Portsmouth Public Update Meeting

Environmental Cleanup at the Portsmouth Gaseous Diffusion Plant

August 21, 2007

The Ohio State University Endeavor Center
Piketon, Ohio
Welcome: Bill Murphie, Manager, U.S. Department of Energy’s Portsmouth/Paducah Project Office

Overview

~ Accomplishments

~ Planned activities for remainder of FY 2007

~ Planning for Decontamination & Decommissioning (D&D) of gaseous diffusion plant

Discussion on Public Involvement

Question/Answer Session

Break/Poster Session
U.S. Department of Energy

DOE Environmental Management
Portsmouth/Paducah Project Office

Cold Shutdown/Govt Furnished Services

USEC Corp.

Infrastructure

Theta/Pro2Serve

Remediation

LATA/Parallax

DUF₆

Uranium Disposition Services

DOE ORO

Administers USEC Lease

United States Enrichment Corporation

Leases Facilities at Portsmouth
As Private Enterprise and Conducts Some DOE Environmental Management Work

Private Enterprise
Developing American Centrifuge Plant in former DOE facilities at PORTS

SITE INFORMATION
Site Interfaces / Responsibilities
ACOMPLISHMENTS

- Inactive Facility Removals
- GCEP Cleanout Project
- Waste Removal
- Groundwater Treatment
- DUF$_6$ Conversion Plant Progress
- Cold Shutdown Activities
Between February 2006 and March 2007, 14 inactive facilities were removed from the site.
ACCOMPLISHMENTS
Inactive Facility Removals

Photos Below Show Inactive Facility Sites After Removal Actions Were Completed

X-230J-8 Environmental Storage Building
X-740 Waste Oil Storage Facility
X-720A Maintenance and Stores Gas Manifold Shed
X-230J-1 Environmental Monitoring Station
X-344F HF Safety Building
X-342C HF Neutralization Pit
X-344C HF Storage Building

X-701D Water Deionization Building
X-701D Water Deionization Building
X-105 Electronic Maintenance Building
X-106B Old Fire Training Building

X-615 Old Sewage Treatment Plant
X-344E Gas Ventilation Stack
X-770 Mechanical Test Facility
X-616 Liquid Effluent Control Facility
ACCOMPLISHMENTS
Most Recent X-770 Facility Removal

• Work was accomplished during inclement winter weather.
• Project eliminates future surveillance and maintenance costs associated with facilities.

• The 22,640 ft² X-770 Mechanical Test Building was the last inactive facility to be removed – also the largest and most complex.
• Demolition was completed in March 2007.
ACCOMPLISHMENTS
X-770 Facility Removal Video
Project was completed in August 2006 to remove old centrifuge machines and equipment from the Gas Centrifuge Enrichment Plant (GCEP). This work was finished seven months ahead of schedule and $8.3M below the original project estimate.
A total of 682,134 ft³ of GCEP waste was shipped off-site to Nevada Test Site for disposal – included 1,383 machines and 711 containers of centrifuge equipment.

- USEC (machine removal) and LATA/Parallax (waste disposition) teamed to successfully complete project.
- Areas are now leased to USEC for commercial centrifuge program.
The X-7725 facility has recently been emptied of waste and turned over from DOE to USEC Inc. for industrial reuse by the commercial centrifuge program.

Completion of the X-7725 facility cleanout resulted in a significant reduction of waste generated from 50 years of past uranium enrichment operations and cleanup activities conducted since the early 1990s.
• The last of more than 49,000 containers once stored in the X-7725 facility was removed in late May 2007.

• More than 265,000 ft² of permitted waste storage space were closed and cleaned to meet Resource Conservation and Recovery Act (RCRA) closure standards.

The last container of waste is removed by LATA/Parallax on schedule from the X-7725 on May 31, 2007
**ACCOMPLISHMENTS**

Legacy Waste Disposition

- 7,268 containers of waste were shipped off-site in FY 2006 (excludes GCEP) for treatment/disposition.

- 2,715 containers have been shipped off-site in FY 2007 through July 31, 2007.

- 98% of the legacy waste in storage at Portsmouth has been shipped off-site for final disposition. There are 1,138 containers remaining to be shipped by the end of 2007.
The volume of waste removed from the X-7725 facility would cover a football field nearly 14 feet deep.
On July 27, 2007, Ohio EPA Director Chris Korleski (above right) announced that cleanout of the X-7725 building was completed in accordance with regulatory requirements.

Department of Energy officials turn over the ceremonial X-7725 building ‘key’ to Dan Rogers of USEC Inc. (pictured at right) for reuse by the commercial centrifuge program.
Actions have been taken to treat a groundwater plume with the highest trichloroethylene (TCE)* concentrations located on the east side of the plant and additional extraction wells have been installed to mitigate groundwater migration at the southern plant boundary.

* TCE was previously used as an industrial solvent to degrease heavy equipment
Oxidant chemically removes TCE contamination

Ohio EPA issued Decision Document for final remedy of the X-701B groundwater plume on the east side of plant – Treatment by oxidant injection

- Completed 413 injections of oxidant treatment through early August 2007.
- Phase I (2005) and Phase II (2006-2007) oxidant treatments have had positive effect in removing TCE.
- Project completion (4 years of groundwater treatment followed by installation of soil cap over plume area) is expected in FY 2010.
ACCOMPLISHMENTS

Oxidant Treatment at X-701B

Plume Area Showing Positive Results
Groundwater sampling identified one off-site monitoring well with detectable levels of TCE (less than the drinking water standard of 5 ppb). Four new extraction wells were installed in March-April 2007 to “pull” the TCE groundwater plume at southern boundary back to DOE property for treatment at an on-site groundwater treatment facility.
ACCOMPLISHMENTS

duf₆ Conversion Plant Progress

Overall construction more than 73% complete

Conversion of the entire DOE DUF₆ cylinder inventory (250,000 metric tons) at Portsmouth will take approximately 18 years; Operations to start in 2008.
• Conversion process facilities are to be complete by late 2007.
• Full operations to begin by mid-2008 after testing/start-up phase.
• More than 80% of site work has been performed by local small businesses.

Further information available at: http://www.uds-llc.com
• Gaseous Diffusion Plant transition - from Cold Standby to Cold Shutdown since plant will no longer be operated.
• Includes:
  - Uranium deposit removal
  - Removal of PCB oils
  - Removal of lube oils
  - Preparing gaseous diffusion facilities for future decontamination and decommissioning (D&D)
• Cold Shutdown contract with USEC is through FY 2008.

By chemically removing uranium deposit holdups in the process equipment now, DOE is avoiding potential future health/waste hazards during surveillance and maintenance and final plant D&D.
• The Technetium (Tc-99) Removal Project was initiated by DOE in June 2002 and is scheduled for completion in FY 2008.

• USEC cleans cylinders of out-of-specification uranium contaminated with technetium to make the uranium usable.

• 12,683 Metric Tons Uranium (MTU) have been cleaned to date; 2,382 MTU are remaining: project is 84% complete.

**ACCOMPLISHMENTS**

*Cleanup of Technetium from Uranium Feed Material*

Uranium material handler uses radio-controlled overhead crane to place empty cylinder on autoclave used in Tc-99 removal. Process flows uranium through a trapping device to remove contaminants.
## ACCOMPLISHMENTS

**Summary**

<table>
<thead>
<tr>
<th>PROJECTS</th>
<th>DESCRIPTION</th>
<th>COMPLETION</th>
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<tbody>
<tr>
<td><strong>Inactive Facility Removals:</strong></td>
<td>14 Inactive Facilities Completed March 2007</td>
<td>100% COMPLETE</td>
</tr>
<tr>
<td><strong>Legacy Waste Disposition:</strong></td>
<td>Scheduled for completion December 2007 *</td>
<td>98% COMPLETE</td>
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<tr>
<td><strong>Gas Centrifuge Enrichment Plant Cleanout:</strong></td>
<td>Completed August 2006</td>
<td>100% COMPLETE</td>
</tr>
<tr>
<td><strong>Environmental Remediation:</strong></td>
<td>Scheduled for completion 2010 (exc. Deferred Units)</td>
<td>82% COMPLETE</td>
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<tr>
<td><strong>Technetium (Tc-99) Removal Project:</strong></td>
<td>Scheduled for completion Sept. 2008</td>
<td>84% COMPLETE</td>
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<td><strong>Removal of 438 Converter Shells:</strong></td>
<td>Scheduled for completion Sept. 2008</td>
<td>22% COMPLETE</td>
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<td><strong>Cold Shutdown of GDP-Deposit Removals:</strong></td>
<td>Scheduled for completion Sept. 2008</td>
<td>65% COMPLETE</td>
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<td><strong>DUF₆ Conversion Plant Construction:</strong></td>
<td>Start of Operations in 2008</td>
<td>73% COMPLETE</td>
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* Subject to TSCA Incinerator availability in Oak Ridge, TN for carbon sludge.
PLANNED ACTIVITIES
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*For Remainder of 2007*

- Complete treatment/disposal of remaining containers (1,138)* of stored legacy waste.
- Continue repackaging and off-site shipment of 402 converter shells; finish by end of FY 2008.
- Complete Phase II X-701B groundwater plume oxidant treatments (272 additional injections).
- Initiate project to remove X-744T/U warehouses.
- Complete upgrade of Fog Road.

* Subject to TSCA Incinerator availability in Oak Ridge, TN for carbon sludge (31 containers)
Efforts to upgrade Fog Road were officially initiated with a groundbreaking ceremony in July 2007. Before the road can be reopened, it must be brought up to Department of Transportation standards. This will consist of:

- Paving the length of the road
- Creating two 9-foot-wide lanes
- Making improvements to two (2) bridges spanning Little Beaver Creek
- Replacing guardrails

The road is scheduled to re-open to the public in late 2007.
PLANNED ACTIVITIES
Upgrade of Fog Road

Location of Northeast Bypass Road, commonly called Fog Road
PLANNING FOR D&D
(DECONTAMINATION & DECOMMISSIONING)
CD-1 Approval from DOE Headquarters was received August 17, 2007 authorizing the Department to proceed with preparing competitive procurement for D&D of gaseous diffusion facilities with contract award expected in FY 2009.
PLANNING FOR D&D

• The 3 former uranium enrichment process buildings are the size of 158 football fields.

• The total square footage of all 134 facilities is more than 10 million square feet, equal to 2 Pentagons.
D&D Phase 1 Schedule*

- Deactivation
- Gaseous Diffusion Plant D&D
- Contaminated Soil and Groundwater Remediation
- Surveillance and Maintenance / Security Activities

* Phase 2 includes D&D of Remaining facilities after American Centrifuge Plant closure.
Shared Land Use at the Portsmouth Site

- Orange cross-hatch: Phase 1 D&D
- Orange solid: Phase 2 D&D
- Light blue: DOE/USEC Common Areas
- Dark blue: Depleted Uranium Conversion Facility and Cylinder Yards
- Yellow: USEC American Centrifuge Plant

Note: Total Site Acreage: 3,700 (boundary in red) - Acreage Within Perimeter Road: 1,200
Two major questions to address as the site begins D&D planning:

• How clean is clean?
• How is the waste to be disposed?
Public input will be crucial for future plant decisions on D&D of buildings, waste disposition, and final end use of site.

- Seek interest in forming local stakeholder working group or Citizens Advisory Board
Goal will be to incorporate Lessons Learned from other DOE Sites undergoing D&D

Apply recommendations from Energy Communities Alliance “The Politics of Cleanup”


Public participation/involvement is required under both RCRA and CERCLA environmental regulations
The “Politics of Cleanup” 15 Recommendations:

1. All Parties Must Collaborate
2. Know the Rules
3. Understand Federal Agencies’ Goals
4. A Cleanup Contract with Defined Goals Must Be Used
5. Understand Community Values
6. Education is Essential
7. Congress Must Make Cleanup a Legislative Priority
8. Local Presence Facilitates Cleanup
9. Federal Agency Leadership Sets the Tone
10. All Parties Must Take Into Account Post-Cleanup Requirements
11. The Parties Must Build a Working Relationship
12. Be Organized
13. Resources Ensure Parties Can Participate
14. Following the Minimum in the Law is Not Enough
15. Engage Each Other Regularly
Public Involvement
Opportunities for Input/Information

- **Public update meetings, information sessions, public comment periods**

- **Environmental Information Center**
  
  Open to the public, Center was recently relocated for better public accessibility
  
  Location: OSU Endeavor Center, Room 220
  
  E-mail address: eic@falcon1.net

- **Environmental Bulletin newsletter**
  
  June 2007 issue available

- **Information websites**
  
  
  United States Enrichment Corporation : www.usec.com
  
  LATA/Parallax Portsmouth : www.ipports.com
  
  Theta Pro2Serve Management Company : www.tpmcllc.com
  
  Uranium Disposition Services LLC : www.udsl-lc.com
Questions on the Portsmouth programs?

For further information:
DOE Portsmouth/Paducah Project Office
(859) 219-4000

or

LATA/Parallax Portsmouth Public Affairs
(740) 897-2336

www.lpports.com