

WM2017 Conference Panel Report

PANEL SESSION 125: US DOE Oak Ridge: A Comprehensive, Investment Worthy Approach to Cleanup

Co-Chairs: **Jenny Freeman**, *Strata-G, LLC*
Jay Mullis, *US DOE*

Panel Reporter: **Betsy Child**, *Restoration Services, Inc.*

Panelists:

1. **Jay Mullis**, *Site Manager, US DOE-OREM*
2. **Alan Stokes**, *Associate Director, Planning and Execution Division, US DOE OREM*
3. **Ron Slottke**, *Project Services and Support Manager, URS | CH2M Oak Ridge, LLC (UCOR)*
4. **Ken Harrawood**, *Senior Director, Consolidated Nuclear Services (CNS)*
5. **Dan Macias**, *General Plant and Capital Projects Manager, URS | CH2M Oak Ridge LLC (UCOR)*
6. **Brian Henry**, *Y-12 Portfolio Federal Project Director, US DOE OREM*
7. **Brian DeMonia**, *Environmental Scientist, US DOE*
8. **William McMillan**, *Project Manager, US DOE*
9. **David Adler**, *Director of the Quality and Mission Support Division, US DOE OREM*
10. **Samantha Pack**, *Environmental Stewardship Manager, URS | CH2M Oak Ridge LLC (UCOR)*

The Department of Energy (DOE) Oak Ridge Office of Environmental Management (OREM) along with primary cleanup contractor, URS CH2M Oak Ridge, LLC (UCOR) discussed its comprehensive approach to cleanup of the Oak Ridge Reservation (ORR). More than 50 people attended the session.

Summary of Presentations

Jay Mullis DOE-OREM Acting Manager, opened the session with an overview of the cleanup mission in Oak Ridge. He described the comprehensive cleanup plan and discussed OREM's cleanup progress including realization of Vision 2016, the removal of all uranium enrichment buildings at the East Tennessee Technology Park (ETTP) as well as near-term goals. He noted that while much progress has been made, significant cleanup remains for ORR.

Mullis also emphasized the importance of Lessons Learned and the need to maintain a highly skilled workforce as the cleanup focus shifts from ETTP to Oak Ridge National Laboratory (ORNL) and the Y-12 National Security Complex (Y-12). He said collaboration with partners is essential for sustained success. Safety remains the overarching concern. Additional on-site waste storage capacity will be needed to complete cleanup. Funding source will transition from DOE's Uranium Enrichment D&D Fund to Department of Defense funds as work moves to Y-12.

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Alan Stokes, DOE-OREM Associate Director, Planning and Execution Division, described work being done on Excess Contaminated Facilities at ORR. More than 400 Excess Contaminated Facilities are comingled with active ongoing missions at ORNL and Y-12. Some of these buildings are over 75 years old and have deteriorated to the point where they pose significant risk to workers and the environment. Available funding in FY2016 enabled stabilization work to begin, and level funding in FY2017 is ensuring further progress. DOE is currently developing a comprehensive cost and schedule for addressing these facilities, including ultimate demolition, over the next 30 years. It is estimated that \$8 billion to \$13 billion will be required to complete stabilization, demolition of cleanup of these facilities.

Ron Slottke, UCOR Project Services and Support Manager, discussed the status of key excess contaminated facilities projects at ORR. These include the Building 7500 Homogenous Reactor Experiment at ORNL which is being deactivated; Building 3026 Radioisotope Development Laboratory at ORNL where water has been drained and the Alpha-4 Lithium Enrichment Facility where roof repairs have been completed; the COLEX Column Exchange Equipment at Y-12 which is being deactivated and mercury is being removed; and Biology Complex Research Facilities at Y-12 where characterization work is underway.

Ken Harrawood, Senior Director, Consolidated Nuclear Services, described the vital national security mission of the Y-12 Nuclear Security Complex. He discussed work being done to stabilize excess contaminated facilities at Y-12 and underscored the need for continued level funding to finish the required work.

Brian Henry, Y-12 Portfolio Federal Project Director, discussed Oak Ridge Environmental Management capital projects, highlighted by the Outfall 200 Mercury Treatment Facility deemed necessary for completion prior to further D&D work at Y-12. He also discussed plans for the Sludge Processing Facility specifically for legacy TRU waste. He said additional on-site waste disposal capacity will be needed by the mid-2020s and described DOE's Vision 2020 which calls for completion of cleanup at ETTP by the year 2020, and Vision 2024 which addresses needed D&D and cleanup activities at Y-12 and ORNL.

William McMillan, DOE-OREM Project Manager, discussed processing of liquid high-level waste water from ORNL and described a facility where waste is collected in tanks, often neutralized with sodium hydroxide, concentrated by evaporation, and stored for future processing and disposal. Upon cooling, the liquid low-level waste concentrate separates into sludge and supernatant phases. He also reviewed a new process for Transuranic waste. Test facilities will be established based on the new technology to manage waste planned for shipment to the Nevada Nuclear Security Site.

McMillan also provided an overview of the history of OREM. He said some 300 operating facilities at ORNL and Y-12 present significant maintenance issues and risks. Many systems are obsolete and suffer from years of deferred maintenance. Tight funding has created challenges and increased the backlog for addressing excess contaminated facilities. Specific examples include Alpha-4, ORNL Process Water Treatment and the Molten Salt Reactor Experiment.

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Dan Macias, UCOR Manager of General Plant and Capital Projects, showed a video describing the planned Outfall 200 Mercury Treatment Facility. He described the Headworks facility, a two million gallon storage tank that is a central element of the Treatment Facility. Final design on the Facility is complete. **Macias** also discussed UCOR's approach for managing capital asset projects through partnering and Integrated Project Teams. He stressed the importance of clear roles and responsibilities on the part of all involved parties.

Brian Demonia, DOE-OREM Environmental Scientist, discussed plans will construct a Mercury Treatment Facility at the Y-12 site. The treatment facility is a key component of the mercury remediation strategy at Y-12 and will help reduce mercury releases into the Upper East Fork Poplar Creek. It will also serve as an important control measure during cleanup of the site. **Demonia** said innovative approaches will be utilized in the process, including macro-encapsulation process involves sorting, segregating and super-compaction of mixed debris wastes thus resulting in significant volume reduction.

David Adler, Director of the Quality and Mission Support Division, DOE-OREM, discussed the status of groundwater monitoring at ORR. He emphasized the need to control sources of onsite contamination and mitigate offsite releases. DOE has an extensive program in place to manage groundwater supported by an annual budget of approximately \$12 million.

Samantha Pack, UCOR Environmental Stewardship Manager, discussed plans for the first watershed scale groundwater Record of Decision. The first phase of studies will examine 13 or 37 plumes as part of a broad treatability study. Results of the study will determine how and if groundwater plumes will be addressed as part of the final Record of Decision (ROD) for the East Tennessee Technology Park.