Advocate

A publication of the Oak Ridge Site Specific Advisory Board – a federally appointed citizens panel providing independent recommendations and advice to DOE's Environmental Management Program

New Member Orientation Tour Gives Context to Cleanup

The Oak Ridge Site Specific Advisory Board (ORSSAB) recently held its first in-person orientation and tour of the Oak Ridge Reservation (ORR) since 2019.

Prior to 2019 both the orientation and tour had typically been held each year, however the event was converted to a virtual orientation after social distancing precautions began in early 2020.

"We're thrilled to be able to hold the new member orientation tour again," said Melyssa Noe, ORSSAB's deputy designated federal officer (DDFO). "Many of our members have little or no prior knowledge of EM's work on the Oak Ridge Reservation when they first join the board, and this gives them an opportunity to see that work first-hand and see how it relates to the site as a whole."

More than a dozen attendees joined board staff and DOE representatives in April for the event, which included an informational overview at the DOE Information Center followed by a guided tour of key reservation areas.

DOE's Roger Petrie, Federal Facility Agreement (FFA) project manager and ORSSAB's alternate DDFO, first gave members an overview of OREM's history, ongoing projects, and future plans before the group headed out to the Oak Ridge National Laboratory (ORNL), where they drove by cleanup projects in the central campus area. Sights included Building 3026 hot cells, Building 3005 reactor, the footprint of the Building 3010 reactor, Building 3042 research reactor, and Buildings 3019 and 2026, where uranium-233 is stored and processed.

(Above) Roger Petrie, ORSSAB's Alternate DDFO, gives ORSSAB members background information about the Experimental Gas-Cooled Reactor, which OREM is currently preparing for demolition at ORNL.

(Left) ORSSAB members visited the Experimental Gas-Cooled Reactor in March, the first time an ORSSAB tour included the facility.

At the Experimental Gas-Cooled Reactor (EGCR), which is currently in the decontamination and decommission (D&D) process, the group got a better idea of the scale of the project when they stepped off the bus and Petrie walked them around the site.

They then returned to the driving part of the tour, passing Isotope Row and the Liquid and Gaseous Waste Operations (LGWO) facility, before again stopping to disembark, this time at ORNL's Graphite Reactor. The Graphite Reactor,

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Reservation Update

The Oak Ridge Office of Environmental Management's Distributed Control System upgrade project included the design, fabrication and installation of a fully new system complete with a new fiber optic cabling system.

Crews Upgrade Waste Treatment Infrastructure

OREM and its contractor UCOR are performing extensive upgrades designed to extend the life of the Liquid and Gaseous Waste Operations (LGWO) facilities.

LGWO treats wastewater from OREM's cleanup operations and Oak Ridge National Laboratory's (ORNL) research and development laboratories. Made up of 60 facilities and 27 miles of piping, this infrastructure is critical for ongoing EM and Office of Science missions.

Most recently, UCOR finished replacing the Distributed Control System (DCS), which controls LGWO's instrumentation. The upgrade project was necessary for the waste treatment system to remain operational.

With the old system running on obsolete components, the upgrade project included the design, fabrication and installation of a fully new system complete with a new fiber optic cabling system between the LGWO facilities, network cabinets, control cabinets, new software and a new backup system.

The DCS controls and monitors 2,216 process points across 18 facilities; those points span three waste treatment systems that comprise LGWO: the Liquid Low Level Waste, Process Waste Treatment and Gaseous Waste systems.

UCOR planned and executed troubleshooting before the new DCS installation began to ensure safe compliance and system testing for infrastructure compatibility. That extensive effort was completed ahead of schedule and under budget.

In addition to the system upgrades, UCOR is completing other actions to maintain safe and reliable operability of the LGWO systems.

Another project involved installing a new pretreatment facility that treats low-level liquid waste and allows it to be diverted from storage tanks directly to the Process Waste Treatment System. That change alleviates previous storage volume issues. Crews also replaced a diesel generator that powers critical pumping stations and valve boxes when power is interrupted.

OREM and UCOR are also in the midst of an $18 million project to replace more than a mile of above-ground piping and valves, making the system more efficient and reliable and helping avoid the possibility of disrupting ongoing ORNL operations. That work is slated to continue through 2024.

First Waste Shipment to WIPP Under New Contract Complete

The Transuranic Waste Processing Center (TWPC) recently shipped its first load of transuranic (TRU) waste for disposal since coming under OREM cleanup contractor UCOR.

TWPC work was recently moved under the Oak Ridge Reservation contract that continues for the next decade, ensuring appropriate resources and expertise are available to successfully address the remaining challenging TRU waste at Oak Ridge.

Employees at the facility are addressing a stockpile of legacy defense-related research waste. The most recent shipment included 35 drums and weighed nearly 80,000 pounds. After a two-day trip, the load arrived safely at EM's Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico, for permanent disposal.

To complete the shipment, personnel prepared and loaded the waste containers over two days. A 10-person TWPC team worked closely with

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WIPP's Central Characterization Program mobile load team.

Once the shipment was ready for departure, representatives from Tennessee's highway patrol and emergency management agency inspected the trailer and approved its release. With that approval, WIPP authorized the shipment.

While TWPC employees have processed, repackaged and certified approximately 98 percent of Oak Ridge's inventory of legacy TRU waste, the site is steadily working to ship its remaining inventory of processed TRU waste to WIPP.

To date, Oak Ridge has shipped approximately 85 percent of its contact-handled TRU waste and 70 percent of its remote-handled TRU waste to WIPP.

Unlike contact-handled waste, remote-handled waste has higher radioactivity levels and must be processed using special equipment. TRU waste contains elements heavier than uranium on the periodic table and consists of clothing, tools, rags, residues, debris, soil and other items contaminated with small amounts of plutonium and other radioactive elements.

With its first TRU waste shipment successfully completed, UCOR is set to continue regular shipments to WIPP until the site's entire inventory is removed.

EM constructed the TWPC in 2003 to address the legacy stockpile of defense-related research waste.

K-25 Viewing Platform Building Contract Awarded

The U.S. Army Corps of Engineers (USACE) announced in March it had awarded Geiger Brothers a $9.9 million contract to build the K-25 Viewing Platform at the East Tennessee Technology Park in Oak Ridge.

Geiger Brothers is a full-service construction and engineering firm headquartered in Jackson, Ohio with offices in Columbus, Ohio and Knoxville, Tennessee.

United Cleanup Oak Ridge and its subcontractor Smee + Busby Architects designed the K-25 Viewing Platform and will provide engineering support to USACE and its contractor during construction.

Artist rendering of the new Viewing Platform, which will be located next to the recently constructed K-25 History Center overlooking the footprint of the K-25 Building. (Courtesy Smee + Busby Architects)

Through an interagency agreement signed last year, the U.S. Department of Energy's (DOE) Oak Ridge Office of Environmental Management (OREM) provided the funds for this project, while the USACE will oversee its construction.

The K-25 Viewing Platform will be adjacent to the recently opened K-25 History Center and provide visitors a complete view of the building's massive 44-acre footprint.

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. OREM completed the other elements in previous years, which included construction of the K-25 History Center and a grant to preserve the historic Alexander Inn.

Construction on the new facility is scheduled to begin in May 2023, and it is slated for completion in late 2024.

While the K-25 History Center focuses on the men and women who built and operated the Oak Ridge Diffusion Plant during the Manhattan Project and Cold War, this facility will help visitors understand the scope and magnitude of the former K-25 Building.

Originally constructed in 1944, the K-25 Building was the largest structure in the world and carried an equally immense and important mission to help end a global war by producing uranium for the world's first nuclear weapon. Yet despite its size and urgent work, the public would not learn of its existence in Oak Ridge until the end of World War II.

Uranium enrichment operations ceased in 1985, and the site was permanently shut down in 1987. Afterward, DOE committed to and began a massive environmental cleanup effort to transform the site into a multi-use industrial park for the community. That effort involved tearing down five massive enrichment facilities, including the K-25 Building, and 500 other structures that supported operations at the site. OREM and its contractor UCOR completed demolition of the K-25 Building in 2013 and finished all demolition at the site in 2020.

Board Tours Waste Disposal Sites

(Above) From right, ORSSAB FY 2023 Chair Leon Shields looks at an overview of the waste disposal sites near Y-12 with members John Tapp, Kris Bartholomew, Bonnie Shoemaker, and Mike Mark.

(Left) Board members toured EMWMF, which stores most waste from the cleanup program currently. It is nearly full and will be replaced by a new facility in coming years.

Tour

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which was built in 1943 to test the feasibility of producing plutonium for use in atomic weapons on a scale larger then laboratory experiments, was the pilot for the larger Hanford B Reactor in Washington. The facility is now a part of the Manhattan Project National Historic Park (MPNHP) and features educational displays illustrating the facility's past use.

For the last portion of the tour, the group left ORNL and rode over to the East Tennessee Technology Park (ETTP). Petrie identified the areas containing key groundwater cleanup projects and discussed the upcoming Record of Decision (ROD). The group saw areas where land transfers were already completed or planned and learned about new companies redeveloping the site.

New member Atilio Anzellotti said the tour gave him new insights into the history of the site.

"It's very educational," he said. "Living here in Oak Ridge, you hear about those sites, but it's a mystery, it's a secret like that, but now you can point there and actually see all the story and the background."

For new member Mary Butler, the tour gave her a new appreciation of the sheer scale and challenge of EM's work in Oak Ridge.

"It's just mind-boggling how much work has been done already and how much needs to be done," she said.

EM SSAB Chairs Get New Perspective on Budget Process

ORSSAB board officers joined other Environmental Management Site-Specific Advisory Board (EM SSAB) leadership, and U.S. Department of Energy (DOE) staff at the annual EM SSAB Spring Chairs' Meeting March 21-22 in Washington, DC, and virtually.

Each spring and fall, officers from SSABs across the country join to meet with DOE officials to discuss the latest happenings around the EM complex. This year's Spring Chairs' Meeting, which was held in DOE's Forrestal Building in Washington, DC, featured visits and updates from several key DOE leaders, including William "Ike" White, senior advisor to EM, Jeff Avery, principal deputy assistant secretary, and Steve Trischman, director of Budget and Planning, with White and Avery offering updates on key accomplishments at EM sites throughout the complex, and Trischman offering updates on EM's overall budget.

In addition to providing budget updates, Trischman added a more interactive component to the agenda. All the meeting's in-person attendees were assigned to smaller groups to participate in a budget simulation exercise. For this activity, each group represented the EM complex, and each person within the group was assigned as a field site manager or as an EM leader in the budget process. Each person representing a field site manager was tasked with deciding what budget request to submit for their site, including how much to request for specific budget line-items. Each person representing the budget director and EM leadership was tasked with deciding which field site budget requests to approve or deny in order to stay within the allotted EM complex budget.

Throughout the process, "site managers" and "EM leadership" worked together to determine where funds could be cut or added.

"The goal of this exercise was to give you an idea of the decision-making processes involved in the budget process," Trischman said to members.

From right, ORSSAB Vice Chair Amy Jones and Chair Leon Shields attended the Spring 2023 EM SSAB Chairs' Meeting at the DOE Forrestal Building in Washington, DC, on March 21-22.

Also during the meeting, officers from each SSAB presented updates on their board's recent activities and current goals.

During the latter portion of the first day, Nicole Nelson-Jean, associate principal deputy assistant secretary for the Office of Field Operations gave members an overview of DOE-EM's Minority Serving Institutions Partnership Program (MSIPP). Under this program, DOE-EM offers competitive research awards (CRAs), internships, a postdoctoral research program, grants, a graduate fellowship program (GFP), the STARS Fellows Program for undergraduates, and a ten-week hands-on summer program at the Savannah River Environmental Sciences Fields Station.

Next, Kristen Ellis, director of Regulatory, Intergovernmental, and Stakeholder Engagement, discussed community capacity building before Erik Olds, director of EM Communications, joined her to discuss SSAB member onboarding.

Day one drew to a close with board members discussing a draft recommendation regarding review and reporting on the implementation of EM SSAB Recommendations. Members were asked to bring the recommendation back to their respective site boards and vote "Yes" or "No" in support of the recommendation, which recommends DOE provide clear and publicly accessible information regarding implementation of EM SSAB Chairs recommendations for the last five years. In addition to a clear statement about implementation status (e.g., "Implementation of the recommendation is complete

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Chairs' Meeting

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(or "ongoing", "suspended", or "discontinued"), the information should include an explanation of any deviations from the DOE response to the recommendation. Additionally, DOE should "report to the EM SSAB at least annually a summary of the status of all EM SSAB Chairs recommendation items and any recommendation action item completed during the reporting period."

During the second day of the meeting, members learned more about EM's International Program, EM's National Lab Network, and EM's Technology Development.

The next EM Chairs' Meeting will be held October 3-5 in Oak Ridge.

ORSSAB Vice Chair Amy Jones and Chair Leon Shields attended the Spring 2023 EM SSAB Chairs' Meeting at DOE's Forrestal Building in Washington, DC, in March.

MTF

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through the pipeline to the treatment plant. The treated water will then flow back into the creek on the east end of Y-12.

MTF is designed to treat up to 3,000 gallons of water per minute and includes a 2-million-gallon storage tank to collect stormwater.

Working on two fronts, teams safely installed the initial equipment to the project's treatment plant site and placed micropiles to help lay the foundation for the headworks facility site. The micropiles are small-diameter pilings consisting of steel-threaded bars grouted into pre-drilled holes that provide foundation support for the headworks facility.

"We installed 79 micropiles, some going nearly 70 feet down, to ensure we had 10 to 15 feet of competent rock. Then we shored up that steel with concrete, grout and compression plates," said Outfall 200 Mercury Treatment Facility Design Engineer Brian Shaw. "We've proof-tested these designs to ensure they are up to the task as we prepare for the headworks building structure."

Crews also successfully hoisted and placed two massive incline plate clarifiers, each weighing 16,000 pounds. This marked the project's first mechanical installation for the treatment facility. The clarifiers remove particles during the treatment process and make the water clearer.

"The clarifier is a key component of the treatment plant system, and that makes the setting of these clarifiers so significant," says Outfall 200 Mercury Treatment Facility Project Manager Matt Putinas. "Our entire team knows how important this project is for our cleanup work at Y-12."

ANW Construction Manager Mike Morneau says the installation of that equipment is notable because it allows crews to move forward on structural steel, underground utilities and foundation pours in the months ahead.

"At our project meetings and in our interactions in the field, we're seeing improved coordination, project sequencing, and execution that is essential to our shared cleanup success," said Kent Fortenberry, UCOR critical projects director.

SITE SPECIFIC ADVISORY BOARD
OAK RIDGE

Join Us for a Briefing on ETTP Main Plant Groundwater Remedies

6 p.m. Wednesday, May 10
1 Science.gov Way and
Virtually via Zoom

With demolition complete at the East Tennessee Technology Park (ETTP), DOE is focusing cleanupefforts on any areas that require below-ground remediation at the site. Join us for an update on progress made in groundwater cleanup as well as areas where additional work is planned.

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

DOE Welcomes Eight New Members to ORSSAB

DOE recently welcomed eight new members to its Oak Ridge Office of Environmental Management (OREM) citizen advisory board.

"ORSSAB is a core element of our outreach and engagement with the community," said OREM Manager Jay Mullis. "We're very grateful to have area residents who are willing to invest their time and energy to learn more about our work, share their perspectives, and provide recommendations. Their insight and feedback greatly benefit our cleanup program."

ORSSAB is a federally chartered citizens' panel that provides independent recommendations to OREM, which is responsible for the cleanup of the Oak Ridge Reservation.

All board members are volunteers from the region and have a variety of backgrounds.

Joining ORSSAB are Atilio Anzellotti, Kris Bartholomew, Mary Butler, Harold Conner, Jr., Paul Dill, Rosario Gonzalez, Mike Mark and Christina Michaels.

Atilio Anzellotti

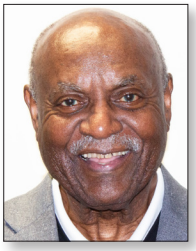
Anzellotti is a senior scientist with PETNET Solutions who holds bachelor's, master's and doctorate degrees in chemistry. He is a member of the American Chemical Society and the Oak Ridge Environmental Quality Board. He is interested in environmental and public health issues and lives in Oak Ridge.

Kris Bartholomew

Bartholomew is the owner of Turn Key Plumbing and Construction, and his licensures include general contractor, plumbing and mechanical, and subsurface sewage installation. He is interested in environmental and public health issues and lives in Lenoir City.

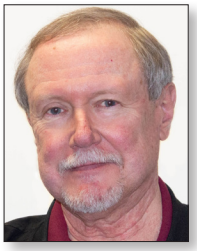
Mary Butler

Butler retired in 2017 as a staff pharmacist with Aurora Pharmacy, Inc., and she holds a bachelor's degree in pharmacy from the University of Wisconsin. She is interested in civic and educational issues and lives in Rockwood.



Harold Conner, Jr.

Conner is a senior engineering advisor with Strata-G, and he served as K-25 plant manager from 1968 to 1996. He holds bachelor's and master's degrees in chemical engineering and a doctorate in industrial and systems engineering. He is a fellow of the American Institute of Chemical Engineers and the American Society for Engineering Management and a lifetime member of the National Society of Black Engineers and the National Organization of Black Chemists and Chemical Engineers. He is interested in educational and minority issues and lives in Knoxville.



Paul Dill

Dill retired in 2018 as a project manager with Project Enhancement Corporation, supporting DOE's National Nuclear Security Administration in the Office of Emergency Operations. He holds a bachelor's degree in industrial engineering/technology management and a master's degree in psychology, as well as a master project manager certification. He is interested in environmental and public health issues and lives in Oliver Springs.

Rosario Gonzalez

Gonzalez is the cafeteria manager at St. Mary's Catholic Church in Oak Ridge, where she has been employed since 1986. She previously worked as a secretary in Toureon, Mexico, where sclahe received her Secretarial Academy Certification. She completed her secondary education in Mexico and received her GED from Pellissippi State Community College in Knoxville. She is interested in environmental and minority issues and lives in Oak Ridge.

Mike Mark

Mark is a former first responder and hazmat professional and holds many related certifications. He is interested in environmental and economic development issues and lives in Harriman.

Christine Michaels

Michaels is the president of the Oak Ridge Chamber of Commerce. She holds a bachelor's degree in public relations, and she has an economic gardening certification for entrepreneurial economic development and an Institute for Organization Management certification from the U.S. Chamber of Commerce. She is interested in economic development and business issues, and she lives in Oak Ridge.

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Crews Make Headway on Mercury Treatment Facility

An OREM team recently hit two milestones in a construction project that's pivotal to future cleanup at Y-12.

The Mercury Treatment Facility (MTF), now under construction, is the linchpin for OREM's cleanup strategy at Y-12. It will prevent potential releases of mercury into a nearby creek, enabling large scale demolition to begin in mercury-contaminated areas at Y-12.

"These milestones are notable steps forward, and they pave the way for continued progress on this important project," said Brian Henry, Y-12 portfolio federal project director.

The vital piece of infrastructure will be comprised of two major components at two locations — a headworks facility and a treatment plant — connected by a pipeline nearly a mile long. OREM contractor APTIM-Northwind (ANW) is leading the project, with support from cleanup contractor UCOR.

Oak Ridge teams safely hoisted four parts that comprised two massive incline plate clarifiers at the Mercury Treatment Facility treatment plant.

The headworks facility will capture creek flow on the west end of Y-12, store excess stormwater collected during large rainfalls, remove grit and pump water

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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 to attend virtually.

Board: ETTP Main Plant Groundwater Remedies, May 10
EM & Stewardship Committee: May 24

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