

WM2016 Conference Panel Report

PANEL SESSION 109: **Featured Sites US DOE-EM Lexington, KY Office (PORTS and PAD)**

Co-Chairs: **Robert Edwards**, *US DOE, Acting Manager Portsmouth Paducah Project Office (PPPO)*
Lisa Burns, *WAI Energy and Sustainability Consultant*

Panel Reporter: **Lisa Burns**, *WAI Energy and Sustainability Consultant*

Panelists:

1. **Mr. Joel Bradburne**, *US DOE PORTS Site Lead*
2. **Dr. Vince Adams**, *US DOE PPPO/Portsmouth Site Director*
3. **Jennifer Woodard**, *US DOE Paducah Site Lead*
4. **Reinhard Knerr**, *US DOE Acting DUF6 Federal Project Director*

Approximately 60 people attended this panel session which featured DOE's Portsmouth/Paducah Project Office (PPPO). This DOE Project Office is responsible for management and cleanup at the Portsmouth, Ohio and Paducah, Kentucky former Gaseous Diffusion Plant (GDP) sites. Portsmouth (PORTS) is focused on performing D&D of the plant – including demolition of legacy structures and disposition of equipment from the large process buildings. DOE and the regulators recently approved plans for controlled demolition of the massive GDP buildings and the related facilities, along with the construction of an onsite waste disposal facility. At Paducah (PGDP), the PPPO is continuing its groundwater remediation program while stabilizing and deactivating its process buildings and facilities in preparation for future D&D. Demolition of the final inactive facility from PGDP's pre-shutdown cleanup scope was completed in June 2015. The PPPO also continues to manage the two depleted uranium hexafluoride (DUF6) conversion plant operations and their progress towards full production capacity at both sites.

Summary of Presentations

Joel Bradburne started out by discussing the evolving mission at the PORTS site and the current activities of active D&D. These recent activities included:

- Treating more than 680 gallons of TCE-contaminated groundwater.
- Obtaining Records of Decision (ROD) for on-site waste disposal facility (OSWDF) and the D&D of process buildings.
- Demolishing 36 facilities including more than 700,000 square feet of buildings.
- Recycling 25 million pounds of material, including 14 million pounds of steel, aluminum, and copper from the demolition of the former electrical switchyard.

Other major activities taking place at the site over the last year included the continuing deactivation of the X-326 with expected cold and dark status and criticality incredible by September 2017. Deactivation has also started in the X-330 and X-333 GDPs.

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The onsite waste disposal facility work included the completion of critical design package CD-0/CD-1 – 1/CD-3A with CD-2/CD-3 packages scheduled for the first quarter of FY 2017. Tree clearing was completed in January 2016 and construction will begin in April 2016. The first waste placement is expected in November 2020. Joel also discussed the five-year planning scenario and the accompanying challenges including securing stable funding for the OSWDF, the non-destructive assay (NDA) issues that have caused delays, the barter program ending in 2020 and its impact on site funding, and finally, the aging plant infrastructure which requires the use of D&D funding. All of these issues have created enormous challenges for the PPPO and they continue to obtain lessons learned from other sites, most notably, Oak Ridge. Joel also noted that the safety issues over the last few years have greatly improved and PORTS has dramatically increased their scores in the National Safety Council Safety Culture Surveys.

Joel stated that community involvement continues to be a key accomplishment for PORTS and one that continues to provide the site with a powerful partnership.

Jennifer Woodard provided an overview of the current PGDP environmental cleanup scope:

- Long-term facilities removal (500 plus structures with a footprint of nearly 200 acres and the cleanup of underlying soils, if necessary),
- Surface water remediation (~ 6 miles of contaminated creeks, ditches, etc.), and
- Deactivation work including infrastructure optimization, facility modifications and repairs, deactivation activities, and uranium deposit removal from process buildings.

Jennifer detailed several key projects currently being performed at the site. Uranium deposit removal is being conducted to improve worker safety for the remaining D&D work at the site. She also discussed the site optimization studies being performed which include security optimization, sewer evaluations, water treatment facility optimization, and steam, air, nitrogen, and chilled water optimization. In concert with the optimization studies being conducted, the switchyards have been reconfigured to accommodate the reduced power needs onsite and the old steam plant was shut down in May 2015 and five, new, smaller, modular, package boilers were installed to make the system more efficient. In addition, a roof repair project was completed for the site's 74 acres of process buildings roofs in order to reduce the S&M costs due to water leaks.

Jennifer also outlined the activities being conducted to deactivate the facilities including lube oil, PCB oil, and R-114 refrigerant removal and disposition, and fissile material deinventory including packaging and disposal.

Jennifer continued with a look at the PGDP future vision (end state) which includes facility demolition, burial grounds, surface water, groundwater, and soil remediation, footprint reduction by land transfer, delisting from the National Priorities List, and the transfer of the remaining responsibilities to the DOE Office of Legacy Management.

Reinhard Knerr started his discussion with a description of the DUF6 process and the activities that took place at each plant in FY 2015. Portsmouth currently has three lines and six conversion

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units (~19,000 cylinders) in operation and Paducah has four lines and eight conversion units (~44,000 cylinders) operating.

Reinhard stated the FY 2015 productions results as follows:

- 10,608 MTs of DUF6 processed (42% of FY 2015 goal)
- 1,595,000 gallons of hydrofluoric acid safely shipped offsite for recycle into commerce
- Facility availability 36%.

Reinhard discussed the numerous issues that have plagued the two sites over the past year including the PORTS HF condenser failure in February of 2015 which led to the KOH event in March 2015. Operations were shut down in March until one line resumed operation in October 2015. A chemical exposure in November then caused another shutdown. Full operations are planned to resume in May 2016 at PORTS. PAD had its own issues including an oxide release occurred in May of 2015 causing a shutdown of operations and LOTO issues in the summer of 2015 caused re-start to be delayed. Full operations are expected to begin in May of 2016 at PAD as well.

Reinhard discussed the key tasks for FY 2016:

- Complete corrective actions from KOH and chemical exposure events,
- Complete HF condenser failure investigation,
- Perform HF storage tank inspections,
- Conduct backlog maintenance – this will necessitate plant outages,
- Replace hydrogen system at both plants, and
- Extend current DUF6 project operating contract through FY 2016 to accommodate DOE selection of the next DUF6 project operating contractor for the next 5 years.

Reinhard also stated that the PPPO plans to replace or improve equipment at both plants to increase availability. These improvements include:

- Replace hydrogen generation technology,
- Improve autoclave and conversion unit heating control,
- Streamline cylinder modification process and cylinder movement,
- Optimize oxide transfer process, and
- Reduce oxide flow restrictions.