by Ohio EPA. That will be the decision point,

you know, we are going to go forward with this.

We then get into a process of design. I'm going to ask Jeff to comment on duration there, but there will be a design process that will go forward before we get to the point of actually bringing anything down.

Jeff, can you comment on that duration?

MR. STONE: Once the decision is made, there's an implementation document that has to be submitted to DOE and the Ohio EPA. That's called the Removal Action Work Plan. This document will contain the method for -- well, it contains multiple things.

We will generate a sampling and analysis plan and characterize the buildings. We've made certain judgments already based on process knowledge of what went on in these buildings and some historical surveys that have been done. So to get the basis for waste volumes and some of the hazards and things that we're going to expect to find.

So we'll have a sampling and analysis plan, collect the samples, verify the presence of any hazardous materials. And then based on that analysis, we'll have the waste stream. We'll know which off-site facility they'll have to go to. At this

point we don't have, as they said, no on-site facility to worry about.

So then if, you know, if there is no, you know, sanitary waste, general construction debris-type waste from a clean building, it could go to the Pike County landfill.

So anyway, that information will be our methods of how we're going to tear down a building with, you know, using shears, mechanical shears, grab holds, size reduction, sorting for recycling materials, whatever. All of that will be captured in a document.

We'll have other documents. A health and safety plan describing how the workers will be protected when they're performing the activities. We'll have a quality plan. We'll also have what they call an ARAR compliance matrix. It's all the appropriate -- let's see, what is it? Applicable or relevant and appropriate requirements, regulatory requirements that we need to comply with.

An example would be as we're tearing down the building, we want to make sure that storm water runoff from our area, construction area, we have silt fence and things there to protect the runoff so it

doesn't go off into the creeks, something like that.

So we'll have those kind of requirements all boiled down into a, you know, a document, kind of like this, that we'll submit to the regulators. They'll review and approve, comment on it, approve how we're going to do that. So that process takes several months to get that pulled together and get it submitted to them.

So assuming the time line that we're on right now with, I think Eric said first of the year getting an Action Memorandum and assuming it's a decision to move forward, it will be later this fiscal year, I'll say probably in the July-August time frame will probably be the earliest we would be able to tear down the first of the buildings.

There's a lot of paper that gets generated to get to that point. So we would work to the Removal Action Work Plan. If there's any deviations or changes required based on something we would encounter, we would notify DOE, notify the regulators, and then decide on what changes we need to make and move forward.

We have like a construction completion report that we generate and close up -- close the loop

on this activity that we would submit to the regulators, Ohio EPA.

I hope that answered your question. That was a long answer, I think.

MR. KNAUFF: So the decision on which facilities will go when will be based on probably the least risk, least contaminated radiation will be probably first, if they're not being used, or --

MR. STONE: There are certain facilities out there right now that are still being operated. There's certain -- based on those operations. Some of the facilities, there's certain support facilities that monitor or allow those operations to occur. So those wouldn't necessarily be in the priority.

It's some of the administrative buildings or some of the things that are further down the list there that you could go after and get now.

One of the things you do want to look at is whether or not there's, you know, the degree of contamination or other considerations you would take, you know, a look at.

MR. KNAUFF: Will some of those kind of be put off until the decision is made about the

cell, or will that effect the order of maybe demolition of those 46 facilities?

MR. WOODS: To take a shot here in answering your question. The facilities that were included in this and the way they were sequenced, I think, probably is more -- there was more influence as far as what was available, let's say what functions are going on in those buildings that might be able to shift it elsewhere and what can we get to early in the process.

I think I'm safe to say that was probably the primary consideration. There are some, you know, risks with these facilities, you know, lead and asbestos and things like that. So there are some risks. But it was more what do we feel like we can sequence early in the process and get to and not, you know, disrupt something that might be ongoing at the site.

MR. KNAUFF: So the order of demolition could change at any time on one of those, or is there a specific order you have to go by as far as your procedure you have there?

MR. WOODS: It's not -- it's not necessarily prescriptive. There can be, in other

words, there could be a situation that would change, you know, where one building that we got in a certain sequence, let's say we got a grouping of 11 and there's two buildings in the fifth group, there might be something that would change that sequence. There could be a reason, we did a visual to get the document, that might bump that up and allow us to remove that earlier or vice versa, push it back a little bit.

That's something DOE would have to work with EPA and make sure that all parties were in agreement on. This is our best estimate, our best approach right now. But there's certainly things that could change.

MR. JEWETT: There is one other variable that always rips through this and that is funding, how congress decides to fund the project. That can control sometimes the sequence. When you're dealing with support buildings, you want to kind of use them almost as fill-in work at times when there's a surplus of money and those sorts of things. So some of the sequence will be money driven as well.

MR. KNAUFF: Since you brought that up. I had heard that there was a cut in funding to

DOE. I don't know if this specifically affected this site or not. I don't know. Maybe you can touch on that.

MR. JEWETT: We're kind of all the techie guys. I haven't seen much of that.

MR. WOODS: I knew there was discussion going on about funding. I don't know if we have anybody here that has details on that.

MR. CHIOU: One other possibility of changing the sequence is these decisions naturally allow anybody, especially industry, to come forward and say, I want to reuse that building. If they can identify how they're going to do it, the building will be saved and turned over for potential reuse.

MR. KNAUFF: For industry to come in after?

MR. CHIOU: Yes.

MR. WOODS: That's a good point, J.D. Right now we don't see, you know, any use for these buildings, but there is a possibility if somebody comes in and we can, you know, get the facility clean for certain requirements, that possibility is out there for reuse.

MR. KNAUFF: That's all I have. Thank

you.
MS. CHANDLER: Herman Potter.
MR. POTTER: The question I have is I know once you have your work plan established, there's going to be milestones attached to that work plan. We understand that. We all know that those milestones are going to have money and bonuses and everything else tied to that.
The question is: If you come into a situation where you find these -- some of these buildings have some salvageable material that was not initially evaluated to be used, if you run into unknown contaminants that had not necessarily been evaluated, is there a mechanism in place to change those milestones?
And I know that you're all the techie guys. Let me tell you, I mean, I know how money works. When they throw out the bonuses, like somebody might just forget about the extra beryllium that they found in the corner over there and keep on going with the process.
So the question is: How easy is it going to be to go back through this process and change that without significant pressures on the funding as far as

bonuses and milestones?
MR. WOODS: I think, you know, we talked earlier about the Removal Action Work Plans, Jeff mentioned that. They would have dates that would be enforceable to EPA. DOE would be, you know, on the hook to meet those dates.
If there was a situation that came up, as you described, if there was contamination that was found, it would be a matter of renegotiating those dates. I think that, you know, as in any negotiations, you know, there's going to be both sides are going to have opinions and it would have to be discussed. But, I mean, there is certainly a possibility for dates to move if there is an unforeseen circumstance. It would be a matter of renegotiating that with EPA and working that out. So, I mean, that would be the process.
MR. POTTER: Excuse my ignorance. When you reach those situations, is there an opportunity for public comment to those situations, or are those things kind of done behind the doors?
MR. CHIOU: But one thing we want to point out is any worker at the site, if they are aware of any situation they feel work cannot be safely done,

anybody can stop the work and the company won't punish anyone that raised a safety concern.
So if we run into new conditions, new information that we need to replan our work, we will do that. If we feel it's unsafe, we will not proceed on that. Because if we hurt anybody, the consequences are much more significant. We don't get the bonus.
MR. POTTER: I understand that the people at the workplace know probably details about the situation. No offense, but they know -- some guy that's been there 30 years knows what he buried over there and he knows what the operation was prior to it being a warehouse or something like that. They may have had an operation there that's a long time forgotten.
I have one other question, and I apologize because this does get off the 46 buildings, but it is kind of significant because I know you were talking about reducing the footprint of the contaminated landfills. And I guess the question I have is: Do you intend or is the intent whether or not the on-site disposal cells are there or not, which we're not real crazy about, is there still an attempt to reduce the existing contaminated landfills? Is

there a plan in reducing the footprint of those landfills?
MR. JEWETT: If there's not an on-site disposal --
MR. POTTER: Even if there's not an on-site disposal site.
MR. JEWETT: I think those decisions have not been made. They have been talked about as possibilities that are improved by having an on-site disposal facility because you're not digging up legacy landfills and shipping them 2,000 miles away to other facilities. But that is one of the things that could come as a benefit for having on-site disposal. There's been no decision yea or nay to pick those up.
There are other decisions coming down the pike even beyond the ones we talked about for June. They'll really be looking at those in great depth.
The bottom line that I see from a technical side of this is when you're building an on-site disposal facility, if that is the chosen path, you still need additional soils to place the debris streams in. For engineering illustration here as the concept, it's a two-to-one ratio. For every one part debris, you need two parts soil.

So it does make sense to maybe have a driver to look at those landfills for soil generating purposes to enhance, you know, might as well use contaminated soil if you need a two-to-one soil-to-debris ratio. You wouldn't need those type of drivers if you were shipping it all off-site. So it would probably be less attractive than digging up those closed landfills.

Those closed landfills, while they were sources of contamination, as J.D. mentioned the groundwater and so forth in the past, and they're primarily solvent plumes, TCE that's come out of those rather than radiological constituents. All those were closed in concert with U.S. EPA or Ohio EPA. Those all have final decisions on them made in the seventies, eighties, and nineties. We would basically be revisiting decisions that were already deemed as final in order to do that. It would have to be some compelling case to make. A need for soil is one of those compelling cases in my mind that we would go forth.

MR. POTTER: Does the possibility of reclaiming maybe salvageable metal, steel in those landfills, is that a compelling basis also? Is it

possibly compelling?

MR. JEWETT: Is it possibly compelling, yes.

MR. POTTERS: But not as much as the soil?

MR. JEWETT: Correct. From my technical view, yeah.

MR. CHIOU: We are conducting an investigation or a record collection to understand those landfills. So that will help us to make that type decision. What would it take to consolidate? Jim is leading that effort.

MR. POTTER: Thank you.

MS. CHANDLER: Donald Shook.

MR. SHOOK: No comment. I'm here to listen.

MS. CHANDLER: Richard Demlow.

MR. DEMLOW: No comment.

MS. CHANDLER: John Knauff.

MR. KNAUFF: John Knauff. I've been employed at the facility since 1972, almost 40 years. Life-long resident of Highland County for almost 62 years.

This was not a hazardous waste dump when

the government came in here and built this plant. I'm quite proud of all the hard work a lot of my co-workers and stuff have done out there for 40 years producing the enriched uranium that we used for our power plants, our nuclear navy, and our bombs. I can recall the folks in Washington when they were talking about closing down the production. A lot of them said, we don't owe you anything. We paid you when you worked. You should be done.

Well, I would suggest to you that why should this area have, if anything else, a simple cancer on a piece of acre here if there's nothing left producing anything and the economy has forced reducing work. It wasn't here when they got here. Why should we have a cancer on even 80 or 90 acres of a landfill that can't be developed? Can't build a house on it. Can't grow crops on it.

Currently, you know, I would suggest to you, and no disrespect to the gentlemen here thinking that they're doing the right thing. Everybody that ever did anything on that plant site says they were doing the right thing when they done that, and we found out year after year after year after year that didn't bear out to be true. Doesn't help us much

today, does it?

Again, I would say that anything that comes to demolition at that site should leave that site. If you can't find a sanitary landfill that is perfectly legal to put it in already in existence, then take it to some other hazardous waste cell somewhere else because it wasn't here when you got here.

Like I said, I would love to see this facility still operating. We had a beautiful G set building that was up and running and producing 4,000 jobs, potential 4,000 jobs in 1985, and they shut it down. And I'm telling you you got a bunch of, and no disrespect to the companies, that's what they do. They're supposed to make money.

We have a bunch of contractors that are ready to make a lot of money doing whatever they can with this stuff, and they're going to push as hard as they can for the easiest way for them to make money, and they don't care what's left in this reservation here when they leave.

These folks and I who live around here, like I say again, I'm not speaking, I don't have any authority to speak for anybody else. I got a lot of

co-workers hanging around today that worked in that facility, and they didn't all die of old age. Now, we could have done it safer and better, but they told us they were doing it right at the time. I can remember a lot of those cases.

So my suggestion is I think you owe it to this community that if it ain't going to support one future producing job of a similar value that we have now, then take it with you somewhere else.

MR. JEWETT: Appreciate your statement.

MS. CHANDLER: Amy Power.

MS. POWELL: I have nothing to say.

MS. CHANDLER: The gentleman that just walk in, Farmin.

MR. FANNIN: Fannin.

MS. CHANDLER: Charles Fannin, I'm sorry. Would you like to --

MR. FANNIN: No. I'm here to listen, to see how things are going.

MS. CHANDLER: Is there anyone who would like to take an opportunity to make a comment at this time, or ask a question about the --

MR. FANNIN: I'd like to say what

Herman Potter and John Knauff said, I support 100 percent.

MS. GEE: This is my first time being at this meeting, and I appreciate it, and I didn't realize that everybody got a chance to speak. I just figured we listened to you.

MS. CHANDLER: We appreciate that.

MR. WOODS: As we talked about earlier, there will be other forums.

UNIDENTIFIED SPEAKER: When do you anticipate the first building is going to come down? I should say building or structure or whatever.

MR. STONE: I answered that. Assuming if the decision is made to move forward, an Action Memorandum should be published around the first of the year, and by the time we get all of our documentation approved -- prepared and submitted and approved to do the work, it would be probably in the July-August time frame, I think, of this year.

MR. WOODS: 2012.

UNIDENTIFIED SPEAKER: Are you going to have any other public meetings to comment on this like you're having this forum tonight?

MR. JEWETT: We had mentioned earlier

this is really just to talk about 46 of the buildings that have to leave for off-site disposal at this point. The decision what to do with the other 400 structures or so and the on-site disposal decision itself, that will probably get teed up beginning in June. So that's the next time frame.

UNIDENTIFIED SPEAKER: It would be my view that if we start down a path with the first building that comes down, that path ain't probably going to get changed. In other words, if we decide to dump these buildings into some pit out there, everything else is probably going to follow.

MR. WOODS: We talked about that a little bit earlier. If there is no decision for on-site disposal, which right now there isn't, that's a later decision. All of this material has to go off-site.

MR. JEWETT: By this decision, it must leave the site.

MR. CHIOU: Maybe let me make a statement. We are not here to support on-site or off-site. We are just doing our job to say what can we do if on-site option needs to be evaluated. What is the best we can do for on-site/off-site.

Similarly, we're going to compare to what's the best off-site facility will be available to us. Then we can compare the two and present data to the DOE and the public and Ohio EPA.

MR. HOLBERT: You was talking about the DOE making the decision, you know, down the road, so to speak, maybe even the fourth quarter, third quarter comments, fourth quarter decisions, so to speak, in 2012. My question is: Who makes the decision in the DOE's chain of command, so to speak, is it Chu, secretary?

MS. CHANDLER: No.

MR. HOLBERT: Who is it? I mean, give us some names.

MS. WIEHLE: Bill Murphy would be the one that would be signing the record of decision, whatever that decision would be. He would be the one signing it.

MR. HOLBERT: Is he the final decision?

MS. WIEHLE: Since he signs it, I guess technically.

MR. HOLBERT: I mean, I remember signing a lot of things through my career and it got

changed, I mean, just like whatever. But anyhow --
MS. WIEHLE: Ohio EPA plays a big part. They have to concur on everything. And trust me, we are working with them daily.
MR. HOLBERT: But isn't the EPA, United States EPA, isn't that an entity of the Ohio EPA?
MS. WIEHLE: Actually there's U.S. EPA, which is federal, and then there's the Ohio EPA, which is state.
MR. HOLBERT: But aren't they both connected? When I was in Washington --
MS. WIEHLE: They have similar regulations, but to say they are connected like chain of command, like one answers directly to the other, no. One is state and one is federal.
MR. JEWETT: They are independent programs, independent authorities. The state's authority is derived from the U.S. EPA granting them that authority to operate as a state EPA. So they are somewhat connected. They have to follow similar rule books and things. They are funded differently, have different authorities and different responsibilities.
MR. HOLBERT: What you're basically

saying is you can have all kinds of policies, but the Ohio Revised Code is the final say, so to speak? Ohio EPA is under the Ohio Revised Code?
MR. JEWETT: That's correct.
MR. WOODS: That's correct. They have to approve the decision.
MR. HOLBERT: We need to know who is going to sign it.
MR. WOODS: Okay. We will find out exactly who those are and as we said --
MR. HOLBERT: Some addresses and whatnot.
MR. WOODS: Yes. We have public responses and we'll make sure that's in it.
MR. HOLBERT: I appreciate that. Thank you very much.
MR. LAMERSON: I just thought of a couple questions. How's come if this is, and I may be way off on this, I don't know. Why is the Ohio EPA regulating a government facility? Why isn't it the federal EPA?
MR. JEWETT: Well, I'll try to answer it best I can as a techie. But there are certain sites that U.S. EPA reserves for their purview to

regulate, and they're based on kind of a scoring model under the superfund law where if they score at a certain level, then U.S. EPA make those very high priority sites and they watch them. If they score at a slightly lower level but are still a clean-up site, then they can work arrangements with the affected states for them to be in the lead. That's how Portsmouth was scored.
This has been a reasonably clean facility over the years if you compare it to the Fernald facility that was over in Cincinnati, which had a lot more contamination and a lot more waste. That was one that U.S. EPA had scored higher and chose to self-regulate.
So because this was operating reasonably clean over the years and there's no real, you know, huge contamination that's left the boundaries or anything like that, U.S. EPA saw fit to allow Ohio to be in the lead. Once you get to this final decision of what is the right course of action, U.S. EPA still has to weigh in and agree with Ohio that they made the right call. So that will still be part of this process.
MR. WOODS: I think just to add to

what you said there, Marc, the Department of Energy is a federal agency and they still have to comply with the rules of the State of Ohio which are, you know, regulated by Ohio EPA.
MR. JEWETT: Ohio regulates them like they would any other industry.
MR. LAMERSON: My second question is: This is a DOE jobsite; correct? How's come DOE is regulating their own jobsite?
MR. JEWETT: Again, that's where Ohio EPA steps in.
MR. LAMERSON: No, No. I'm not talking about EPA. I'm talking about like -- like I'm new here, so. Did the NRC used to regulate it before they took over from USEC? Who regulated it last year?
MR. JEWETT: When it was -- again, speaking from a technical perspective, when it was USEC, they were a private company here operating and making a product, a nuclear product. So they were regulated by the NRC as a private firm.
In terms of regulatory entities, NRC and DOE kind of share similar pedigrees, if you will, and have similar regulatory obligations. So when it was returned from USEC back to the federal government, DOE

became the regulator over day-to-day activities there.
MR. LAMERSON: Just seems kind of like a conflict of interest to me. You know, if I was on a jobsite and I regulated my own jobsite, I'm going to do it how I want, you know.
MR. HOLBERT: Who are you going to answer to?
MR. LAMERSON: Right. Who do they answer to? That's what I'm saying.
MR. JEWETT: I think I'll say it this way: Their job is to regulate health and safety issues on the site against or over us as the contractor. So they are regulating us.
They are -- it's their money. You are right. But the EPA is going to look at it for environmental matters and all the health and protection kind of things that are environmentally related.
MR. LAMERSON: What about safety?
MR. JEWETT: That's what I'm saying. DOE has all their own regulations on health and safety for day-to-day operations that we have to meet as the contractor.
MR. LAMERSON: Right. The contractor

has to meet DOE's health and safety regulations that's regulating their own jobsite. So don't you think maybe they can fudge a little here, fudge a little there if they need to?
MR. CHIOU: Well, actually DOE jobsites are the safest jobsites among the similar type of industry if you compare the records. So it doesn't mean when DOE's regulating DOE's site, they just close one eye and let things happen.
MR. WOODS: I think there's two elements to this. Because as far as how DOE operates their site and their contractors operate, they have got to make sure that their contractors are operating in a safe manner and following rules. When it comes to a decision like whether or not to D&D the building, create an on-site disposal cell, they're very much regulated by the Ohio Environmental Protection Agency on those type of decisions.
I think there's a couple of different levels of regulations you're talking about. Making sure their workers are safe, that's very much DOE's responsibility. Whether or not they've evaluated a decision for on-site or off-site disposal and they've involved the public and they've gone through the steps

they need to, that's very much something that they're regulated from the outside.
MR. LAMERSON: That's not what I'm talking about, the on-site/off-site cell. That's not what I'm talking about. When DOE comes through there and they do their walk-throughs and they look and see, well, that's not right, but they turn their head this way and keep right on going.
MR. CHIOU: It's not like that. Let me give you an example of safety.
MR. LAMERSON: Who do they answer to? Who does DOE answer to?
MR. CHIOU: Just compare the construction industry. We do similar work here. If you look at Las Vegas when they were in a building boom a few years ago, the number of fatalities is 15 per year, 15 people die building those casinos per year. But you look at the DOE complex, 10, 15 facilities annually, you don't have fatalities. Maybe once in ten years, one in ten years.
So I encourage you to look at those statistics. I think we can provide that too. So everybody knows DOE jobsite is really the safest jobsite.

We have a lot of workers come to our site brand new for the industry and after a year or two they realize they are in totally safe environment. They are trained. They are provided equipment. They are properly taken care of. They can stop work any time they see something they don't feel comfortable with. That won't happen in the private industry.
Another example, shipyards, okay. The number of injuries in shipyards very, very significant on an annual basis versus what we are doing here. Similar type of work.
So every time we work at our jobsite DOE comes in to check on us. And if the contractor is not following the DOE rules, we got penalized or as he mentioned, just by not following the rules, we don't get it. And if we have any significant accident happen, we won't get the next job. So that's the incentive for the contractor to do it correctly and safely. DOE makes sure of that. That's the case.
MR. KNAUF: John Knauff. I realize that's not why we're here this evening. But with all due respect to you all, I've been out there for 40 years and that's not true. You can look at the statistics, and statistics are only as good as those

people who prepare those statistics, and the fatalities, obviously that's obvious.

But the stop work authority is only a recent event out there. I've been out there way too many times and I've went toe to toe with an HR guy on following orders and asked him specifically if my man knows that those chemicals are no good and it's not lawful to dump them down the sewer and your foreman is telling him to dump them, does he have to follow the order and he says absolutely. So I'm telling you stop work authority is a new event out there.

MR. CHIOU: It's new because DOE takes over for USEC.

MR. KNAUFF: DOE has been there a long time ago, pal. This may be some new thing for DOE. Maybe it's true, but I'm just saying that this has not been true for 40 years. I can't say that one day you'll wake up and say I'm going to do it different and that's going to be the way it is every day. We will see how that progresses.

So I say again, I've been there 40 years, and I've worked in the actual construction and actually worked in the work areas, and I doubt seriously if you have been in that environment.

MR. CHIOU: We need to prove it to you.

MR. KNAUFF: That's right.

MR. STONE: I'll just add one more thing. I'm on the paper end, the group I work in, facility engineering. We help put together the work authorization documents and kind of the engineering documentation to execute work in the field.

And there's a tremendous amount of effort spent on integrated safety management, and that's where we pull in -- we pull in a team of people that consists of the, all the way down to the operator, the execution level, all the safety, different safety functions like your industrial hygiene, radiological control group, environmental compliance, we have a fire protection engineer. You know, the list goes on of the folks we bring in when we plan our work. We develop the scope, we analyze the hazards associated with performing that work, we try to engineer out, we try to avoid them.

So if we can't develop mitigating, how do we mitigate those? So there's a tremendous amount of work that I know that Fluor-B&W brings to the table. There's a lot of serious thought that goes into

planning and executing our work. And, you know, the workers do have the authority to stop work. Especially if you encounter a condition that wasn't initially analyzed for too, and nobody is penalized at the end of the day for stopping work.

We've actually had a situation where there was a concern whether or not a crane was fit for duty, and there were some important activities going on, but they stopped work and paused, went back and evaluated the situation and, you know, got the right people involved. So, I mean, it does happen, but I can't speak for the past because I wasn't here.

But I know Fluor-B&W is very serious about planning out your work, working your plan and doing it safely. Everybody should go home the way they came in that morning, you know. So, anyway I'll just add that.

MR. JASON KNAUFF: Jason Knauff.

How much experience does Fluor-B&W have with the chemicals and hazards that are on this site, the technetium, the uranium and so forth?

MR. CHIOU: Maybe I can answer that. Personally I worked at Fernald for 14 years, and the hazards at Fernald is mainly uranium, radium,

technetium. So very similar to the uranium processing plant.

MR. KNAUFF: Beryllium.

MR. CHIOU: Yes, Beryllium. I also worked at Savannah River. That's another experience that Fluor company has. We also had plutonium there. That's another material for bomb making. We also stored nuclear fill there and also do processing in the canyons. Fluor also has experience at the Hanford site, and that's a similar type of operation like Savannah River.

So I think all the types of chemicals we need to handle here Fluor has many years of experience. We can always reach back to other projects. Like Savannah River, we have a national lab there and I have been utilizing experience and knowledge by bringing their expert here to help us how do we collect data.

So we have a very broad reach of experience and knowledge. Even if we need to know a DOE site that's managed by other contractor. Like Oak Ridge, we entered arrangement too with Ohio EPA and DOE for Oak Ridge to look at their D&D of K25 and their on-site disposal facility. October 25th we

spent all day there. So the contractor there actually helped us to understand how they operate, how they make a decision.

So I think the entire DOE process of working very closely together, sharing experience and lessons learned regardless what company we are working for because we all working for DOE. The only way DOE can get funding is to get things done and done safely.

And the question about funding, if we don't perform, DOE also will suffer. If we do a job correctly, safely, and make progress, a lot of you work at the site, that's what we rely on, to get the job done and the funding we need.

MR. WOODS: J.D. commented on the Fluor experience. I don't know that any of us commented in detail, but we also have B&W and the sites they have been involved in as well, kind of partner and part of the organization. So I think there's a lot of complex experience.

MR. CHIOU: They are working at another very high level uranium type of facility. They're at West Valley currently and Savannah River. Fluor actually handles TRU waste also, like plutonium type of waste. So we have a lot of experience

combined together.

And I think the local knowledge of what happened in the past 40 years, especially what is in the landfill, just as an example, we need to rely on your knowledge and your experience and join together to solve the problem here. Again, we are looking for the best solution for the whole community. I think Ohio EPA and DOE look at that responsibility very, very seriously.

MS. REVEL: There's all kinds of great information on our website if you guys want to check that out. There's great information about Fluor and great information about B&W. Their website is on here too. So please look it up. And you can look up Fluor individually, B&W individually, and answer a lot of your questions about their past experience.

MR. KNAUFF: Okay.

MR. SHOOK: You mentioned earlier about having meetings, you know. You've got people in that plant site, like John said, been there 35, 40 years, experienced people that know more about that plant than anybody. I think utilize the people that's been there since the process was there. There's a lot of knowledge out there with the local people. I think

it'd be smart.

DOE, you folks should utilize those people instead of bringing outside people in from other sites. They bring all the outside contractors in and the local people got to go home and sit on the porch and watch them go by.

I hope whatever decision they make, if we have any part in it at all, who knows, you know, we can have these meetings and talk about it. Talking about it and getting it done is another thing.

But, you know, nobody wants it here. I don't want it here. I got a granddaughter that lives right there. The landfill is literally going to be in her back door on Loop Road. The one site is right in her back door, you know.

Although, too, you look back, if you take it out west, somebody probably lived there at one time that didn't want it in their backyard. Big problem. Anything you go at, whether you're making or building, there's always byproducts or waste to everything. You burn firewood, you have waste. But nobody wants to deal with it.

But I hope you make a good decision. Like I said, I think you need to utilize the people on

plant, because there's a lot of good knowledge there. You got a lot of engineers that come back for part-time work. There's good knowledge there. A lot of your operators, some of us retired, bring them back part time if you have to to get that experience that you need and right down to the maintenance guy, the electrician guy that's done that work. We're going to get into something here we're not prepared for because you may not know it, I may not know it, but he might. We got into this a few years back. We need to do something. Go another route with it.

That's all I got to say. I appreciate you sitting and listening to us.

MR. WOODS: Thank you.

MR. STONE: Thank you.

MR. LAMERSON: Josh Lamerson. I got one more comment.

As far as that goes, I don't know who needs to know about it or anything else. Getting this out into the public for the people to know about the public meetings, I think it needs to be stepped up a notch. There's a lot of people that have no -- still have no idea. I mean, they can't get on the mailing list unless they come to a meeting and sign to get on

the mailing list. A lot of people around here have no idea what's going on right now.

Somebody needs to put more ads in the newspaper, bigger ads in the newspaper, not inch by inch, and maybe put it on the radio or something. We need to reach out to the public a little bit better.

MR. JEWETT: We do appreciate that, and that's one of our main focuses since we've been here now to try to step up exactly that.

And just for information, I guess, the next true public meeting, which is kind of a status update on the project and where it's going, will be in January. So that will be the kind of thing that will be on the radio and all that sort of thing. We'll make sure that gets out there. Appreciate that.

All right, folks. Thank you.

MR. WOODS: Thanks everybody. Appreciate it.

(Whereupon, the proceedings were concluded at 7:50 p.m.)

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Original Author(s) / Organization: DOE

Technical Editor(s) /Organization:

Format: ☒ Document: 240 Total # Pages ☐ Transparencies / Presentations
☐ Photos: ____ # Prints ☐ Electronic Media: Type ____

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