

# Oak Ridge Hosts EM SSAB National Chairs' Meeting



Left: Barbara Ulmer, staff at the Nevada Site Specific Advisory Board, tours the K-25 History Museum during the Oak Ridge Reservation site tour held for EM SSAB Chairs' Meeting attendees in September.

Below: EM SSAB Chairs' Meeting attendees see the future site of the K-25 Viewing Platform during the Oak Ridge Reservation site tour held in September.

Environmental Management Site-Specific Advisory Board (EM SSAB) members and DOE leadership gathered in Oak Ridge recently for the annual EM SSAB Fall Chairs' Meeting.

Each spring and fall, officers from SSABs across the country gather to meet with DOE officials to discuss the latest happenings around the EM complex. Oak Ridge hosted this year's Fall Chairs' Meeting for the first time hosting since Spring 2016, giving ORSSAB members generally unable to travel an opportunity to experience a chairs' meeting and meet members from other sites.

The event, which was held September 24 – 26 at the DoubleTree Hotel in Oak Ridge, featured visits and updates from DOE leadership, including Jeff Avery, EM principal deputy assistant secretary.

"The advice and the independent perspective that we get from all of you makes a huge difference," said Avery,



speaking to board members. "You give us a window into the communities that we wouldn't have to understand issues and concerns, and it really makes us a better program, it makes us stronger, and it leads to better outcomes."

Avery discussed progress and accomplishments being made at sites throughout the complex, including such examples as the recent completion of soils cleanup at Oak Ridge's East

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## Reservation Update



*An aerial view of progress on the Environmental Management Disposal Facility footprint. Crews moved Bear Creek and Haul roads, and cleared the area to conduct a groundwater field demonstration.*

### Community, Stakeholders View Disposal Facility Progress

OREM and contractor UCOR recently hosted more than 50 guests on a guided tour to observe progress on the construction of the Environmental Management Disposal Facility (EMDF).

EMDF is a vital piece of infrastructure that will provide the waste disposal capacity OREM needs to complete cleanup at the Y-12 National Security Complex (Y-12) and Oak Ridge National Laboratory (ORNL).

Guests took a bus tour through the construction site, traveling on roads rerouted to accommodate the new facility. The new routes were part of early site preparations completed in May.

The first phase of the project was completed \$10 million under budget and six months ahead of schedule.

The tour offered guests a view of the project's scale, completed work and current activities. Participants disembarked from the bus on the EMDF footprint for an informational session hosted by OREM and UCOR subject matter experts. Those experts provided in-depth project information

and progress details, with the facility as the backdrop.

Leadership and representatives from EPA and TDEC were also on hand for the tour and witnessed the results of their collaboration on the project.

Work is underway on the project's second phase, known as the groundwater field demonstration. The purpose is to understand how groundwater levels adjust following construction of the landfill. The study will span two wet seasons to capture data to help inform and finalize EMDF's design on the bottom elevation of the landfill.

Field work began on that phase in February, and monitoring of groundwater elevations is scheduled to begin in December.

EMDF is slated for completion in 2030.

### In-House Repairs Keep U-233 Project on Track

OREM contractor Isotek recently took a different approach to machinery installation and repairs, saving time and money on the highest priority cleanup project at ORNL.

Isotek is responsible for eliminating

the inventory of uranium (U)-233 stored in the world's oldest operating nuclear facility, located at ORNL. That material presents risks and is costly to keep safe and secure. Originally created in the 1950s and 1960s for potential use in reactors, U-233 proved to be an unviable fuel source.

Half of the U-233 inventory was disposed of between 2011 and 2017. The remaining material requires processing to convert it into a form safe for shipment and disposal.

That processing requires highly skilled and trained employees who operate manipulators. The machines are essentially the "hands" that handle nuclear material, performing tasks inside protective hot cell structures.

While manipulators can perform intricate tasks and lift as much as 100 pounds, they are delicate machines with lots of small parts and cables that require absolute precision timing to work properly.

Small issues with manipulators can result in major impacts to the project.

During the first eight months using the manipulators, beginning in 2022, Isotek experienced excessive downtime due to malfunction issues. Each time, manipulator repairs caused processing delays as the project waited for subcontracted technicians to arrive.

And once the subcontracted support arrived, repairs were difficult to perform due to employees' lack of experience on the state-of-the-art manipulators.

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*Isotek brought in a technical expert for two weeks to train millwrights on how to maintain and repair manipulators essential to the Uranium-233 Disposition Project.*

Isotek primarily uses a brand of manipulators fabricated in Germany. With no local subject matter experts, Isotek brought in a technical expert from Germany to help train the contractor's in-house millwrights.

Over the course of two weeks, the expert trained them on the proper way to repair, assemble and install the manipulators. Isotek recorded the training for use in instructing future millwrights.

Having the training and expertise in-house allows for much faster repairs and avoids delays caused by limited availability of other repair technicians. That helps the project remain on schedule with processing operations.

Isotek has already exceeded its 2024 performance goals for processing U-233, six months ahead of schedule.

The contractor has more than 10 manipulators in use on the U-233 Disposition Project. In addition to the training, Isotek repurposed space for the millwrights to conduct maintenance and repairs.

Since making those adjustments, the hot cells have not been shut down for unplanned manipulator repairs. Repairs only take half a day.

## Reactor Removal Advances Deactivation Project at ORNL

Crews recently successfully lifted and removed the lower reactor vessel from the Oak Ridge Research Reactor, also known as Building 3042.

The accomplishment was a major development for one of the largest deactivation projects at ORNL. Removing the vessel was the first step before preparing the remainder of the facility for demolition.

Workers used a 72-inch diamond wire saw to cut the final pieces that held the lower reactor vessel in place at the bottom of the reactor pool.

They used a 20-ton overhead crane to lift that equipment and load it into a 32,000-pound protective cask to ship it for disposal offsite.

UCOR had taken out the top portion of the reactor vessel in fall 2023. After that, crews focused on filtering and draining the reactor pool water to reach irradiated materials and prepare for the lower reactor vessel removal.

Rigorous safety measures were in place due to high radiation dose rates, and those rates increased as thousands of gallons of pool water were pumped into tanks outside the facility, lowering the buffer between the radioactive materials and workers.

With the wastewater safely drained, employees performed sampling and characterizing to ensure the work areas remained safe for final tasks, including removal of components.

Workers removed 127,000 gallons of water and sediment to reach the lower portion of the reactor vessel, which sat on the pool floor. They also took out the lead brick shielding in the basement that surrounded the pool. Twenty crew members loaded 157,000 contaminated bricks into containers.

The next steps involved in preparing the reactor for demolition consist of isolating and deactivating 6,000 feet of piping. Crews will also finish draining the pool water and encapsulating the 25-foot-deep pool with a fixative to reduce contamination migration during demolition.



*The reactor vessel of the Oak Ridge Research Reactor is loaded into a protective shipping container for transportation and disposal offsite.*

## Leading Authority Discusses OREM Restoration Efforts

ORSSAB members learned more about OREM's Natural Resource Damage Assessment and Restoration (NRDAR) efforts during the board's October monthly full board meeting and EM & Stewardship Committee meeting.

The NRDAR process aims to restore natural resources impacted by DOE's historic operations on the Oak Ridge Reservation. These operations date back to the Manhattan Project in the early 1940s.

Recently, OREM signed a \$42-million agreement to complete work toward restoring natural resources and replacing natural resource services equivalent to what was lost over the years in the region.

TDEC's Debbie Duren, a leading authority on the NRDAR process, gave ORSSAB members an overview of NRDAR efforts and their history, as well as OREM's involvement and the grant process that will be used to implement the restorations.

A trustee council comprised of representatives from TDEC, the U.S. Fish and Wildlife Service, Tennessee Valley Authority (TVA) and OREM evaluated how natural resources were injured and developed a restoration and compensation plan.

All funds from the \$42 million agreement will be deposited into an account held by the State of Tennessee to provide grants for a wide range of



*ORSSAB Member Christine Michaels (left) learns more about OREM's Natural Resource Damage Assessment and Restoration efforts from TDEC's Debbie Duren (center) and OREM's Roger Petrie during the board's October monthly meeting.*

local projects that either enhance the area's natural resources or provide nature and recreational opportunities.

"Through this agreement, DOE is accounting for past impacts and creating many new opportunities to enhance how residents can enjoy this beautiful region," said OREM Manager Jay Mullis after the agreement was finalized.

Local projects eligible for grants must be in one of five categories: habitat creation, habitat restoration or enhancement, habitat preservation, groundwater, or recreation.

Grant applications do not require a minimum value and can go as high as millions of dollars for projects in the Oak Ridge area.

"TDEC is pleased to see this agreement finalized, and we eagerly anticipate projects that will support these local communities," said

TDEC Commissioner David Salyers.

"This funding will protect the natural resources in the area as well as go towards outdoor recreational opportunities for Tennesseans, creating a more balanced and healthy environment for all."

Examples of applicable projects include clearing away abandoned parking lots to plant native vegetation, removing invasive species, land conservation, installing streets and parking lots with permeable pavements to improve rainwater infiltration, and septic conversions.

Projects also can improve public use of natural resources, such as building or improving boat launches and fishing piers, purchasing and restoring land with public access to water, and creating public hiking and biking trails or wildlife viewing areas.

In an earlier phase, the trustees focused on DOE's impacts to resources in Watts Bar Reservoir, located on the Tennessee River in east Tennessee. In 2009, they determined the terms of an agreement that entailed DOE establishing a 3,000-acre conservation easement and funding projects to improve recreational fishing access and opportunities.

This current second phase focuses on the balance of the Oak Ridge Reservation.



*Trustee Council members, comprised of DOE, TDEC, TVA, and the U.S. Fish and Wildlife Service, look on as OREM Manager Jay Mullis and TDEC Commissioner David Salyers sign the \$42 million agreement.*



## OREM Celebrates Vision 2024, National Excellence Award

OREM and contractor UCOR recently celebrated achieving Vision 2024, the culmination of 20 years of cleanup at ETTP.

This effort — one of the nation's largest environmental cleanup projects — transformed a former Manhattan Project and Cold War-era uranium enrichment complex into a multiuse industrial park.

Congressional, state, and local leaders, private industry, and top officials from DOE and the EPA joined OREM and UCOR to mark the end of major fieldwork at ETTP.

“Our progress has transformed the site from an unusable liability into an economic asset for the Oak Ridge community,” OREM Manager Jay Mullis said.

That was made possible through extensive demolition and soil excavation. Crews completed the teardown of all 500 buildings at ETTP in 2020. Since then, they've been busy removing building slabs and soil impacted by previous operations beneath the footprint of the former structures.

Initial estimates indicated approximately 100,000 cubic yards of soil would require excavation but increased as work progressed. By the end of the project, workers had removed and disposed of more than 554,000 cubic yards of soil, equaling nearly 50,000 dump truck loads.

“We are proud to have kept the project on schedule despite the increased work needed to address the additional excavation,” said UCOR President and CEO Ken Rueter. “As with any cleanup or remediation project, maintaining flexibility, planning for the unexpected, and approaching each project with a focus on safety and efficiency has allowed us to successfully complete this work and provide continued benefit to the American taxpayer.”

With soil remediation now complete, an EM 2024 priority, DOE can transfer the remaining federally owned parcels of land at the site to the community for



*OREM General Manager Jay Mullis speaks at the Vision 2024 Celebration at ETTP.*

beneficial reuse.

“As we execute our mission, we are increasingly focused on the future of those who live near our sites in communities,” said EM Senior Advisor Candice Robertson. “The historic transformation of ETTP is a part of a visionary approach that’s not only focused on cleaning up the environmental legacy of the past, but also creating opportunities for modernization, beneficial reuse and economic growth.”

To date, OREM has transferred more than 1,700 acres of land to the community to help attract and generate new economic development for the region, and it is turning over hundreds of more acres in the coming year. Twenty-five private businesses have located or announced plans to build on these parcels, bringing in \$1.35 billion in investments and generating an anticipated 1,400 jobs.

The focus of many of these recent industrial development efforts has been clean energy technology. Among those, Kairos Power began construction last month on its Hermes low-power demonstration reactor. The company’s \$100 million investment will bring 55 jobs to the site.

This site’s evolution has garnered this year’s Superfund National Priorities

List Award as part of EPA’s annual National Federal Facility Excellence in Site Reuse Awards. The awards highlight the accomplishments of federal agencies, states, tribes, local partners, communities and developers in restoring and reusing once-contaminated land at federal facilities.

“We are excited to announce that the East Tennessee Technology Park is one of this year’s recipients of the National Federal Facility Excellence in Site Reuse Awards, recognizing the dedication and hard work on the part of our partner agencies and so many other people and organizations that went into remediating and transforming this site into a multiuse technology park that will benefit the community and the region,” said Caroline Freeman, director of EPA’s Superfund and Emergency Management Division in Region 4.

EPA created the National Federal Facility Excellence in Site Reuse Awards to recognize exceptional work remediating a federal site for its beneficial use and creating positive impacts to the community.

With soil remediation complete, OREM and UCOR will conduct groundwater and surface water remediation, the final cleanup tasks to complete EM’s mission at ETTP.

*-Contributor: Ben Williams*

## Platform Overlooking Former K-25 Site Takes Shape



*The K-25 Viewing Platform is taking shape with construction crews from Geiger Brothers finishing the concrete slab and erecting the structural steel framework. Construction is expected to be complete next spring.*

When crews with OREM and cleanup contractor UCOR finished demolishing the mile-long K-25 Building more than a decade ago, they left behind a massive 44-acre footprint that's now part of the Manhattan Project National Historical Park.

With the addition of the K-25 Viewing Platform, now underway, visitors will be able to learn more about the former uranium enrichment facility that helped end World War II while viewing the area from a new perspective.

Construction crews are making significant progress on the project. When complete, the elevated viewing platform will provide a sweeping, panoramic view of the K-25 footprint through 10-foot-tall wraparound glass windows.

Plans also involve installing visual indicators at each corner of the footprint, delineating the height and dimensions of the structure that once stood there to help visitors understand its immensity.

"The K-25 Viewing Platform will provide engaging displays that help visitors see and comprehend the full

scale and magnitude of the former Manhattan Project and Cold War-era site," said Steve Cooke, OREM's project manager overseeing historic preservation. "This understanding will lead to a deeper appreciation of what previous generations accomplished here."

Through an interagency agreement signed in 2022, OREM provided funding for the project, while the U.S. Army Corps of Engineers (USACE) oversees construction. USACE awarded Geiger Brothers a \$9.9 million contract to build the platform last year.

UCOR and subcontractor Smee + Busby Architects designed the platform. They also provide engineering support during construction.

The facility is taking shape with Geiger Brothers finishing the concrete slab and erecting the structural steel framework. Construction is expected to be complete next spring, and the platform is set to open in summer 2025 after exhibits are installed inside.

Its construction is one of the final components of a multi-project agreement OREM signed in 2012 to

commemorate the history of the former Oak Ridge Gaseous Diffusion Plant, where the K-25 Building was located. It is just one element in OREM's historic preservation efforts.

OREM completed the other elements in previous years, including constructing the K-25 History Center and preserving the historic Alexander Inn.

Throughout the years, ORSSAB recommendations and public meetings helped shape OREM's historic preservation efforts.

Built in 1944, the K-25 Building was the largest structure in the world at the time. It carried an equally immense, important mission to help end a global war by producing uranium for the world's first nuclear weapon. Despite the vastness of the building and urgency of the work, the public would not learn of K-25's existence in Oak Ridge until the end of World War II.

Uranium enrichment operations ceased there in 1985, and the site was permanently shut down in 1987. Afterward, the U.S. Department of Energy committed to a massive environmental cleanup to transform the site into a multiuse industrial park for the community. That effort involved tearing down five massive enrichment facilities, including K-25 and 500 other structures that supported operations at the site.

OREM and UCOR completed demolition of the K-25 Building in 2013 and all other demolitions at the site in 2020. Additionally, they finished all soil remediation required on the K-25 footprint this summer.

The transformed site, now called the East Tennessee Technology Park, already has numerous private businesses onsite along with large conservation areas and a national park. The K-25 Building footprint is within the Manhattan Project National Historical Park, a unit of the National Park Service that also includes Los Alamos, N.M., and Hanford, Wa.

*-Contributor: Wayne McKinney*



## Robertson

*(Continued from page 8)*

capacity, and fieldwork is underway on a new facility that provides the capacity needed to complete future cleanup.

Robertson also traveled to ORNL, where she got a firsthand look at ongoing deactivation projects at former reactors and isotope labs. These projects are paving the way for demolitions that will transform the central campus and support future modernization at the site.

She also visited the Uranium-233 Disposition Project at ORNL, where employees have already surpassed a processing goal among EM's 2024 priorities.

The final day of her trip began with

a message to community and business leaders at the East Tennessee Economic Council.

Robertson discussed how progress in Oak Ridge would not be possible without partnerships with the community and business leaders in the room as well as the workforce, labor organizations, regulators and Congress.

In her remarks, the head of EM also discussed factors critical to future success.

"One of my top priorities is maintaining a world-class workforce here in Tennessee and across what is the world's largest environmental cleanup program," said Robertson. "We can't do anything without the right people and without the next generation of leaders. And with over 90% of cleanup work

executed by contractors, having the best of private industry on the job, at the right time and at a fair price, is critical."

That focus was evident in her final meeting of the trip with leadership from the University of Tennessee, Tennessee Tech University, Roane State Community College, Mississippi State Community College and the Oak Ridge school district.

Together, they discussed how their schools are launching and expanding programs that are helping train and educate the future federal and contractor workforce that will push the EM mission forward.

*-Contributor: Ben Williams*

## Chairs'

*(Continued from page 1)*

Tennessee Technology Park (ETTP), completion of single-shell tank retrievals in one tank farm and initiation of retrievals in another tank farm in Hanford, and the completion of Salt Stone Disposal Unit Nine ahead of schedule and under budget at the Savannah River Site.

He also cited the Uranium-233 (U-233) Disposition Project, a public-private partnership in Oak Ridge that allows nuclear materials to be removed from the waste stream and instead used to enable advanced cancer research and

treatment.

Sarah Schaefer, Isotek president and project manager overseeing the U-233 Disposition Project, was on hand to discuss the project with members. She gave members an overview of the history of the program and its potential benefits.

"The Department of Energy has an asset sitting there that was once considered useless," said Schaefer. "And here we are able to extract it while we are getting rid of the security risk and the safety risk associated with U-233 and giving it to the people who can get it out into the medical-trial community and then, hopefully, into other patients who aren't on a trial basis."

EM SSAB members received program updates from Rodrigo Rimando, director of Office of Technology Operations, Justin Marble, director of the National Transuranic Program, and Julia Shenk, director of the Office of Packaging and Transportation.

The multi-day event also included a full-day tour of the Oak Ridge site and an optional half-day workshop featuring emergency response training from DOE's Transportation Emergency Preparedness Program.

The next EM SSAB Chairs' Meeting will be held April 21, 2025, in Hanford, Wa.



*DOE's Jeff Avery provides updates to ORSSAB and other board attendees from sites around the country at the fall Chairs' Meeting.*



### Join Us for a Discussion on Efforts to Assure Waste Disposal Capacity

**6 p.m. Wednesday, March 12**  
**1 Science.gov Way and**  
**Virtually via Zoom**

OREM recently completed the first phase to construct a new waste disposal facility on the Oak Ridge Reservation known as EMDF. It will replace a nearly full facility and allow OREM to complete its cleanup mission.

Join us to hear the latest on project design, and how the new facility will allow future cleanup of ORNL and Y-12.

Questions? Want to attend virtually? Contact us at  
865-241-4584 or  
orssab@orem.doe.gov

## Top EM Official's Visit Highlights Partnerships, Progress



*EM Senior Advisor Candice Robertson addresses employees and answers questions at OREM's all-hands meeting.*

Major themes of growing partnerships and continued progress came into focus during a visit to Oak Ridge by EM Senior Advisor Candice Robertson — her first trip to the site since becoming head of the cleanup program in June.

Robertson's brimming agenda included visiting teams from DOE programs, contractors, stakeholders, higher education institutions and others supporting and benefiting from the OREM cleanup mission.

She kicked off the visit with remarks at the Nuclear Opportunities Workshop in Knoxville, where hundreds of attendees gathered to hear about industry developments, business opportunities and advancements in research and technologies.

Excitement and optimism were on display at the event with a growing number of companies in the nuclear industry expressing interest and locating on land OREM has cleaned and transferred to the community for economic development.

On the following day, Robertson made multiple stops at major cleanup projects across the Oak Ridge Reservation.

At Y-12, EM's top official observed construction underway on the Mercury Treatment Facility and the final stages of deactivation at Alpha-2.

She also viewed OREM's current and future disposal sites. The EM Waste Management Facility is nearing full

(See **Robertson** on page 7)



### ABBREVIATIONS

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund  
DOE – Department of Energy  
EM – Environmental Management  
EMWMF – Environmental Management Waste Management Facility  
ETTP – East Tennessee Technology Park  
OREM – Oak Ridge Environmental Management  
ORNL – Oak Ridge National Laboratory  
ORR – Oak Ridge Reservation  
ORSSAB – Oak Ridge Site Specific Advisory Board  
TDEC – Tennessee Department of Environment & Conservation  
UCOR – United Cleanup Oak Ridge  
Y-12 – Y-12 National Security Complex

### UPCOMING MEETINGS

Meetings are 6 p.m. at 1 Science.gov Way, Oak Ridge & virtually via Zoom. Email [orssab@orem.doe.gov](mailto:orssab@orem.doe.gov) to attend virtually.  
Board: Full Board Monthly Meeting, March 12, 2025  
EM & Stewardship Committee: March 26, 2025

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