



Department of Energy

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DEC 23 2010

Ms. Maria Galanti
Site Coordinator
Ohio Environmental Protection Agency
2195 Front Street
Logan, Ohio 43138

PPPO-03-1088949-11

Dear Ms. Galanti:

**REVISED CONSTRUCTION COMPLETION REPORT FOR PHASE I OF THE
REMOVAL OF THE X-633 RECIRCULATING COOLING WATER COMPLEX AT
THE PORTSMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO AND
RESPONSES TO COMMENTS**

The Department of Energy is submitting the enclosed revised *Construction Completion Report for Phase I of the Removal of the X-633 Recirculating Cooling Water Complex at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE/PPPO/03-0141&D2) to the Ohio Environmental Protection Agency (Ohio EPA) in response to Ohio EPA comments received November 29, 2010. Also enclosed are responses to Ohio EPA comments.

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

Sincerely,

A handwritten signature in black ink, appearing to read "J. Bradburne", is written over a large, stylized flourish.

Joel B. Bradburne
Portsmouth Site Lead
Portsmouth/Paducah Project Office

Enclosures:

1. Revised *Construction Completion Report for Phase I of the Removal of the X-633 Recirculating Cooling Water Complex at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*
2. Responses to Ohio EPA comments

cc w/enclosures:

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Administrative Record – CERCLA
PPPO Records/LEX

**Construction Completion Report
for Phase I of the
Removal of the X-633 Recirculating Cooling Water Complex
at the Portsmouth Gaseous Diffusion Plant
Piketon, Ohio**



This document is approved for public release per review by:

Henry H. Thomas

07/08/2010

PORTS Classification/Information Office

Date

**Construction Completion Report
for Phase I of the
Removal of the X-633 Recirculating Cooling Water Complex
at the Portsmouth Gaseous Diffusion Plant
Piketon, Ohio**

Date Issued — December 2010

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Prepared for the
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Portsmouth/Paducah Project Office

Prepared by
LATA/PARALLAX PORTSMOUTH, LLC
managing the
Environmental Remediation Activities at the
Portsmouth Gaseous Diffusion Plant
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for the
U.S. DEPARTMENT OF ENERGY

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ACRONYMS

ACM	asbestos-containing material
ARARs	applicable and relevant or appropriate requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
DOT	Department of Transportation
EE/CA	Engineering Evaluation/Cost Analysis
gpm	gallons per minute
IGWMP	Integrated Groundwater Monitoring Plan
mg/L	milligrams/liter
NPDES	National Pollutant Discharge Elimination System
OAC	Ohio Administrative Code
pCi/L	picocuries per liter
PORTS	Portsmouth Gaseous Diffusion Plant
PPE	personal protective equipment
RAWP	Removal Action Work Plan
RCRA	Resource Conservation and Recovery Act
RCW	recirculating cooling water
TCLP	toxicity characteristic leaching procedure
USEC	United States Enrichment Corporation
WAC	waste acceptance criteria

EXECUTIVE SUMMARY

This Construction Completion Report documents the completion of Phase I (removal of above-grade structures) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) non-time-critical removal action for the X-633 Recirculating Cooling Water (RCW) Complex at the Portsmouth Gaseous Diffusion Plant (PORTS). The X-633 RCW Complex was located at coordinates E10260, N11920 in the northeastern portion of PORTS along Perimeter Road.

The X-633 RCW Complex was comprised of the X-633-1 Pump House, which included a below-grade wet well; four cooling towers designated as X-633-2A, X-633-2B, X-633-2C, and X-633-2D and their associated basins; nine valve vaults; block valve houses adjacent to the four cooling towers; transformer, tank and valve house pads/slabs; and a tank containment structure.

Based on the data summarized in the *Engineering Evaluation/Cost Analysis for the X-633 Recirculating Cooling Water Complex at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2009b) and the *X-633 Recirculating Cooling Water Complex Removal Action Work Plan at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2010), asbestos, lead, cadmium, and chromium were contaminants of concern.

The X-633 RCW Complex non-time-critical removal action Phase I activities included removal of asbestos-containing material; equipment; the wooden, above-grade portions of the cooling tower structures; the above-grade portion of the pump house; and other above-grade concrete features (the block valve houses located adjacent to the cooling towers, the block walls that separated the transformers, and the containment dike that surrounded the empty sulfuric acid tank). Phase I also included disconnecting and terminating piping and utilities, as required; Site restoration such as re-seeding and installing temporary construction fencing around the basins, pump house wet well, and transformer pads; demobilization; and waste disposal. These activities have been completed in accordance with the *X-633 Recirculating Cooling Water Complex Removal Action Work Plan at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2010) and the applicable and relevant or appropriate requirements (ARARs) outlined in the *Action Memorandum for the X-633 Recirculating Cooling Water Complex at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2009c).

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) has completed Phase I of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) non-time-critical removal action for the X-633 Recirculating Cooling Water (RCW) Complex located at the Portsmouth Gaseous Diffusion Plant (PORTS). This Construction Completion Report documents the completion of Phase I of the X-633 RCW Complex non-time-critical removal action which focused on the removal of the above-grade X-633 RCW Complex structures.

The X-633 RCW Complex was located at coordinates E10260, N11920 in the northeastern portion of PORTS along Perimeter Road. Figure 1 is a site map showing where the X-633 RCW Complex was located. Figures 2 and 3 provide a detailed layout and photograph, respectively, of the X-633 RCW Complex before demolition was initiated.

1.1 CONSTRUCTION COMPLETION REPORT PURPOSE AND SCOPE

This Construction Completion Report documents completion of Phase I of the X-633 RCW Complex non-time-critical removal action, as described in the *X-633 Recirculating Cooling Water Complex Removal Action Work Plan at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2010) (hereafter referenced as the X-633 RAWP). Removal action alternatives for the X-633 RCW Complex were evaluated in the *Engineering Evaluation/Cost Analysis for the X-633 Recirculating Cooling Water Complex at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (hereafter referenced as the X-633 EE/CA) (DOE 2009b), and the decision to remove the X-633 RCW Complex was documented in the *Action Memorandum for the X-633 Recirculating Cooling Water Complex at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (hereafter referenced as the X-633 Action Memorandum) (DOE 2009c). The X-633 EE/CA and the X-633 Action Memorandum included the entire X-633 RCW Complex non-time-critical removal action (both Phase I and Phase II activities). In order to maximize resource utilization, the X-633 RAWP divided the non-time-critical removal action into Phase I and Phase II activities. Phase II will be initiated at an unspecified time in the future (see Section 6.4).

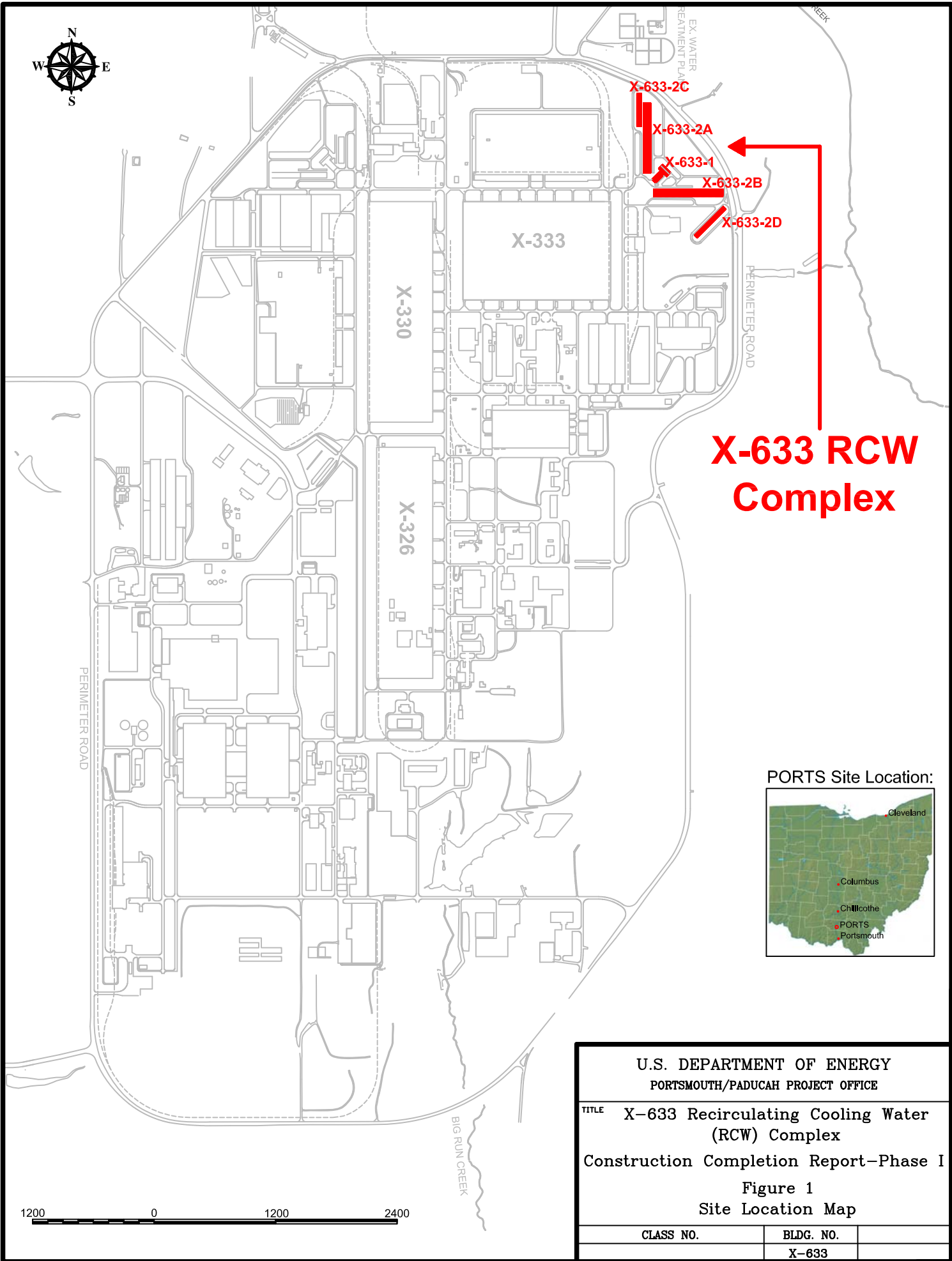
1.2 AREA DESCRIPTION

The X-633 RCW Complex was located in the northeastern portion of the PORTS property in the area identified as Quadrant II in the *Quadrant II RFI Final Report* (DOE 1996).

1.3 SITE DESCRIPTION AND HISTORY

The X-633 RCW Complex was comprised of the X-633-1 Pump House, which included a below-grade wet well; four cooling towers designated as X-633-2A, X-633-2B, X-633-2C, and X-633-2D and their associated basins; nine valve vaults; block valve houses that were located adjacent to the four cooling towers; transformer, tank, and valve house pads/slabs; and a tank containment structure.

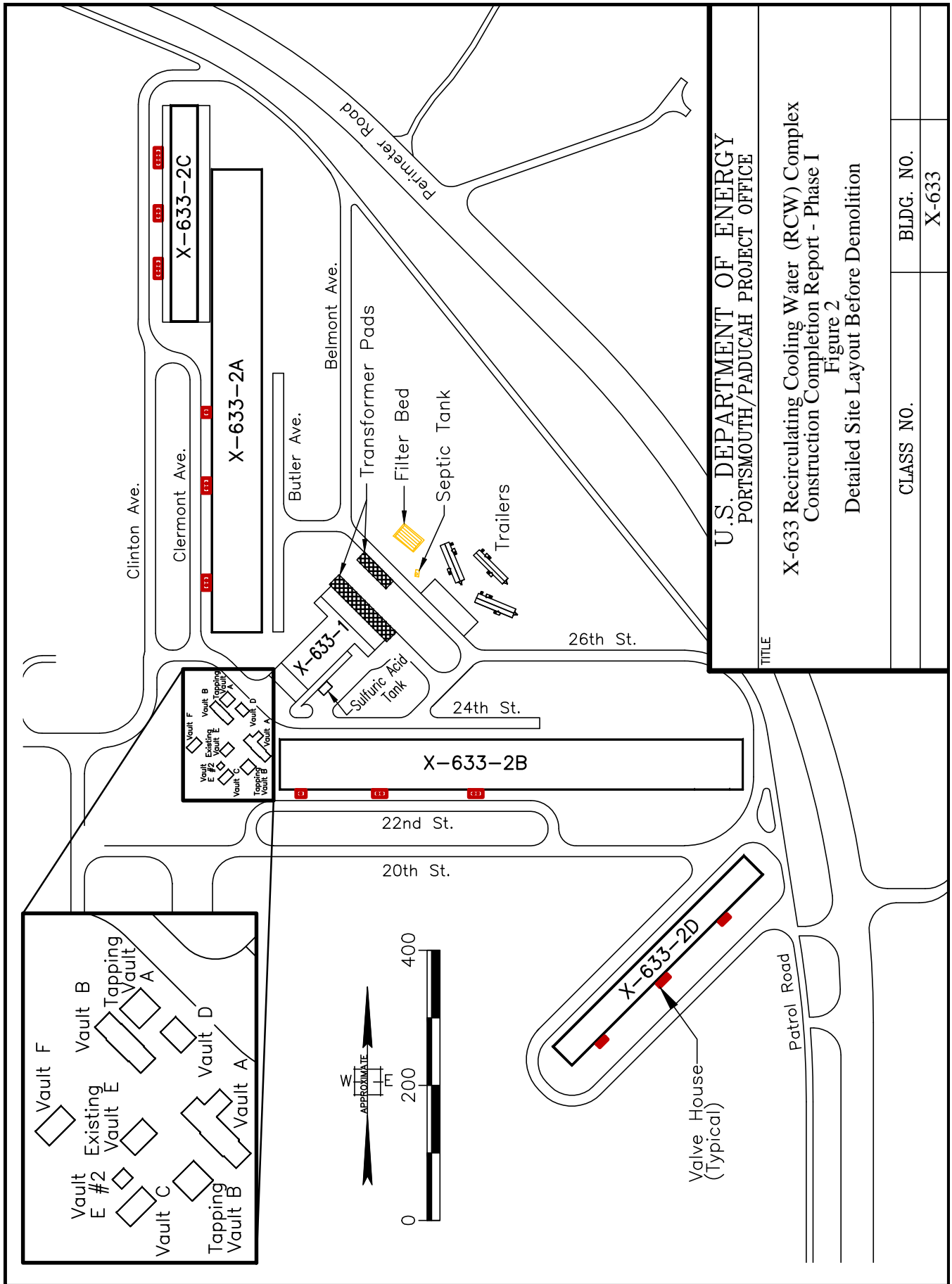
The X-633-2A and X-633-2B Cooling Towers were built in 1954 as part of the initial PORTS construction. The X-633-2C and X-633-2D Cooling Towers were constructed in 1976 and 1978, respectively. Six valve vaults, designated as A through F, were constructed when X-633-2A and X-633-2B Cooling Towers were built. When X-633-2C Cooling Tower was constructed, an associated



**X-633 RCW
Complex**



U.S. DEPARTMENT OF ENERGY PORTSMOUTH/PADUCAH PROJECT OFFICE		
TITLE	X-633 Recirculating Cooling Water (RCW) Complex Construction Completion Report-Phase I	
	Figure 1 Site Location Map	
CLASS NO.	BLDG. NO.	
	X-633	



U.S. DEPARTMENT OF ENERGY
 PORTSMOUTH/PADUCAH PROJECT OFFICE

TITLE

X-633 Recirculating Cooling Water (RCW) Complex
 Construction Completion Report - Phase I
 Figure 2

Detailed Site Layout Before Demolition

CLASS NO.

BLDG. NO.

X-633

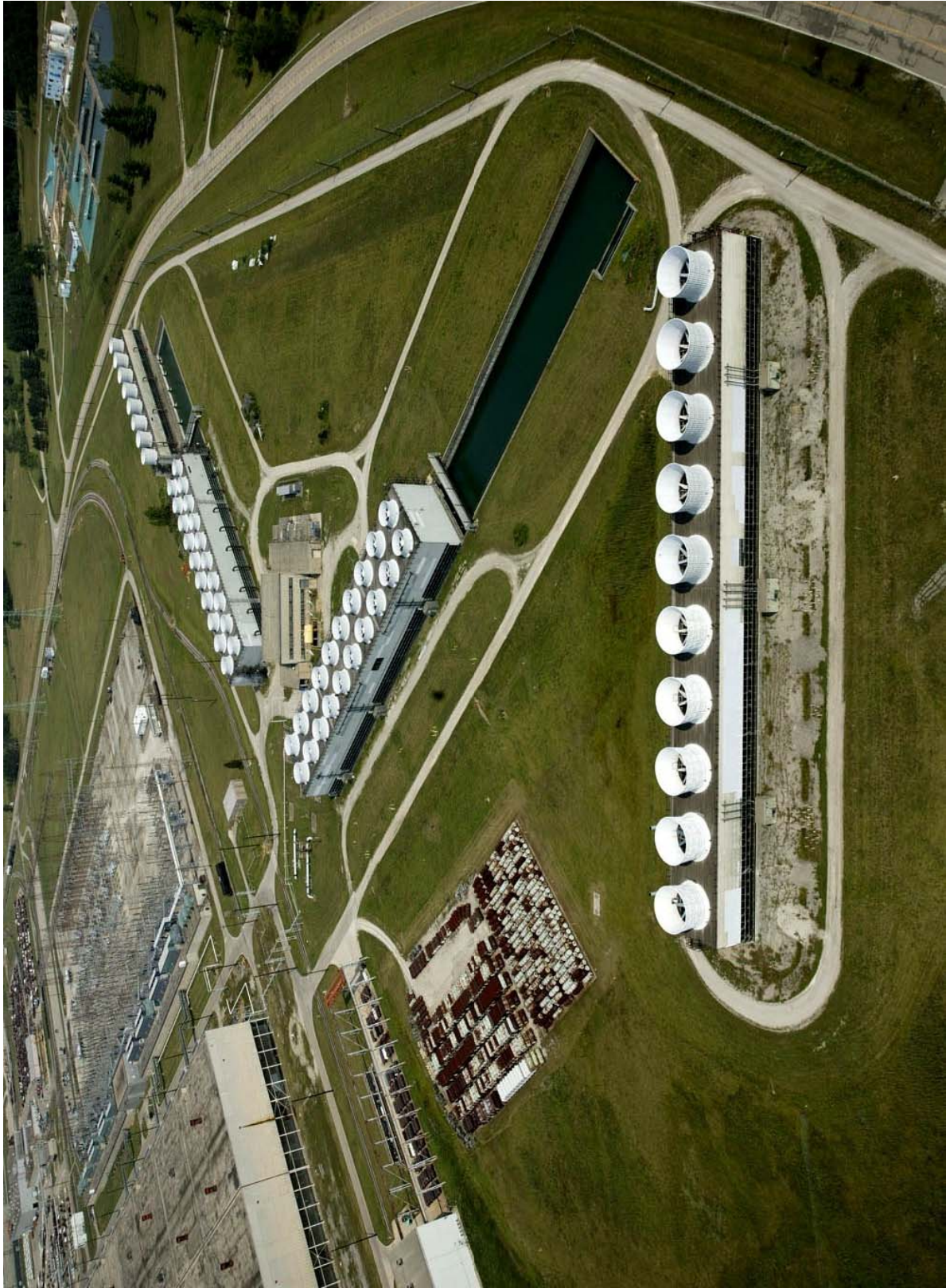


Figure 3. Photograph of X-633 RCW Complex before demolition

valve vault, which was also designated as ‘Valve Vault E’, was built. Two additional vaults, designated Tapping Vaults A and B, were built when X-633-2D Cooling Tower was constructed.

The X-633-1 Pump House was an 11,000-sq-ft, reinforced concrete and steel building with transite siding. Four 800 horsepower pumps, each capable of pumping 13,000 gallons per minute (gpm), and ten 1250 horsepower pumps, each capable of pumping 20,000 gpm, were situated in a below-grade wet well under the pump house. The pump system circulated cooling water between the X-333 Process Building and the four cooling towers. Floor drains in the X-633-1 Pump House conveyed water that leaked from the pumps to the wet well underneath the pump house. The pump house wet well, which remains in place, is 98 ft by 57 ft by 26 ft deep.

X-633-2A, X-633-2B, X-633-2C, and X-633-2D were wood-framed cooling towers that stood over concrete basins. Piping and concrete flumes connect the basins, which were not removed as part of the Phase I non-time-critical removal action, to the wet well beneath the X-633-1 Pump House. The cooling towers removed heat created by the compression that occurred as part of the gaseous diffusion process. Minor heat loads from air conditioning, lube oil coolers, and other miscellaneous sources were also removed. The cooling towers had a total of 58 discrete cells or chambers that contained plastic, high-efficiency, honey-comb-style fill that was supported by wood framing. Hot water from the X-333 Process Building flowed downward through the fill; as the water flowed downward, upward flowing air cooled the water. Air flow or draft was achieved using electric-driven fans that were a maximum of 22 ft in diameter. Basins under each tower collected the cooled water where it drained by gravity to the below-grade wet well under the pump house.

Each of the X-633-2A and X-633-2B Cooling Towers had 20 cells and a footprint of 24,000 sq ft. The X-633-2C and X-633-2D Cooling Towers had 8 and 10 cells, respectively. The X-633-2C Cooling Tower had a footprint of 15,000 sq ft, and the X-633-2D Cooling Tower had a footprint of 18,000 sq ft.

The four cooling tower basins range in size from 42 ft by 322 ft to 73 ft by 684 ft and are 4 ft to 20 ft deep. The basin walls and floors are as much as 1.5 ft thick and are made of reinforced concrete. Nine valve vaults are located in a cluster south of the X-633-2A and west of X-633-2B Cooling Towers. The vaults contain a variety of sub-grade valves, which were used to control the flow of water to and from the X-333 Process Building. A redundant system of underground supply and return headers, some as large as 72 inches, conveyed the cooling water to and from the X-333 Process Building. Water that was lost through evaporation was replenished from the X-611 Water Treatment Facility through a single 30-in make-up water line. The vaults are constructed of reinforced concrete and are as much as 14.5 ft deep. The smallest of the valve vaults is 6 ft by 9 ft. Valve Vault A, the largest vault, is irregularly shaped, with a maximum length of 44 ft, and its maximum width of 12 ft.

On October 1, 2008, while the X-633 RCW Complex was leased to the United States Enrichment Corporation (USEC), it was removed from service. The X-633 RCW Complex was returned to DOE on June 29, 2009.

1.4 CONTAMINANTS OF CONCERN

The X-633 RCW Complex was characterized to identify contaminants associated with the structures. Characterization data for the X-633 RCW Complex are summarized in Section 2.2.2 of the X-633 EE/CA. After the X-633 EE/CA was completed, additional data were collected and documented in Section 1.5.2 and Appendix A of the X-633 RAWP. As discussed below, the X-633 EE/CA and the X-633 RAWP identified asbestos, lead, cadmium, and chromium as contaminants of concern.

The forms of asbestos-containing material (ACM) in the X-633 RCW Complex structures included corrugated transite siding on the X-633-2C and X-633-2D Cooling Towers and the X-633-1 Pump House; paneling in the X-633-2C Cooling Tower; and pipe insulation, electrical sheathing, and window caulking in the X-633-1 Pump House.

Lead-based paint was present in the X-633-1 Pump House on pumps, a transformer, and in red paint found on some door jambs. Additionally, the transite siding on the pump house was secured with lag bolts covered with lead buttons.

In water samples collected from the pump house wet well, the valve vaults, and a pump house floor drain in November and December 2009, cadmium, chromium, and lead were detected above PORTS groundwater Preliminary Remediation Goals. Also, Uranium-238 was detected at a maximum concentration of 14.09 picocuries per liter (pCi/L), which is below the derived concentration guide value of 600 pCi/L for discharge of water in accordance with DOE Order 5400.5.

Wood core samples were collected from the cooling towers in June 2009 and analyzed to determine whether concentrations of leachable chromium exceeding the Resource Conservation and Recovery Act (RCRA) toxicity characteristic leaching procedure (TCLP) regulatory limits were present. All but one sample was either non-detect or less than 5.0 milligrams/liter (mg/L), the TCLP limit for chromium. One sample, which was collected from the X-633-2C Cooling Tower, contained 6.4 mg/L of leachable chromium. In December 2009 and January 2010, additional cooling tower wood core samples were collected and analyzed to determine the concentrations of leachable chromium. The concentrations of leachable chromium did not exceed the RCRA TCLP regulatory limit.

1.5 PRE-DEMOLITION ACTIVITIES

Pre-demolition activities were conducted prior to the initiation of the X-633 RCW Complex CERCLA non-time-critical removal action. The pre-demolition activities, which were conducted as maintenance actions under DOE's Atomic Energy Act authority, were executed in accordance with all statutory and regulatory requirements including, but not limited to, the National Environmental Policy Act of 1969. Pre-demolition activities that were completed include site preparation; mobilization and installation of field trailers; installation of site controls; disconnecting and isolating utilities (other than fire protection system); draining and containerizing fluids; and removing batteries and chargers, universal waste, and light ballasts.

Used oil that was drained from fan gear boxes and pump motors (1260 gallons), oil drained from the transformers (9048 gallons), batteries (60 units), a battery charger, and other universal wastes (21 cu ft) have been removed from the X-633 RCW Complex and, with the exception of the battery charger, have been transported to off-site recycling facilities. The battery charger has been transported to a staging area located adjacent to the X-533 Switchyard Complex to await shipment by a recycler or end-user. PCB-containing light ballasts (1 cu ft) were removed from the X-633 RCW Complex and shipped for disposal as Toxic Substances Control Act waste.

1.6 NON-TIME-CRITICAL REMOVAL ACTION PURPOSE AND OBJECTIVES

Phase I non-time-critical removal action activities included removal of ACM; equipment; the wooden, above-grade portions of the cooling tower structures; the above-grade portion of the pump house; and other above-grade concrete features (the block valve houses located adjacent to the cooling towers, the block walls that separated the transformers, and the containment dike that surrounded the

empty sulfuric acid tank). Phase I also included disconnecting and terminating piping and utilities as required; restoration such as re-seeding and installing fencing around the pump house wet well, the transformer pads, and the basins; demobilization; and waste disposal.

The following objectives were developed for the removal activities:

- Reduce the potential exposure to on-site personnel from hazardous substances due to the structural deterioration of the X-633 RCW Complex; and
- Control removal of the X-633 RCW Complex to minimize or eliminate the potential health and environmental impacts created by the potential uncontrolled release of contaminated dust, equipment, and building materials from the structures as they deteriorate.

2.0 SUMMARY OF TASKS COMPLETED

The X-633 RCW Complex non-time-critical removal action Phase I activities have been completed in accordance with the applicable and relevant or appropriate requirements (ARARs) outlined in the X-633 Action Memorandum. Photographs of the X-633 RCW Complex before, during, and after demolition are provided in Appendix A.

2.1 PROTECTION OF SEPTIC SYSTEM

A filter bed, shown in Figure 2, is associated with the X-633 septic system. During pre-demolition activities, the boundaries of the filter bed were delineated with rope to prevent heavy equipment from crossing the filter bed and potentially crushing the filter bed piping during Phase I removal activities.

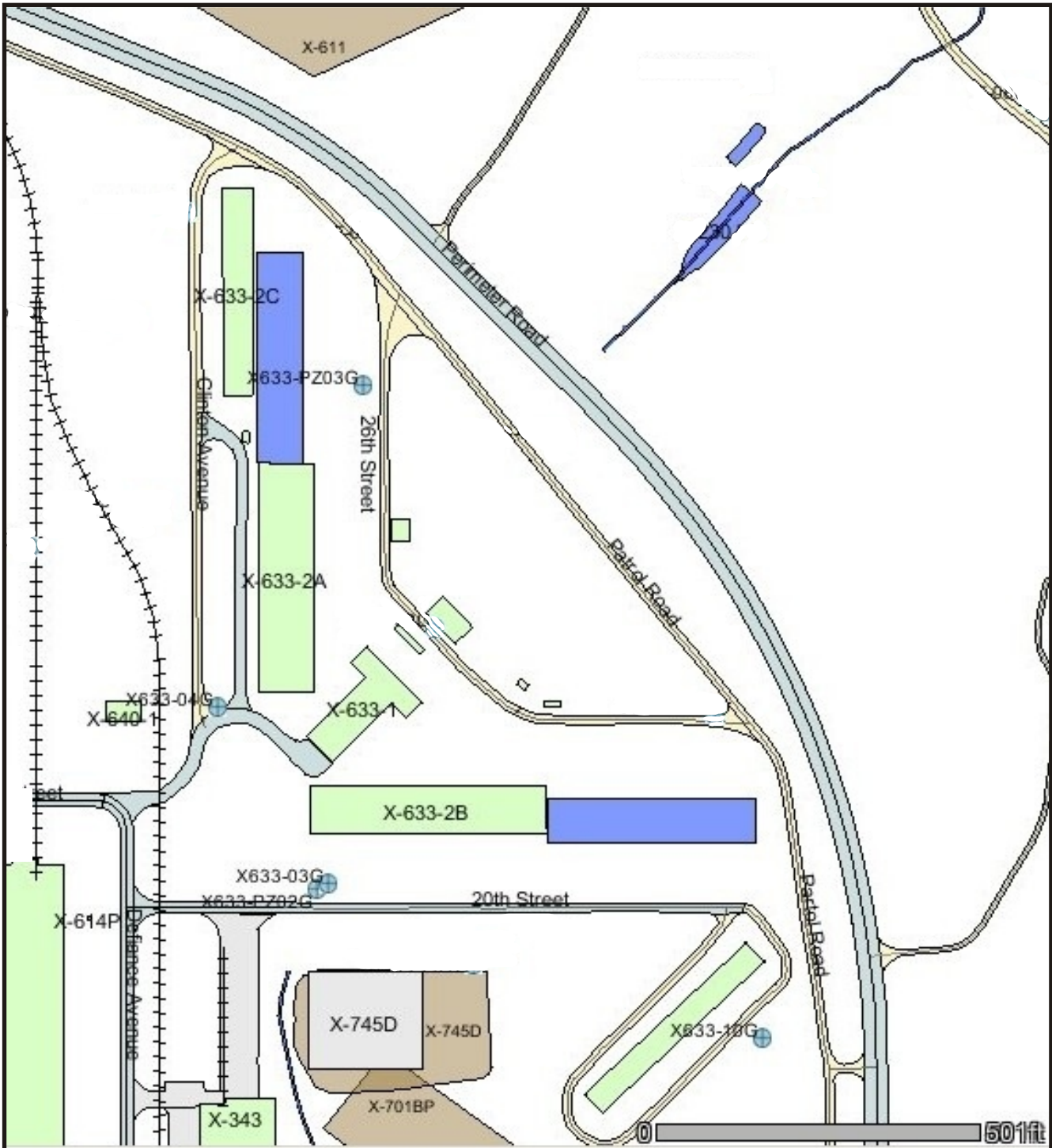
2.2 PROTECTION OF NON-IGWMP GROUNDWATER MONITORING WELLS

Figure 4 shows the locations of the five non-Integrated Groundwater Monitoring Plan (non-IGWMP) groundwater monitoring wells (X633-03G, X633-04G, X633-10G, X633-PZ02G, and X633-PZ03G) that are located within the boundaries of the X-633 RCW Complex (DOE 2009a). To protect the wells from unintentional damage during the demolition of nearby structures, concrete jersey barriers were installed around the wells prior to demolition.


2.3 REMOVAL OF ACM

In accordance with the X-633 RAWP, ACM was removed from the above-grade portions of the pump house and cooling towers using a licensed asbestos abatement subcontractor. Engineering controls including wetting methods, negative air units, and containment structures were used to control air emissions during Class I and Class II abatement activities. Air monitoring was conducted to assure adequacy of engineering, administrative, and personal protective equipment (PPE) controls. ACM was placed into Department of Transportation (DOT)-approved containers.

Aerial buckets were used to access the transite panels on the sides of the cooling towers. The transite panels, for the most part, were removed as full panels. The panels were lowered to the ground, wrapped with poly sheeting, and loaded into lined, DOT-approved containers.



Legend

 Monitoring well

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PORTSMOUTH/PADUCAH PROJECT OFFICE

TITLE

**X-633 Recirculating Cooling Water Complex
Construction Completion Report - Phase I**

**Figure 4
Non-IGWMP Groundwater Monitoring Wells**

CLASS NO.	BLDG. NO.	PLANT NO.
	X-633	

Due to safety concerns, the exterior transite panels on the storm-damaged portion of the X-633-2D Cooling Tower could not be removed using an aerial bucket. Instead, the transite panels were sprayed with a non-phosphate, non-glycol wetting agent to prevent the release of fibers during demolition activities. An excavator selectively demolished the transite-containing portion of the damaged tower. Once the transite and associated wood debris were on the ground, that portion of the debris was managed and disposed as ACM.

In addition to the exterior transite panels, the X-633-2C Cooling Tower also contained interior ACM panels which were integrated into the cooling tower structure. After the exterior transite panels were removed, the remainder of the X-633-2C Cooling Tower was removed in stages using an excavator. Non-asbestos-containing sections were removed and segregated for disposal as sanitary waste. Removal of each of these sections allowed access to an interior ACM panel. The interior panels were sprayed with a wetting agent (as described above) and removed and disposed as ACM debris.

The pump house transite panels were secured with lag bolts covered with lead buttons, and lead flashing was present above the pump house windows. The lead buttons and lead flashing (28 cu ft) were removed, containerized, and transported to an off-site recycling facility. The pump house transite panels were lowered to the ground, wrapped with poly sheeting, and loaded into lined, DOT-approved containers.

2.4 REMOVAL OF EQUIPMENT

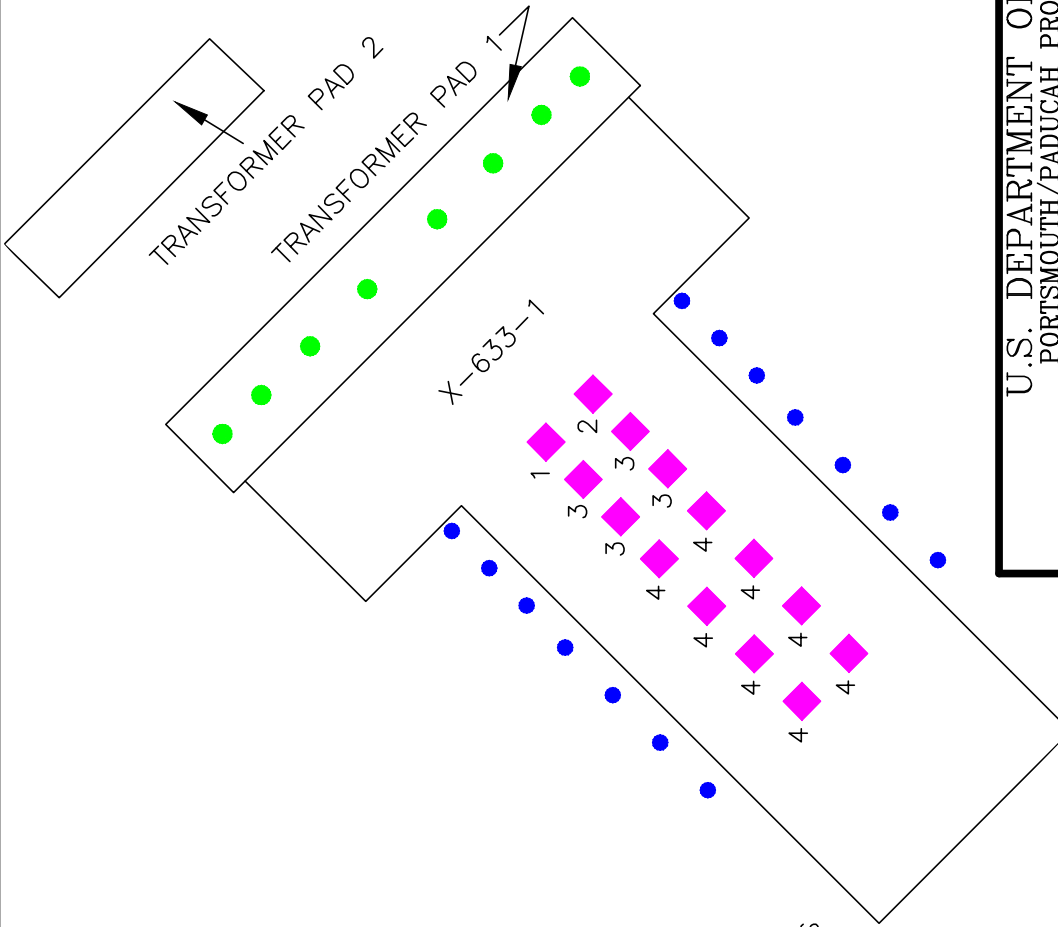
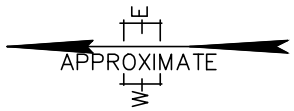
Equipment removal was initiated prior to demolition and continued as demolition of the building progressed. Non-contaminated equipment identified for re-use or recycling included, but was not limited to, transformers, empty tanks, switchgear, motors, and the overhead trolley crane. Two wet well pump motors were transferred to USEC for reuse. The remaining equipment identified for re-use or recycling was temporarily placed in an equipment storage area established at the X-633 RCW Complex. The equipment was then transported to a staging area located adjacent to the X-533 Switchyard Complex to await shipment by the recycler or end-user.

The X-633 RAWP stated that the wet well pumps were identified for recycling. However, radiological surveys conducted during the removal process indicated that fixed radiological contamination was present on the internal surfaces of the wet well pumps. Twelve of the fourteen pumps will be transported off-site for disposal as low level waste (LLW). Two of the fourteen pumps have been transported to USEC for potential refurbishing and reuse.

2.5 REMOVAL OF UTILITIES AND PIPING

Just prior to demolition, utilities associated with the X-633 RCW Complex fire protection system were isolated and disconnected from the PORTS utility systems. Other utility disconnect and isolation activities were conducted to disconnect the complex from the PORTS utility systems as pre-demolition activities prior to the initiation of the X-633 RCW Complex CERCLA non-time-critical removal action (see Section 1.5).

The above-grade electrical conduits and cables, high-pressure fire water piping, and compressed air lines were cut close to existing grade at the locations indicated in Figures 5 through 8. The main power cables (pothead assemblies) feeding the X-633 RCW Complex transformers were disconnected from the transformers, left in place, supported with wood bracing, and covered with poly sheeting. See Figure 5.



NOTE:
 NUMEROUS CONDUITS AND CABLES
 WERE TERMINATED AT GRADE ON
 THE TRANSFORMER PADS

- 24" ϕ RCW PIPE
- ◆ 1 PUMP OPENING COVERED WITH 6'X6'X1/4" STEEL PLATE
- ◆ 2 PUMP OPENING COVERED WITH 5'X5'X1/4" STEEL PLATE
- ◆ 3 PUMP OPENING COVERED WITH 4.5'X4.5'X1/4" STEEL PLATE
- ◆ 4 PUMP OPENING COVERED WITH 5.5'X5.5'X1/4" STEEL PLATE
- ELECTRICAL TRANSFORMER POTHEAD

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TITLE

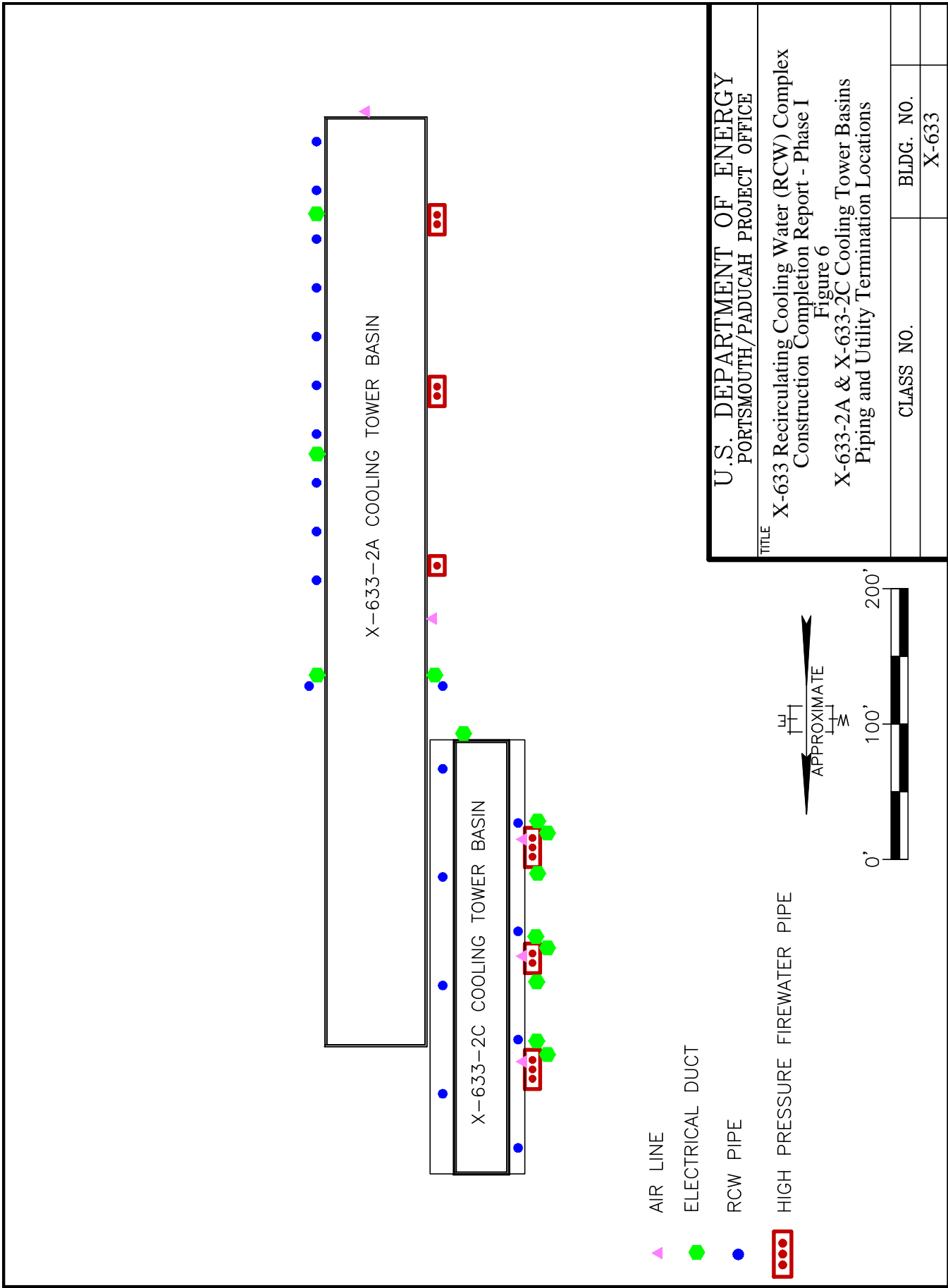
X-633 Recirculating Cooling Water (RCW) Complex
 Construction Completion Report - Phase I
 Figure 5

X-633-1 Pump House Slab and Transformer Pads
 Piping and Utility Termination and Covered Opening Locations

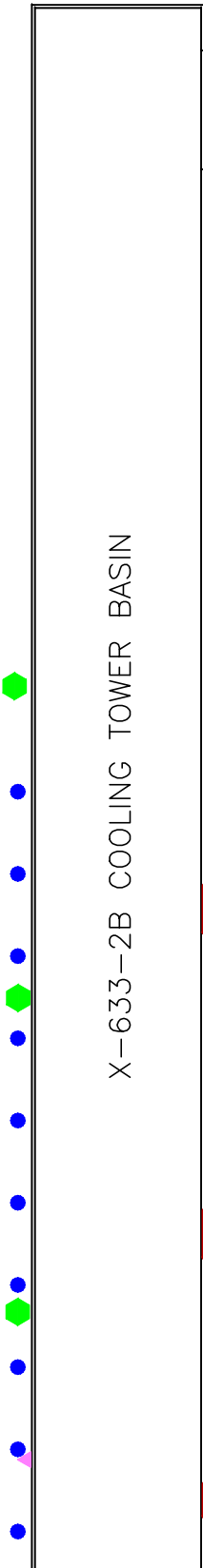
CLASS NO.

BLDG. NO.

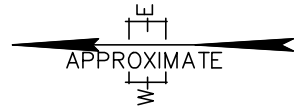
X-633



X-633-2B COOLING TOWER BASIN



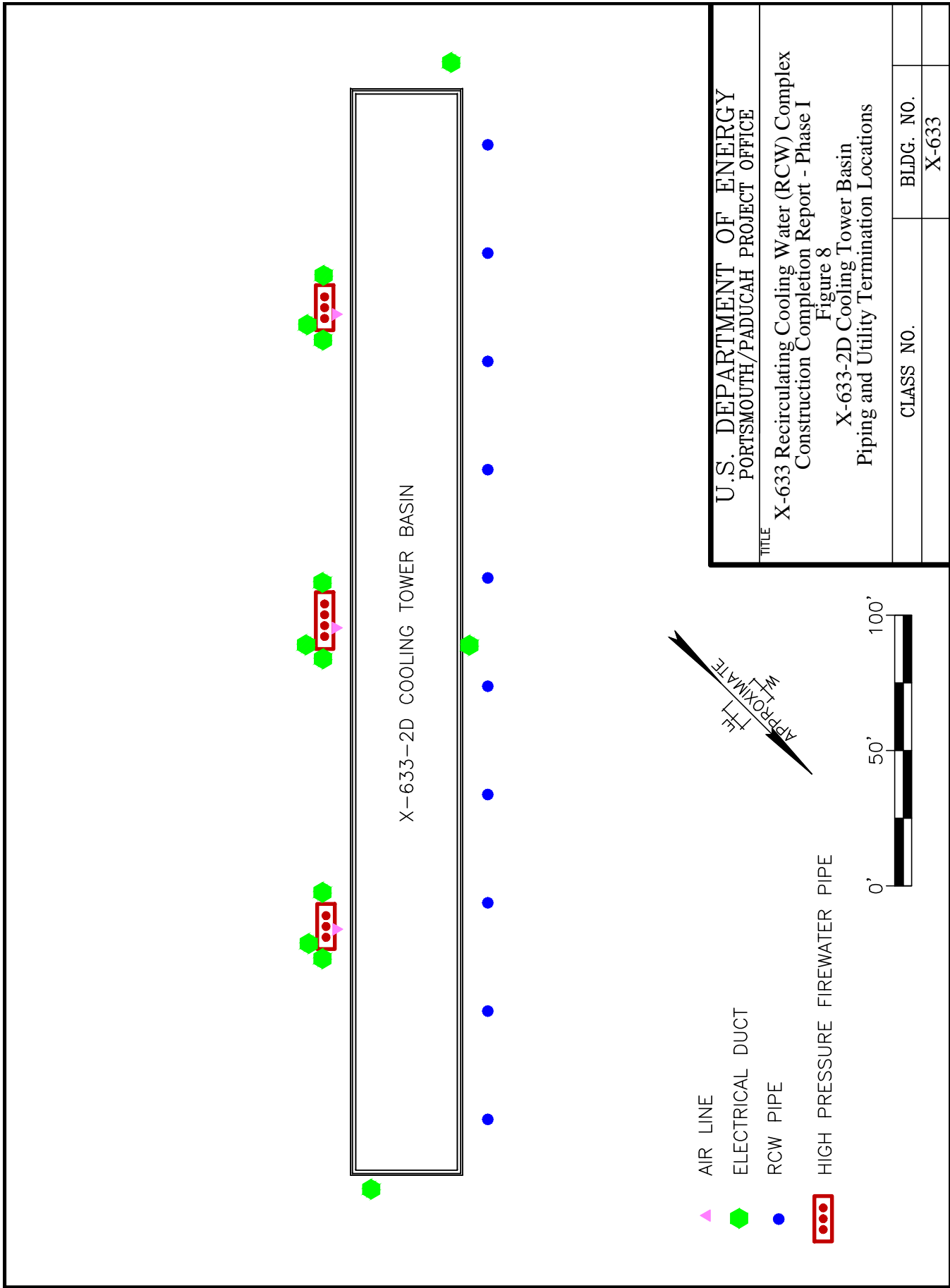
-  AIR LINE
-  ELECTRICAL DUCT
-  RCW PIPE
-  HIGH PRESSURE FIREWATER PIPE







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TITLE
X-633 Recirculating Cooling Water (RCW) Complex
Construction Completion Report - Phase I
Figure 7
X-633-2B Cooling Tower Basin
Piping and Utility Termination Locations

CLASS NO.	BLDG. NO.
	X-633



-  AIR LINE
-  ELECTRICAL DUCT
-  RCW PIPE
-  HIGH PRESSURE FIREWATER PIPE

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TITLE X-633 Recirculating Cooling Water (RCW) Complex
Construction Completion Report - Phase I
Figure 8
X-633-2D Cooling Tower Basin
Piping and Utility Termination Locations

CLASS NO.	BLDG. NO.
	X-633

The above-grade RCW piping was removed close to existing grade. See Figures 5 through 8. RCW pipes were disconnected at gate valve locations. Blind flanges (pressure-treated plywood) were installed only where gate valves were in the open position. Pipes without near-grade gate valves were cut with a shear close to existing grade. Each cut pipe was covered with a protective wooden structure.

The underground piping and utilities remaining at the X-633 RCW Complex at the end of Phase I of the non-time-critical removal action are shown in Figure 9. Note that exact locations of underground piping and utilities have not been verified (e.g., via excavation or ground penetration radar); therefore, Figure 9 may not reflect as-built conditions or configurations.

2.6 DEMOLITION OF ABOVE-GRADE PORTIONS OF COOLING TOWER STRUCTURES

In accordance with the X-633 RAWP, the above-grade portions of the X-633 RCW Complex cooling towers were demolished using long-reach excavators equipped with bucket, shear, and grapple attachments. Controlled sweeps of the excavator arm were used to collapse the towers. The majority of structural debris fell directly into the concrete basins beneath the cooling towers, which contained the debris in a central location and lessened the impact on soils surrounding the towers.

The concrete piers inside the X-633-2C and X-633-2D Cooling Tower basins were removed as the demolition of the cooling towers progressed. The piers were removed to allow demolition equipment to enter the two shallow (4 ft to 5 ft deep) basins for easier access to the above-grade cooling tower structures. After the above-grade portions of the X-633-2A and X-633-2B Cooling Towers were demolished, the concrete beams and columns inside the deeper (approximately 22 ft) X-633-2A and X-633-2B Cooling Tower basins were removed to allow removal of demolition debris from the basins.

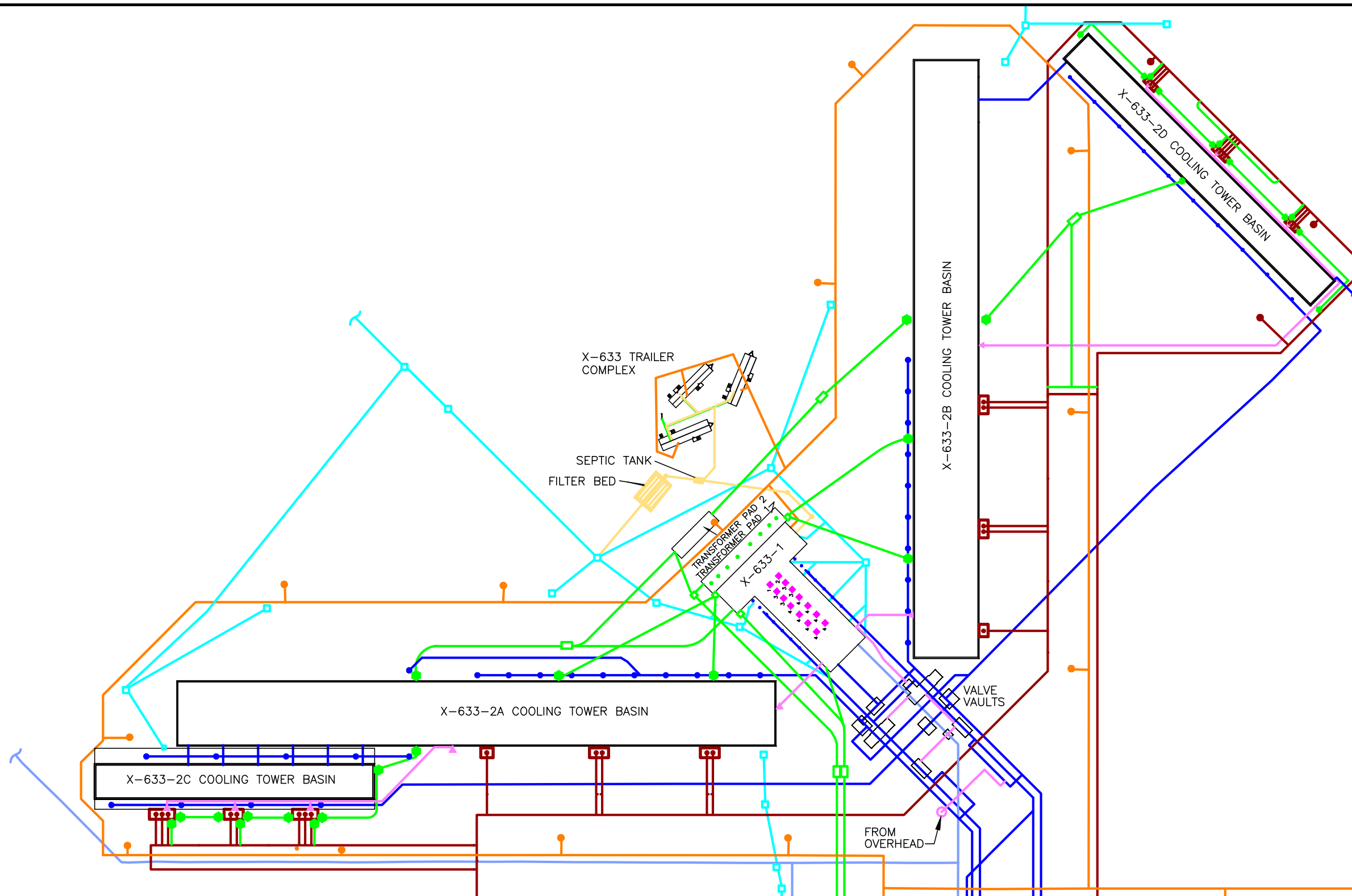
Debris was grabbed and scooped from the basins using excavators equipped with grapple and bucket attachments as well as a material handler equipped with rotating grapple. The majority of the debris was direct-loaded into DOT-approved containers without intermediate staging; the only exceptions were to size-reduce structural items when required or to conduct radiological surveys before the debris was placed into a transport container.

Dust control measures were used throughout the demolition process. Before initiating demolition, the plastic fill material inside the cooling towers was washed to the extent practicable using fire hoses to remove dust and chemical deposits to minimize the release of fugitive dust or other contaminants during demolition. Water was sprayed during demolition to minimize the release of fugitive dust or other contaminants. Excess water that contacted the cooling tower demolition debris was, for the most part, confined in the basins. Water that was pumped from the basins was discharged through PORTS Outfall 004. The water was sampled and analyzed to ensure compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements, in accordance with X-633 RCW Complex ARARs.

DOT-approved containers were staged at the X-633 RCW Complex awaiting daily transport to off-site disposal facilities. No hazardous waste piles were created.

2.7 DEMOLITION OF ABOVE-GRADE CONCRETE STRUCTURES

In accordance with the X-633 RAWP, the above-grade portion of the X-633-1 Pump House structure was removed using excavators equipped with concrete breaker, bucket, shear, and grapple attachments. Large steel items were segregated from the debris for recycling, and debris was direct-loaded into DOT-approved containers for disposal. After the pump house was demolished, the manway access to the wet



● RCW PIPE TERMINATION	— RCW PIPE	— STORM DRAIN PIPE W/CATCH BASIN
▲ AIR LINE TERMINATION	— AIR LINE	— SANITARY FIRE WATER PIPE W/FIRE HYDRANT
■ HIGH PRESSURE FIRE WATER PIPE TERMINATION	— HIGH PRESSURE FIRE WATER PIPE	— MAKE-UP WATER PIPE
◆ ELECTRICAL DUCT TERMINATION	— ELECTRICAL DUCT W/MANHOLES	— SANITARY SEWER PIPE W/MANHOLE

FROM OVERHEAD

APPROXIMATE

REFERENCE DRAWINGS
X-633-1-C
X-633-1.10-C
X-633-2A & 2B-2000M
X-633-1-2001M

U.S. DEPARTMENT OF ENERGY PORTSMOUTH/PADUCAH PROJECT OFFICE		
TITLE X-633 Recirculating Cooling Water (RCW) Complex Construction Completion Report - Phase I Figure 9 Remaining Underground Structures, Piping, and Utilities		
CLASS NO.	BLDG. NO.	
	X-633	

well and the openings in the cover where the pumps were removed were covered with steel plates (see Figure 5).

The segregated structural steel was temporarily placed in an equipment storage area established at the X-633 RCW Complex. The steel was then transported to a staging area located adjacent to the X-533 Switchyard Complex to await shipment by the recycler or end-user. The pump house structural steel and the X-633 RCW Complex equipment to be re-used or recycled totaled approximately 65,520 cu ft.

The block valve houses located adjacent to the cooling towers, the block walls that separated the transformers, and the containment dike that surrounded the empty sulfuric acid tank also were removed. The valve vaults were left in their previous configuration.

Water was sprayed to minimize the release of fugitive dust or other contaminants during the demolition of the above-grade pump house and other above-grade concrete structures. Silt fencing and sediment traps were used to control sediment runoff.

2.8 SITE RESTORATION AND DEMOBILIZATION

Prior to demolition, gravel was placed on the ground in heavily-trafficked areas to facilitate movement of heavy equipment. The gravel has been left in place and will be characterized when DOE conducts a RCRA Corrective Action investigation of the X-633 RCW Complex soils and groundwater, pursuant to the Consent Decree (see Section 6.1).

Small pieces of demolition debris that accumulated in the cooling tower basins were removed to the extent possible at the end of Phase I of the non-time-critical removal action. However, some small pieces remain in the deeper basins and will be addressed during Phase II activities. Temporary construction fencing was installed around the cooling tower basins, the pump house wet well, and the transformer pads. The temporary construction fencing will be replaced by chain-link fencing (see Section 6.2).

Restoration activities also included minor grading and seeding, and applying straw to areas that were impacted by the demolition activities in order to re-establish ground vegetation. Demolition equipment was demobilized from the site.

2.9 POST-REMOVAL STATE

At the completion of Phase I of this non-time-critical removal action, the X-633 RCW Complex above-grade utilities and piping have been removed close to existing grade as described in Section 2.5 of this Construction Completion Report. The above-grade portions of the X-633 RCW Complex cooling towers have been removed, and the pump house has been removed to the concrete slab. The manway access to the pump house wet well and the openings in the cover where the pumps were removed have been covered with steel plates (see Figure 5). The block valve houses located adjacent to the cooling towers, the block walls that separated the transformers, and the containment dike that surrounded the empty sulfuric acid tank have been removed.

The underground structures, piping, and utilities remaining at the X-633 RCW Complex at the end of Phase I of the non-time-critical removal action are shown in Figure 9. Note that exact locations of underground piping and utilities have not been verified (e.g., via excavation or ground penetration radar); therefore, Figure 9 may not reflect as-built conditions or configurations. The cooling tower basins, pump

house slab and wet well, transformer pads, and valve vaults remain intact. The following piping and utilities remain underground:

- RCW piping
- Make-up water piping
- Air lines
- Electrical ducts
- High pressure fire water piping
- Sanitary fire water piping
- Sanitary sewer piping
- Storm drain piping

3.0 WASTE MANAGEMENT AND TRANSPORTATION ACTIVITIES

This section describes the management and transport of wastes generated during Phase I of the X-633 RCW Complex non-time-critical removal action. Wastes were managed and disposed in accordance with the X-633 RAWP and the X-633 RCW Complex ARARs, including Ohio Administrative Code (OAC) solid and hazardous waste requirements. Facility characterization was conducted to assure waste streams were compliant with applicable waste acceptance criteria (WAC). At a minimum, wastes were subjected to radiological surveys before being containerized. Radiological surveys conducted throughout demolition confirmed that no radiological contaminants were present above regulatory limits or DOE Order 5400.5 free release limits. ACM was segregated for disposal. Both liquid and solid wastes were generated during Phase I of this removal action.

Liquid Waste

Liquid waste generated during Phase I consisted of water that accumulated in the cooling tower basins and wet well, including water applied to control fugitive dust or other contaminants. The quantity of liquid waste generated was approximately 1,000,000 gallons.

Water that was pumped from the basins was discharged through PORTS Outfall 004. The water was sampled and analyzed to ensure compliance with NPDES permit requirements, in accordance with X-633 RCW Complex ARARs.

Solid Waste

The approximate quantities of solid waste generated during Phase I and waste disposal locations are provided in Table 1. A detailed listing of shipped waste is provided as Table 2. Manifest logs will be provided upon request. Solid waste included, but was not limited to, wood, plastic, concrete, fiberglass, asbestos, and wet well pumps. Personal protective equipment used during the waste generation process (e.g., gloves, earplugs) was disposed with the above-mentioned waste streams.

Table 1. Summary of Phase I solid waste

Waste Material	Type	Approximate Volume (cu ft)	Disposal Location
ACM	ACM	35,910	Pike County Landfill
Construction/demolition debris	Sanitary	716,580	Pike County Landfill
Wet well pumps*	LLW	4755	Nevada Test Site or EnergySolutions' Clive, Utah facility

*To be completed

Table 2. Shipment of Phase I solid waste

Waste Material	Type	Volume (cu ft)	Disposal Location	Date/Week Shipped	Container Type
Non-friable ACM	ACM	2,430	Pike County Landfill	Week ending 1/15/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	2,430	Pike County Landfill	Week ending 1/22/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	810	Pike County Landfill	1/28/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	810	Pike County Landfill	2/18/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	810	Pike County Landfill	2/24/2010	Roll off (30 cu yd)
Friable ACM	ACM	1,080	Pike County Landfill	3/12/2010	Roll off (40 cu yd)
Non-friable ACM	ACM	810	Pike County Landfill	4/9/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	810	Pike County Landfill	4/22/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	1,620	Pike County Landfill	4/26/2010	Roll off (30 cu yd)
Friable ACM	ACM	810	Pike County Landfill	4/27/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	1,620	Pike County Landfill	4/27/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	1,620	Pike County Landfill	4/29/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	1,620	Pike County Landfill	5/3/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	1,620	Pike County Landfill	5/4/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	7,290	Pike County Landfill	5/5/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	5,670	Pike County Landfill	5/6/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	2,430	Pike County Landfill	Week ending 6/4/2010	Roll off (30 cu yd)
Non-friable ACM	ACM	1,620	Pike County Landfill	Week ending 6/7/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	5,400	Pike County Landfill	Week ending 1/22/2010	Roll off (40 cu yd)
Demolition Debris	Sanitary/industrial waste	1,080	Pike County Landfill	2/9/2010	Roll off (40 cu yd)
Demolition Debris	Sanitary/industrial waste	1,080	Pike County Landfill	2/24/2010	Roll off (40 cu yd)
Demolition Debris	Sanitary/industrial waste	1,080	Pike County Landfill	3/5/2010	Roll off (40 cu yd)
Demolition Debris	Sanitary/industrial waste	1,080	Pike County Landfill	3/17/2010	Roll off (40 cu yd)
Demolition Debris	Sanitary/industrial waste	2,160	Pike County Landfill	Week ending 3/25/2010	Roll off (40 cu yd)
Demolition Debris	Sanitary/industrial waste	1,080	Pike County Landfill	3/31/2010	Roll off (40 cu yd)
Demolition Debris	Sanitary/industrial waste	1,080	Pike County Landfill	4/9/2010	Roll off (40 cu yd)
Demolition Debris	Sanitary/industrial waste	13,770	Pike County Landfill	4/12/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	17,010	Pike County Landfill	4/13/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	2,430	Pike County Landfill	4/14/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	9,720	Pike County Landfill	4/15/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	12,150	Pike County Landfill	4/16/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	9,720	Pike County Landfill	4/17/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	14,580	Pike County Landfill	4/19/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	12,960	Pike County Landfill	4/20/2010	Roll off (30 cu yd)

Table 2. Shipment of Phase I solid waste (continued)

Waste Material	Type	Volume (cu ft)	Disposal Location	Date Shipped	Container Type
Demolition Debris	Sanitary/industrial waste	9,720	Pike County Landfill	4/21/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	10,530	Pike County Landfill	4/22/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	8,370	Pike County Landfill	4/23/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	10,530	Pike County Landfill	4/26/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	7,560	Pike County Landfill	4/27/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	13,230	Pike County Landfill	4/29/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	11,610	Pike County Landfill	5/3/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	10,530	Pike County Landfill	5/4/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	7,290	Pike County Landfill	5/5/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	4,320	Pike County Landfill	5/6/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	18,090	Pike County Landfill	5/10/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	24,300	Pike County Landfill	5/11/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	6,480	Pike County Landfill	5/12/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	25,380	Pike County Landfill	5/13/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	20,250	Pike County Landfill	5/14/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	22,680	Pike County Landfill	5/17/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	23,490	Pike County Landfill	5/18/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	17,010	Pike County Landfill	5/19/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	8,100	Pike County Landfill	5/20/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	17,010	Pike County Landfill	5/21/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	21,870	Pike County Landfill	5/24/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	21,870	Pike County Landfill	5/25/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	19,440	Pike County Landfill	5/26/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	18,630	Pike County Landfill	5/27/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	22,680	Pike County Landfill	6/1/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	20,250	Pike County Landfill	6/2/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	12,420	Pike County Landfill	6/3/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	12,690	Pike County Landfill	6/4/2010	Roll off (30/40 cu yd)
Demolition Debris	Sanitary/industrial waste	12,150	Pike County Landfill	6/7/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	16,200	Pike County Landfill	6/8/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	20,250	Pike County Landfill	6/9/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	16,200	Pike County Landfill	6/10/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	12,960	Pike County Landfill	6/11/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	16,200	Pike County Landfill	6/14/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	20,250	Pike County Landfill	6/15/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	8,910	Pike County Landfill	6/16/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	25,110	Pike County Landfill	6/17/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	20,250	Pike County Landfill	6/18/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	12,150	Pike County Landfill	6/21/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	3,240	Pike County Landfill	6/22/2010	Roll off (30 cu yd)
Demolition Debris	Sanitary/industrial waste	1,620	Pike County Landfill	6/30/2010	Roll off (30 cu yd)

4.0 DEVIATIONS FROM THE X-633 RAWP

4.1 STAGING EQUIPMENT FOR RE-USE OR RECYCLING

The X-633 RAWP stated that equipment identified for re-use or recycling would be loaded onto the recyclers' or end-users' vehicles for transport and that equipment awaiting shipment would be placed in an equipment storage area established in the X-633 RCW Complex. However, the equipment that was

temporarily placed in the X-633 RCW Complex equipment storage area was not transported by the recyclers or end users by the completion of Phase I of the X-633 RCW Complex non-time-critical removal action. The equipment was transported to a staging area located adjacent to the X-533 Switchyard Complex to await shipment by the recycler or end-user.

4.2 END STATE OF BASINS

The X-633 RAWP stated that water that accumulated in the cooling tower basins would be removed after demolition. Water that accumulated in the cooling tower basins was removed during the demolition process. However, due to repeated heavy rainfalls encountered this year, the basins re-filled. It was determined that emptying the basins at the end of Phase I of the non-time-critical removal action was non-productive. Therefore, at the end of Phase I, water remains in the cooling tower basins. A field change was submitted to Ohio EPA on August 11, 2010, and Ohio EPA’s concurrence with the field change was received on August 23, 2010 (see Appendix B). The X-633 cooling tower basins will be emptied during Phase II of this non-time-critical removal action.

5.0 PROJECT SCHEDULE

Table 3 delineates the major activities associated with Phase I of the X-633 RCW Complex non-time-critical removal action. Note that some activities (e.g., equipment removal) were initiated as pre-demolition maintenance actions and continued throughout the demolition process. Also, as described in Section 2.2.3 of the X-633 RAWP, DOE obtained agreement from Ohio EPA via electronic mail received December 21, 2009 to allow initiation of portions (e.g., removal of cooling tower panels and ACM abatement) of the X-633 RAWP before Ohio EPA concurrence with the entire X-633 RAWP was received. Also, DOE initiated demolition of the X-633-2D Cooling Tower before receipt of Ohio EPA’s April 13, 2010 concurrence with the X-633 RAWP to ensure that the American Recovery and Reinvestment Act deadline could be met and to eliminate the need for on-site workforce reduction.

Table 3. Phase I schedule for removal of the X-633 RCW Complex

Activity	Start Date	Completion Date
Remove and stage equipment for re-use or recycling (such as tanks, motors, crane)	October 15, 2009	June 22, 2010
Remove ACM and ship for disposal	December 29, 2009	June 30, 2010
Demolish X-633-2D Cooling Tower and ship waste for disposal	April 6, 2010	April 21, 2010
Demolish X-633-2C Cooling Tower and ship waste for disposal	April 21, 2010	May 6, 2010
Demolish X-633-2B Cooling Tower and ship waste for disposal	May 7, 2010	June 4, 2010
Demolish X-633-2A Cooling Tower and ship waste for disposal	May 20, 2010	June 11, 2010
Demolish above grade portion of pump house and ship waste for disposal	May 24, 2010	June 22, 2010
Install temporary construction fence	June 1, 2010	June 30, 2010
Complete Phase I	August 23, 2010*	

*Date DOE received Ohio EPA concurrence with the field change for the end state of the X-633 RCW Complex basins

6.0 FURTHER X-633 RCW COMPLEX ACTIVITIES

6.1 RCRA CORRECTIVE ACTION INVESTIGATION

DOE will conduct a RCRA Correction Action investigation of the X-633 RCW Complex soils and groundwater, pursuant to the Consent Decree. Based on the investigation results, remediation may be required. Some soil and underground piping may be removed as part of the RCRA Corrective Action remediation activities, if warranted.

6.2 CHAIN LINK FENCE INSTALLATION

The X-633 RCW Complex temporary construction fencing will be removed, and four-ft high chain-link fencing will be installed around the cooling tower basins, the pump house wet well, and the transformer pads. The installation will be performed by one of the on-site contractors.

The chain-link fence gate(s) will be accessible to authorized personnel only. The fence will serve to protect unauthorized workers and to protect structures located within the perimeter of the fence, including above-grade piping, covered manholes and other covered slab openings, and the main power cables feeding the transformers.

6.3 SEPTIC SYSTEM

After the completion of Phase I of the X-633 RCW Complex non-time-critical removal action, DOE pumped the sludge from the X-633 septic tank, which is located east of the X-633-1 Pump House. The filter bed associated with the X-633 septic system will be investigated during the X-633 RCW Complex RCRA Corrective Action soil and groundwater investigation and potential remediation that will be conducted, if necessary, pursuant to the Consent Decree. When DOE determines that there is no further use for the X-633 septic system, the septic tank will be removed and disposed as solid waste.

6.4 NON-TIME-CRITICAL REMOVAL ACTION PHASE II ACTIVITIES

Phase II will be initiated when funding is available at some unspecified time in the future, after DOE has completed the X-633 RCW Complex RCRA Corrective Action soil and groundwater investigation and potential remediation, if necessary, pursuant to the Consent Decree. Per the existing X-633 RAWP, the following activities will be completed during Phase II of the non-time-critical removal action:

- Excavating soils around the below-grade concrete structures to allow safe demolition of the structures. (Piping and utilities that are exposed during excavation will be removed, and the truncated pipes/utilities will be capped or flanged.)
- Removing the french drain piping surrounding Cooling Towers X-633-2C and X-633-2D.
- Demolishing the below-grade concrete structures (four cooling tower basins; pump house wet well; nine valve vaults; transformer, tank, and valve house pads/slabs; and septic tank).

- Removing non-IGWMP monitoring wells, as needed.
- Re-contouring the Site to design grade and performing other Site restoration activities. (Underground piping and utilities that are exposed during site re-contouring activities will be terminated and capped or flanged as required.)
- Demobilization.
- Waste management and disposal.

However, once the X-633 RCW Complex RCRA Corrective Action soil and groundwater investigation has been completed, DOE and Ohio EPA will discuss the implementation of Phase II activities (including the schedule for activities) and any additional possibilities regarding the final status of the basins.

7.0 REFERENCES

- DOE 1996. *Quadrant II RFI Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/11-1232/V1&D3.
- DOE 2009a. *Integrated Groundwater Monitoring Plan for the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0032&D3. June.
- DOE 2009b. *Engineering Evaluation/Cost Analysis for the X-633 Recirculating Cooling Water Complex at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0098&D1. September.
- DOE 2009c. *Action Memorandum for the X-633 Recirculating Cooling Water Complex at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0106&D1. December.
- DOE 2010. *X-633 Recirculating Cooling Water Complex Removal Action Work Plan at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-101&D2. April.

APPENDIX A
PHOTOGRAPHS



Figure A-1. Photograph of the X-633 RCW Complex – March 2009



Figure A-2. Photograph of the X-633 RCW Complex – March 2010



Figure A-3. Photograph of the X-633 RCW Complex – May 2010



Figure A-4. Photograph of the X-633 RCW Complex – June 2010



Figure A-5. Photograph of the X-633-1 Pump House – before demolition



Figure A-6. Photograph of the X-633-1 Pump House – equipment removal



Figure A-7. Photograph of the X-633-1 Pump House – during demolition



Figure A-8. Photograph of the X-633-1 Pump House – after demolition



Figure A-9. Photograph of the X-633-2A Cooling Tower – before demolition



Figure A-10. Photograph of the X-633-2A Cooling Tower – during demolition



Figure A-11. Photograph of the X-633-2A Cooling Tower basin – after demolition



Figure A-12. Photograph of the X-633-2B Cooling Tower – before demolition



Figure A-13. Photograph of the X-633-2B Cooling Tower – during demolition



Figure A-14. Photograph of the X-633-2B Cooling Tower basin – after demolition



Figure A-13. Photograph of the X-633-2C Cooling Tower – before demolition



Figure A-14. Photograph of the X-633-2C Cooling Tower – during demolition



Figure A-15. Photograph of the X-633-2C Cooling Tower – during demolition



Figure A-16. Photograph of the X-633-2C Cooling Tower basin – after demolition



Figure A-17. Photograph of the X-633-2D Cooling Tower – before demolition

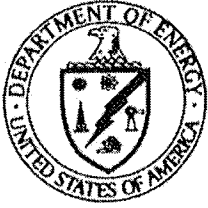


Figure A-18. Photograph of the X-633-2D Cooling Tower – during demolition



Figure A-19. Photograph of the X-633-2D Cooling Tower basin – after demolition

APPENDIX B
FIELD CHANGE DOCUMENTS



Department of Energy

Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, Kentucky 40513
(859) 219-4000

AUG 11 2010

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

PPPO-03-963243-10

Ms. Galanti:

FIELD CHANGE FOR X-633 RECIRCULATING COOLING WATER COMPLEX: END STATE OF BASINS

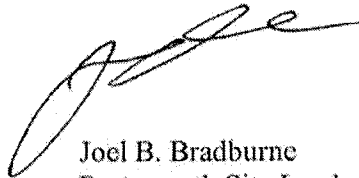
The purpose of this letter is to request Ohio Environmental Protection Agency (EPA) review and concurrence of a field change, discussed below, to the X-633 Recirculating Cooling Water (RCW) Complex Removal Action Work Plan (X-633 RAWP).

In coordination with the United States Enrichment Corporation (USEC), the Department of Energy (DOE) has removed water from the basins (via pumping), and the water was discharged through USEC outfall 004, in accordance with the X-633 RAWP. The water in the basins was sampled prior to this action and found to meet USEC's outfall limits. Due to the excessive rainfall events the area has recently received, it has been determined that it is non-productive to continue to pump accumulated rainwater. Therefore, DOE is requesting your consideration of our request that no additional water will be pumped from the X-633 RCW Complex basins during Phase I of this non-time-critical removal action.

DOE is requesting that the following sentence be deleted from Section 2.3.2.3, Page 15 of the X-633 RAWP: "After D&D is complete, water (if any) and miscellaneous debris from the demolished portions of the cooling towers that have accumulated in the cooling tower basins will be removed." And that the following sentences be used as a replacement: "After D&D is complete, miscellaneous debris from the demolished portions of the cooling towers that have accumulated in the cooling tower basins will be removed. Water that has accumulated in the basins will remain in the basins during Phase I of this non-time-critical removal action and will be removed prior to the demolition of the basins." A replacement page (Page 15) for the X-633 RAWP is enclosed for your review and insertion into the X-633 RAWP.

Please indicate your concurrence to this field change. If you have any questions, please contact me at (740) 897-5020.

Sincerely,



Joel B. Bradburne
Portsmouth Site Lead
Portsmouth/Paducah Project Office

Enclosure:

Page 15 (Redline and Clean)

cc w/enclosure:

V. Adams, PPPO/PORTS

J. Bradburne, PPPO/PORTS

J. Sferra, Ohio EPA

T. Fischer, USEPA/Region V

L. Bauer, LPP/PORTS

Administrative Records - CERCLA

PPPO Records/LEX



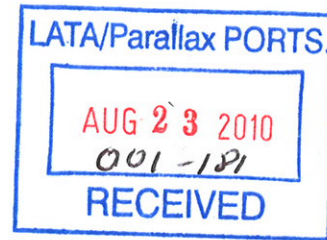
State of Ohio Environmental Protection Agency

Southeast District Office

2195 Front Street
Logan, Ohio 43138

TELE: (740) 385-8501 FAX: (740) 385-6490
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director



August 18, 2010

**US DOE-PORTS
PIKE COUNTY
DERR CORRESPONDENCE**

Kristi Wiehle, Site Coordinator
Portsmouth/Paducah Project Office
US Department of Energy
Post Office Box 700
Piketon, Ohio 45661

Joel Bradburne, Site Lead
Portsmouth/Paducah Project Office
US Department of Energy
Post Office Box 700
Piketon, Ohio 45661

RE: Field Changes for the X-701B Solid Waste Management Unit Interim Action Work Plan and X-633 Recirculating Cooling Water Complex: End State of Basins

Dear Madame and Sir:

Ohio EPA has received the proposed field changes for the above units on August 17 via e-mail and hard copy. The proposed field changes for the X-701B Interim Action Work Plan allows for ground water sampling at other extraction and/or monitoring wells, as well as modifies approach to soil sampling to accommodate the open cut approach for excavation. As submitted, the proposed field change will allow for additional ground water samples to be collected as well as greater dialog between Ohio EPA and US DOE regarding the location of sampling points and sampling frequency of the ground water during the ongoing field activities.

The proposed field change for the X-633 Removal Action Work Plan will allow for water to remain in the basins during Phase I of the non-time critical removal action. US DOE has proposed the following language be inserted in the X-633 Removal Action Work Plan: "After D&D is complete, miscellaneous debris from demolished portions of the cooling towers that have accumulated in the cooling tower basins will be removed. Water that has accumulated in the basins will remain in the basins during Phase I of this non-time critical removal action and will be removed prior to the demolition of the basins."

Ohio EPA approves of the US DOE proposed field change for the X-701B Interim Measure in accordance with the requirements of the Ohio Consent Decree. Due to the nature of the remedial activity at the X-633 Recirculating Cooling Water Complex, Ohio EPA concurs with the proposed field change.

If you have any questions regarding the correspondence, please do not hesitate to contact me at 740-380-5289.

Sincerely,

Maria Galanti
Site Coordinator
Division of Emergency Remedial Response

MG/jg

cc: Melody Stewart, DHWM, Ohio EPA, Southeast District Office
Dr. Linda Bauer, LPP, Inc.
Vince Adams, Site Manager, US DOE PORTS

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File—LPP RMDC—RC