



Portsmouth Environmental Bulletin

June 2007

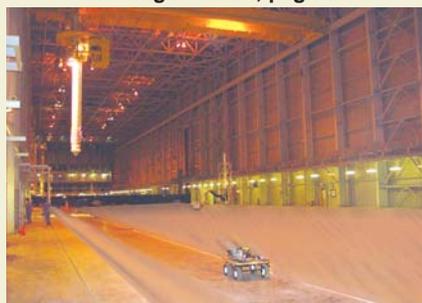
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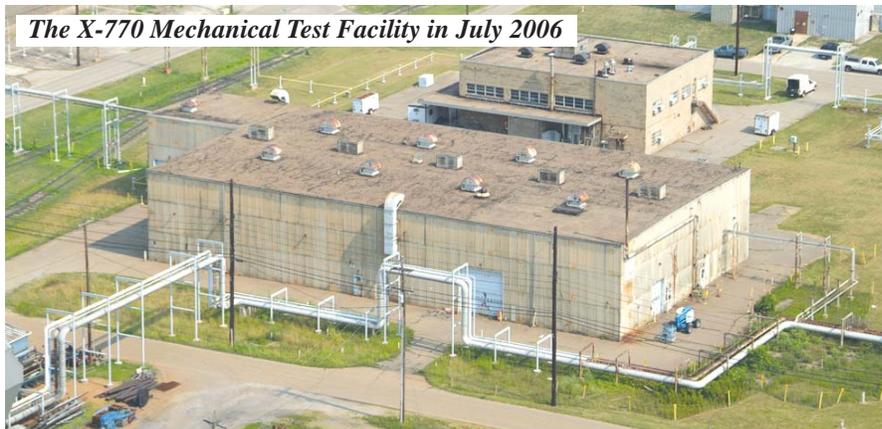


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The X-770 Mechanical Test Facility in July 2006



LATA/Parallax completes removal of 14th inactive facility

LATA/Parallax Portsmouth, LLC (LPP), the U.S. Department of Energy's remediation contractor, achieved a major milestone in the cleanup program at the Portsmouth Gaseous Diffusion Plant earlier this year with the demolition and removal of the X-770 Mechanical Test Facility. The 22,640 square foot structure was the largest of 14 inactive, surplus facilities that have been removed from the plant site in the past year.

Preparations for the building demolition were initiated in May 2006. Preliminary work included the removal of asbestos and other hazardous materials. Despite frigid temperatures, demolition of the structure began in late January and was completed on February 7, 2007. Final shipment of the building debris to the Nevada Test Site was completed in May.

"Due to the similarities of this building to the much larger, old gaseous diffusion process buildings, the demolition of the X-770 structure has provided excellent insights for the Department of Energy as we begin



Snow and interior roofing tumble as a cutting shear makes progress during the demolition of the X-770 building.

See X-770 INACTIVE FACILITY REMOVAL, page 2

Off-site shipments of stored waste nearing completion

A project to dispose of remaining containers of Department of Energy legacy waste in storage is coming to a successful conclusion.

DOE's Legacy Waste Disposition Program is more than 94 percent complete with over 48,000 of the 49,000 containers of waste in storage in 1993 shipped off-site for final disposition. The majority of the waste was low-level radiological waste, Resource Conservation and Recovery Act (RCRA) mixed waste and/or PCB-contaminated waste, generated from previous plant operations and environmental cleanup activities.

The DOE stored waste in 23 areas of the X-7725 Waste Storage Facility under a RCRA Part B Permit approved by the Ohio Environmental Protection Agency. These areas have been emptied and are being closed by LPP so the building can be leased and reused by the United States Enrichment Corporation's advanced centrifuge program. Closure of these waste storage areas is scheduled to be completed in July 2007.



Area B in the X-7725 facility is pictured at left as it looked in April 2006 before stored waste was removed. Below is the same area on August 18, 2006 after shipments were completed.



X-770 INACTIVE FACILITY REMOVAL

Continued from page 1

planning toward the future decontamination and decommissioning (D&D) of the massive process buildings at the plant," said William Murphie, manager of the Portsmouth/Paducah Project Office.

The X-770 project also involved extensive interface between LPP and the United States Enrichment Corporation to prevent any impacts to site operational activities because the building's location was within close proximity to major utility lines and operating facilities.

"We are extremely proud of our workers' efforts to safely complete the removal of this facility during some of the most extreme winter weather we've experienced in southern Ohio," said LPP's Project Manager Paul Kreitz. "With all the debris from the X-770 Building shipped to the Nevada Test Site for disposal, we have essentially completed this portion of our work more than two years ahead of the contract period of performance," he added. LPP's contract required the removal of all the structures from the site by September 2009.

The 14 Inactive, Surplus Facilities Removed By LATA/Parallax Portsmouth

Facility	Constructed	Demolished
X-230J-1 Environmental Monitoring Station	1968	Feb. 22, 2006
X-230J-8 Environmental Storage Building	1981	Feb. 23, 2006
X-740 Waste Oil Storage Facility	1982	Feb. 28, 2006
X-106B Old Fire Training Building	1967	March 16, 2006
X-616 Liquid Effluent Control Facility	1976	April 2006
X-615 Old Sewage Treatment Plant	1954	May 2006
X-344C Hydrogen Fluoride Storage Building	1958	May 2006
X-344E Gas Ventilation Stack	1958	May 2006
X-344F Safety Building	1958	May 2006
X-342C Waste Hydrogen Fluoride Neutralization Pit ..	1955	June-July, 2006
X-701D Water Deionization Building	1955	July 21, 2006
X-720A Maintenance & Stores Gas Manifold Shed	1954	August 2006
X-105 Electronic Maintenance Building	1957	October 2006
X-770 Mechanical Test Building	1954	Jan. 30-Feb. 7, 2007



The last piece standing of the X-770 facility in early February 2007.

Additional wells installed to monitor migration of plume

Four groundwater extraction wells were installed in late March and early April to control the flow direction of groundwater at the southern boundary of the Portsmouth Gaseous Diffusion Plant site. LATA/Parallax Portsmouth, LLC and teaming partner CDM installed the wells to mitigate further



One of the four wells is installed along perimeter road on the plant's south side.

migration of the plume slowly flowing under and around an existing subsurface barrier wall placed at the location in 1994.

The plume is associated with an old training facility and a contaminated materials disposal facility. Principal contaminants of concern are trichloroethene (TCE)

and technetium-99 (Tc-99). Sampling in one off-site groundwater monitoring well identified TCE at levels below the maximum contaminant level of 5ppb that would require cleanup action, however actions are being taken now to “pull” the plume back onto DOE property.

Placement of the new extraction wells was determined from groundwater modeling and data recently collected from a pumping test in the area. Extracted groundwater will be sent to the X-622 Groundwater Treatment Facility via subsurface piping for treatment.

The wells are the latest measure to stop the advancement of the groundwater plume. In addition to the subsurface barrier wall installed in 1994, the Ohio Environmental Protection Agency issued a Decision Document in 2001 which identified selected remedial measures involving installation of a barrier wall around the eastern and southern portions of the X-749 landfill and phytoremediation to control groundwater flow and remove volatile organic compounds. Other remedial measures had



Phytoremediation (hybrid poplar trees) efforts provide a backdrop to the well installations.

been implemented previously including a multimedia cap over the landfill, barrier walls, and a groundwater collection system.



Workers use mobile “Geoprobe” equipment to inject oxidant into the groundwater area.

Progress continues on X-701B plume

Groundwater treatment efforts continue to move forward in the X-701B plume area located on the plant's east side.

The second of five scheduled oxidant treatment mobilizations to occur in Phase II of the project has been initiated by LATA/Parallax. This second mobilization is the next step in treating the plume which contains the highest concentrations of trichloroethene, or TCE, an industrial solvent previously used at the plant to degrease equipment. The treatment process is in accordance with a Decision Document issued by the Ohio Environmental Protection Agency in December 2003 to use chemical oxidation for cleanup of the groundwater.

Phase I of the project was completed in November 2005 and yielded positive results. Overall, there was a 23% reduction in the average TCE concentration in groundwater and a 99% reduction in the average TCE concentration in the middle Gallia soils of the treated area. Following approval of a work plan submitted to the Ohio EPA, the company initiated Phase II and completed the first mobilization in October 2006.

Completion of the cleanup project is scheduled in early Fiscal Year 2010.



The sun sets following another day of construction at the DUF₆ conversion plant.

DUF₆ Conversion Plant 64% Complete

Operations expected to start in 2008

Construction progress continues by Uranium Disposition Services LLC (UDS) on the new depleted uranium hexafluoride (DUF₆) conversion plant at the Portsmouth Gaseous Diffusion Plant, focusing on completing construction later in 2007 and beginning initial testing in early 2008 for full operations by mid-2008.

According to John McCoy, UDS plant manager at the Portsmouth facility, the company has tallied more than 415,000 safe work hours without a lost time injury at the local site, and over one million safe work hours at the UDS sites in Ohio and Kentucky, a notable achievement on such a large construction project. Overall site construction is now more than 64% complete.

The conversion plant will convert DUF₆ to a stable uranium oxide form for reuse or disposal. The project has included construction of a 64,000 square foot conversion facility and other associated support facilities. Plant operations staff recently moved into the newly completed administration building. More than 150 permanent personnel will be working in operations.

The project is expected to require 18 years of operations to complete conversion of the 250,000 metric



John McCoy (center in hard hat), Portsmouth Plant Manager for Uranium Disposition Services, LLC addresses representatives of the United States Environmental Protection Agency during a recent visit to the site.

tons of DUF₆ in inventory that have been stored outside in cylinders at the Portsmouth site. UDS is the prime contractor to DOE and was awarded a contract in 2002 to design, construct and operate DUF₆ conversion facilities at both Portsmouth and Paducah, Kentucky.

USEC Continues to Make Progress in Plant's Cold Shutdown

Under contract to the U.S. Department of Energy, the United States Enrichment Corporation (USEC) continues to deactivate equipment, remove lube oils and treat uranium deposit hold-ups in the gaseous diffusion process equipment as part of Cold Shutdown. The Cold Shutdown project is approximately 65% complete and is expected to be accomplished by the end of September 2008.

Since January 2006, USEC has performed uranium deposit removal activities in the X-330 and X-333 process buildings. USEC has successfully completed treatment of four greater than safe mass (GSM) deposits and 12 planned expeditious handling (PEH) deposits. Currently, three GSM deposits and seven PEH deposits have chemical treatment underway. Plans are to remove final GSMs and remaining required PEH deposits by September 2008, based on USEC's current contract. The purpose for removing the uranium deposit hold-ups is to mitigate future worker health and/or waste hazards during the planned decontamination and decommissioning activities of the massive gaseous diffusion buildings.

In addition, USEC is also conducting a project for DOE that is removing technetium (Tc-99) contamination from uranium feed material so it can be reused by the nuclear industry. The project was started in June 2002



A uranium material handler uses an overhead crane to place a cylinder on an autoclave used in the Tc-99 removal process.

and currently is 78% complete with more than 11,724 metric tons of material cleaned to date. A total of 3,343 metric tons remain to be cleaned. The project is slated for completion by September 2008.

With the current price of uranium, the estimated value of the total 15,067 metric tons of uranium that will be cleaned and recovered for reuse under this project is over \$3 billion.

Project Completed to Transfer Oak Ridge Cylinders to Portsmouth

A project initiated in FY 2004 was completed in December 2006 to transfer about 6,000 UF₆ cylinders (mostly DUF₆) from the East Tennessee Technology Park (ETTP) at Oak Ridge, Tennessee, to the Portsmouth site. The project was completed three years ahead of schedule.

Uranium Disposition Services (UDS) is responsible for the approximately 4,800 cylinders of DUF₆ that will be processed through the new conversion plant being constructed onsite.

On December 18, 2006, LATA/Parallax Portsmouth (LPP) took receipt of the last shipment of small diameter UF₆ cylinders. Approximately 1,000 normal and enriched cylinders were received by LPP (and Bechtel Jacobs Company prior to LPP). All shipments were completed safely.

At right, each truck and cylinder were subjected to thorough inspection and strict safety measurements during transport and arrival at the Portsmouth plant site.



Major Milestone Achievement

1,383 Centrifuge Machines Removed to Prepare for Commercial Plant

A joint effort by the United States Enrichment Corporation and LATA/Parallax Portsmouth, LLC resulted in the achievement of a major milestone seven months ahead of schedule at a significant cost savings.

The project consisted of cleaning out the Gas Centrifuge Enrichment Plant (GCEP) of old centrifuge machines and waste equipment. The two companies combined to remove and dispose of 1,383 old centrifuge machines and a total of 682,134 cubic feet of GCEP waste to the Nevada Test Site, completing the project in August 2006. Based on acceleration of schedule and waste efficiencies, the total cost of the project was \$8.3 million less than the original project estimate.

The GCEP was built at Portsmouth by the Department of Energy in the early 1980s but the project was cancelled before being placed into production. Two of the planned eight process buildings were constructed on the southwest portion of the site, and centrifuge machines were installed in the first process building before the project was terminated in 1985. The GCEP Cleanout Project was completed so these facilities



Removal of the 1,383 old centrifuge machines (pictured above) was completed in August 2006. At left, the last machine is removed by an overhead crane system.

could be leased to USEC Inc. for an advanced commercial centrifuge technology program. USEC Inc. expects to have a Lead Cascade Centrifuge Demonstration Facility fully operational in mid-2007 and commercial plant enrichment operations begin in 2009.

Information Center moves

Residents interested in learning more about the cleanup activities being conducted at the Portsmouth Gaseous Diffusion Plant can



now do so at a new, more publicly accessible location. The Environmental Information Center (EIC), originally opened by the U.S. Department of Energy in 1993, was recently relocated by DOE's Infrastructure Contractor, Theta Pro2Serve Management Company, LLC (TPMC), to the Ohio State University Endeavor Center, 1862 Shyville Road (Room 220), Piketon.

The EIC is open Monday and Tuesday from 9 a.m. until noon and Wednesday and Thursday from noon until 4:00 p.m. After-hour appointments are available by calling (740) 289-8898 or e-mailing eic@falcon1.net.

Special Process Waste Project is completed

A Special Process Waste repackaging project was completed in May 2007 under the direction of LATA/Parallax Portsmouth, LLC.

The project began in November 2006 to repackage 1,063 containers of waste with uranium and technetium content so they could be shipped for treatment at a commercial facility in Oak Ridge, TN. All repackaging equipment was removed from the Portsmouth site by the end of May 2007. Once the repackaged waste is treated in Oak Ridge, the waste will be shipped to the Nevada Test Site for final disposal.

Transition Plans Reflected in FY '08 Budget Request

A proposed budget of \$248 million submitted by the Department of Energy for the Portsmouth site provides funding to continue toward planning for award of a decontamination and decommissioning (D&D) contract for the gaseous diffusion plant in Fiscal Year 2009.

More than \$200 million of the proposed budget is allocated for the D&D Fund, a figure that has increased more than \$55 million from FY07. The increase in funding reflects plans to support procurement activities to award a new contract for D&D of the gaseous diffusion plant to transition activities from Cold Shutdown to D&D of the facilities.

As the FY08 total closely matches that of FY07, much of the difference is reflected in Environmental Cleanup which decreased by \$51.5 million. The reduction reflects the completion of construction of a Depleted Uranium Hexafluoride (DUF₆) Conversion Facility and the completion of cleanout of the Gas Centrifuge Enrichment Plant (GCEP) to support USEC's Advanced Centrifuge Facility to be sited at Portsmouth.

The Department of Energy Environmental Management Budget Proposal (dollars in thousands)	
FY 2007	FY 2008
\$5,828,038	DOE Total EM Budget Proposals \$5,655,351
\$248,277	Budget Proposal for Portsmouth site \$248,279
\$151.3	D&D Fund \$206.4
\$72.2	Environmental Cleanup \$20.8

The Advanced Fuel Cycle Initiative, the technology development element of the Global Nuclear Energy Partnership (GNEP), requested \$395 million as part of DOE's overall Office of Science budget proposal. This research and development program focuses on methods to reduce the volume and long-term toxicity of high-level waste from spent nuclear fuel. The Piketon site is currently one of 11 in the nation being studied for placement of a facility for this technology, based on a proposal submitted by the Southern Ohio Nuclear Initiative Consortium (SONIC). Public meetings were held in the local area during March and April on the GNEP initiative. A decision on the GNEP initiative is expected by DOE in 2008.

Project Will Remove Old Process Converter Equipment

A project to dispose of 438 waste containers, each 11 feet in diameter and six feet tall, has been initiated by LATA/Parallax Portsmouth, LLC three years ahead of schedule.

The containers are portions of old converters once used in the gaseous diffusion process that were taken out of service and replaced during a major upgrade program in the 1970s.

The project involves the disposition and disposal of these "converter shells" which were filled with various components and waste that had also been removed from service or were generated during processing activities.

LATA/Parallax has completed 22% of the project. It is expected to be finished by the end of Fiscal Year 2008.

All converter shells will be transported to the Nevada Test Site for disposal.

At right, workers make sure the lifting apparatus is securely fastened prior to movement of a converter shell.



**United States Department of Energy
Environmental Bulletin**

P.O. Box 855
Piketon, OH 45661
Telephone: (740) 897-2336
Fax: (740) 897-2280
E-Mail: schilders@lpports.com

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**Documents Recently Added to the
Environmental Information Center**

These public documents have been recently added to the Administrative Records Files and Information Repository and are available for review at the DOE Environmental Information Center, located at the OSU Endeavor Center, Room 220, in Piketon, Ohio. Hours for the Information Center are 9 a.m. to noon on Monday and Tuesday, noon to 4 p.m. on Wednesday and Thursday, and closed Friday. After-hour appointments are available by calling (740) 289-8898 or sending an e-mail to eic@falcon1.net.

Additions to the Administrative Records Files

<u>Date</u>	<u>Title</u>	<u>Document Numbers</u>
◆ 08/06	Work Plan for the Groundwater Remediation of the X-701B Solid Waste Management Unit	DOE/PPPO/03-0020&D2
◆ 11/06	Corrective Measures Plan for the X-735 Landfill	DOE/PPPO/03-0019&D3
◆ 12/06	Closure Certification Report for the X-7725 RCRA Part B Closure of Areas B, H, J, K, L, P, P1, Q, and 4A in X-7725 Unit	DOE/PPPO/03-0037&D1
◆ 12/06	Site Treatment Plan Fiscal Year 2006 Annual Report for the Mixed Wastes (includes Proposed Site Treatment Plan for the Mixed Wastes)	DOE/PPPO/03-0007&D1; DOE/PPPO/03-0008&D1
◆ 12/06	Construction/Corrective Measure Completion Report X-342C Waste Hydrogen Fluoride Pit Demolition at the Portsmouth Gaseous Diffusion Plant	DOE/PPPO/03-0035&D0
◆ 1/07	Supplemental Evaluation to the 2003 Five-Year Evaluation Report for the X-740 Phytoremediation System	DOE/PPPO/03-0038&D1
◆ 3/07	2006 Groundwater Monitoring Report	DOE/PPPO/03-0039&D1

Additions to the Information Repository

<u>Date</u>	<u>Title</u>	<u>Document Numbers</u>
◆ 08/06	U.S. Department of Energy Portsmouth Annual Environmental Report for 2004	DOE/PPPO/03-0001&D1
◆ 08/06	U.S. Department of Energy Portsmouth Annual Environmental Data for 2004	DOE/PPPO/03-0002&D1
◆ 09/06	X-770 Mechanical Testing Facility	
◆ 11/06	Biological and Water Quality Study of the Portsmouth Gaseous Diffusion Plant Streams (Little Beaver Creek, Big Beaver Creek, Big Run, West Ditch, Scioto River), Pike County, Ohio	EAS/2006 - 10-4
◆ 12/06	Department of Energy Portsmouth Gaseous Diffusion Plant Depleted Uranium Hexafluoride Annual Report	PPPO-01-512-07
◆ 12/06	Audit Report: Follow-up of Depleted Uranium Hexafluoride Conversion	DOE/IG-0751

Additional information available at: www.lpports.com



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