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

Board's Tour Shows Progress at New Waste Facility EMDF

Left: Early site preparation for EMDF is expected to be complete this spring. The second construction phase will include a groundwater field demonstration study located on a portion of the final footprint of the site. Oak Ridge will gather data for two wet seasons to inform final design choices for the facility.

Below: ORSSAB tours EM-WMF, the current waste storage facility used for low-level CERCLA cleanup waste.

ORSSAB members in February toured waste disposal facilities on the Oak Ridge Reservation that are key components of the local Department of Energy Oak Ridge Office of Environmental Management's (DOE OREM) cleanup program. The tour coincided with the month's presentation topic and attendees were keenly interested in progress updates provided regarding the construction of a new waste disposal facility, the Environmental Management Disposal Facility (EMDF). It will replace the current facility, the Environmental Management Waste Management Facility (EMWMF), which has operated for more than 20 years and is expected to reach capacity this decade.

Early site preparation for EMDF began in summer 2023 and is expected to be finished later this spring. The work includes shifting the course of Bear Creek Road and the non-public Haul Road, which is used for internal transportation, around the site.

Construction crews have also begun work on phase two at the site. They have cleared a small section of land, which will eventually be part of the final disposal facility, to use as a groundwater field demonstration study. For two wet seasons, OREM will collect data on how groundwater levels adjust to EMDF

*(See **Tour** on page 7)*

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Advocate

Reservation Update

Crews Complete Landfill Expansion Ahead of Schedule

OREM lead cleanup contractor UCOR has finished constructing the final permitted cell in Landfill V ahead of schedule. The 5.7-acre expansion provides almost a half million cubic yards of additional disposal space to support ongoing cleanup at the Y-12 National Security Complex and Oak Ridge National Laboratory. That equates to approximately 50,000 dump truck loads of added capacity. UCOR subcontracted the expansion effort to CTI and Associates, a small business focused on environmental consulting and engineering.

The buildout allows OREM to use the landfill for another 15 to 20 years, providing disposal space to nearby cleanup missions. Enlarging Landfill V's disposal capacity also extends the life of the Environmental Management Waste Management Facility (EMWMF), an important on-site disposal facility for low-level waste that's currently at 85% capacity.

Landfill V is part of the Oak Ridge Reservation Landfills, which accept sanitary, industrial and construction waste generated from cleanup across the site. While OREM disposes of sanitary, industrial and construction waste in these facilities, it sends low-level contaminated waste only to EMWMF as permitted by law. These complimentary efforts ensure space at EMWMF is used efficiently.

UCOR and its independent quality assurance firm, Thompson Engineering, are completing a final report documenting all construction and testing activities for the Landfill V expansion. This report will be submitted to the Tennessee Department of Environment and Conservation (TDEC) for approval before any waste is placed in the newly expanded area of the landfill.

A view of construction on the Mercury Treatment Facility's treatment plant. This essential piece of infrastructure will allow OREM to begin large-scale cleanup at Y-12.

UCOR Tasked to Finish MTF Construction at Y-12

OREM has tasked UCOR with completing construction of the Mercury Treatment Facility at the Y-12 National Security Complex.

DOE awarded APTIM-North Wind Construction (ANW) a contract in December 2018 to construct the facility. With that contract expiring, OREM transitioned the remaining construction to UCOR, who is also responsible for commissioning and operating the facility.

The Mercury Treatment Facility is an essential piece of infrastructure that allows OREM to fulfill its regulatory commitments to reduce mercury levels in the East Fork Poplar Creek and begin large-scale cleanup at Y-12. When operational, the facility will limit and control potential mercury releases as crews demolish massive Manhattan Project and Cold War-era buildings and address the soil beneath them.

The project encompasses two components at two locations: a headworks facility and a treatment plant, both connected by a nearly mile-long transfer pipeline.

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 via the pipeline to the treatment plant on the east side of Y-12. That treated water will then flow into the East Fork Poplar Creek.

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

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OREM and Isotek recently continued to the second phase of Isotek's current processing campaign. This portion of the inventory measures 15 to 20 times higher in radiological dose than the previous material employees have processed to date.

Isotek Continues to Next Phase of U-233 Processing

OREM and contractor Isotek are moving forward on the highest priority cleanup project at Oak Ridge National Laboratory (ORNL): eliminating the remaining inventory of uranium-233 stored onsite.

Isotek recently began the second phase of its current processing campaign. This portion of the uranium-233 inventory measures 15-20 times higher in radiological dose than the previous material employees have processed to date.

Isotek has processed approximately 15 percent of the inventory within the current campaign. The efforts underway kick off the second phase, and a third phase remains to complete the current campaign, which is slated for completion in 2026.

Previous processing activities focused on an inventory of oxides manufactured in Oak Ridge, but the material currently undergoing processing involves oxides originating from the Savannah River Site decades ago. That material contains higher concentrations of uranium-232, which results in higher doses.

The nation's inventory of uranium-233 has been stored at ORNL for decades. It was originally created in the 1950s and 1960s for potential use in reactors, but it proved to be an unviable fuel source.

OREM and Isotek are tasked with eliminating the material because it presents risks and is costly to keep safe and secure. The Uranium-233 Disposition Project is removing this inventory of Cold War-era nuclear material stored in the world's oldest operating nuclear facility.

Half of the original uranium-233 inventory stored at ORNL was directly disposed of in 2017, while the remaining material required processing and downblending to convert it into a form that can be safely transported and disposed of. Isotek started processing lower dose material in gloveboxes in 2019, and then began processing higher dose material in hot cells in 2022.

As part of the processing operations, employees remove transuranic material and lessen enrichment levels to avoid the potential for criticality, or an accident resulting from an inadvertent, self-sustaining nuclear chain reaction. They are also extracting thorium-229, a rare medical isotope, to advance next generation cancer treatment research.

OREM Transfers Largest Land Parcel Yet at ETTP

OREM recently transferred a 365-acre tract where a powerhouse complex was once located to the Community Reuse Organization of East Tennessee (CROET).

CROET is a local nonprofit that receives building and property transfers from federal ownership at ETTP, and then reuses those assets to attract new industry to the site that will benefit the community economically.

This transfer is part of OREM's ongoing efforts to transform ETTP, the former Oak Ridge Gaseous Diffusion Plant, into a multi-use industrial center, national park and conservation area.

Simultaneous with cleanup, OREM's reindustrialization efforts have enabled 25 companies to locate at the ETTP site. Transfer of this most recent parcel brings the total amount of land transferred for economic development to more than 1,600 acres.

OREM and cleanup contractor UCOR finished tearing down all former enrichment buildings and support facilities at the ETTP site in 2020. In total, OREM cleared away more than 500 structures with a combined footprint the size of 225 football fields.

All soil remediation projects at ETTP will be completed this year, which is an EM priority for 2024.

The Powerhouse complex was constructed in the 1940s to supply coal-fired electrical power for gaseous diffusion operations. The buildings were shut down and disassembled in the 1960s; demolition finished in the 1990s.

One section was used as an oil tank farm for fuel oil used in the boilers. Another portion was used as a scrap metal yard. OREM removed 50,000 tons of scrap metal from the site in 2007, and later completed soil cleanup actions to enable the area's transfer.

Board Welcomes Five New Members

ORSSAB's March 2024 Full Board meeting featured some new faces. From left, Kristof Czartoryski, the board's TDEC liaison is joined by Samantha Urquhart-Foster, the board's EPA liaison, who recently relocated from Atlanta to Oak Ridge; new member Raiyan (Ray) Bhuiyan joins existing members Paul Dill, Tom Tuck, Christine Michaels and others.

ORSSAB's March monthly meeting featured several new faces, as the board recently welcomed five new members.

Board members, who serve two-year terms, are chosen through a DOE application process to reflect a diversity of occupations, interests, gender, and race of persons living near the Oak Ridge Reservation. Members can serve a total of three terms.

2024 New Members

Riayan Bhuiyan

Raiyan Bhuiyan earned a bachelor of science degree in Nuclear Energy Engineering Technology from Thomas Edison State University, where he was a recipient of the Nuclear Regulatory Commission Scholarship. He was also a graduate of the Naval Power School during his time serving in the U.S. Navy and has received certifications in CPR and as an IBM Data Science Professional. Raiyan is interested in environmental and workforce issues. He lives in Oak Ridge.

Charles Moore

Charles Moore is a source house technician with Mirion Technologies and is pursuing a degree in chemistry from Roane State Community College. He is interested in economic development and environmental issues. He lives in Knoxville.

Tonya Shannon

Tonya Shannon works in accounts payable in the finance department for Morgan County and serves as a funeral director through Service Corp. International. She is also a trustee assistant with the Morgan County Trustee Office. She received an A.S. degree in human services from Jefferson Community College. She is a member of the Tennessee Funeral Directors Association and has insurance licensure from Kaplan Financial Education. Tonya lives in Wartburg and is interested in public health and civic issues.

Candace Atkinson is the lead 911 dispatcher for the Anderson County Sheriff's Office. She earned a bachelor's degree in Occupational Safety and Health from Eastern Kentucky University and holds a variety of health-related certifications related to her career in law enforcement and emergency services, including CPR and safety communications. She also holds various certifications from the Federal Emergency Management Agency (FEMA). She is a member of the Omega Nu Lambda National Honor Society and the Southern States Police Benevolent Association. Candace is interested in environmental, civic and public health issues. She lives in Oak Ridge.

Rachel Stewart is a recent University of Tennessee graduate with a bachelor's in College Scholars with an emphasis on Environmental Justice and Radioactive Waste Management. She has interned with the Nuclear Threat Initiative in Washington, DC, Oak Ridge National Laboratory, and Pacific Northwest National Laboratory. Rachel lives in Knoxville and is interested in public health and minority issues.

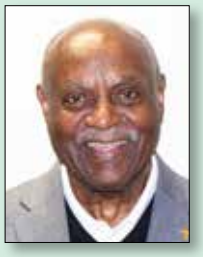
Board Elects New Officers for 2024

Amy Jones
Chair

Kris Bartholomew
Vice Chair

Harriett McCurdy
Secretary

Mary Butler
EMS Chair



Harold Conner, Jr.
EMS Vice Chair

ORSSAB members elected new leadership recently to serve as board officers for 2024. Officers are elected for one-year terms and the three board officers plus the two co-chairs of the EM & Stewardship Committee join together monthly as the Executive Committee to discuss board business and approve upcoming meeting materials.

Amy Jones, who served previously as vice chair, took the helm as board chair.

Jones, first appointed to the board in 2019, is the agency manager for Steve Pyatt Insurance and a licensed agent for Madison Insurance Group, serving as lead agent for their Georgia office and as senior benefits coordinator for their Medicare division. She is also a real estate agent at Stephenson Realty & Auction.

Now serving as vice chair is **Kris Bartholomew**, who joined the board in 2022. Bartholomew is the owner of Turn Key Plumbing and Construction, a small family-owned business.

Taking the position of secretary is **Harriett McCurdy**, who joined the board in 2019 and previously served as both chair and vice chair for the board's EM & Stewardship Committee. McCurdy retired in 2014 after more than 40 years as a teacher for middle- and high-school students both in the United States and abroad, with a focus on the sciences.

For the EM& Stewardship Committee, members elected **Mary Butler** to serve as the committee's chair. Butler, a retired pharmacist, joined the board in 2022.

Members also elected **Harold Conner, Jr.**, to serve as the committee's vice chair. Conner, who joined the board in 2023, is a senior engineering advisor with Strata-G. He worked a number of roles at K-25 from 1968-1996, including as plant manager.

Leadership

(Continued from page 8)

other Site Specific Advisory Boards around the complex.

"The opportunity to add Erik to the OREM leadership team and promote Laura to Chief Engineer allows us to increase our focus on strengthening our organization as we continue to set the standard for cleanup across the EM complex," Mullis said.

Among his reasons for relocating to Oak Ridge, Olds noted OREM's "amazing relationships with regulators, other stakeholders and the community" as a unique part of the success of the cleanup mission.

It was impressive enough that he intends to bring his entire family to the area. Olds will be joined by his wife and three adult children along with their respective families in the future.

He was most recently director of communications for EM, but Olds has worked for DOE for more than 31 years and has served in a variety of assignments, including EM acting chief of staff, deputy project integration manager for the multi-billion dollar Direct-Feed Low-Activity Waste system, and chief of staff for both the Richland Operations Office and Office of River Protection. Prior to his leadership roles at Hanford and EM headquarters, Olds served in public affairs at the Yucca Mountain Project in Nevada for the Office of Civilian Radioactive Waste Management.

He holds a bachelor's degree in public relations and a master's degree in communications studies from the University of Nevada, Las Vegas.

OREM Sets Big Goals for 2024's Added Focus at Y-12

Demolition will begin on the Alpha-2 facility in 2024. It marks the first teardown of a former uranium enrichment facility at Y-12.

OREM is moving ahead with an ambitious slate of projects this year that will alter the site's skyline, remove inventories of nuclear waste and complete a major phase of cleanup. While last year's projects changed the landscape at ORNL, crews are set to make major changes at Y-12 in 2024.

The most significant project on the horizon is the demolition of the 325,000-sqaure-foot Alpha-2 building. This will mark OREM's first teardown of a former Manhattan Project-era enrichment facility at Y-12, clearing away a high-risk excess contaminated structure. But two other projects will provide critical infrastructure for future cleanup as well.

Crews are set to finish early site preparation activities and begin a groundwater field demonstration study for a new disposal facility, EMDF, which is located outside Y-12's western entrance. Another focus is progressing construction on the Mercury Treatment Facility at Y-12. When operational, this plant will allow OREM to begin addressing Y-12's large, mercury-contaminated facilities and sources of mercury in the soil, thereby protecting against releases into a nearby creek.

However, OREM remains committed to ongoing projects across the Oak Ridge Reservation, thereby eliminating risks and opening land for reuse to support research and national security missions. Teams with cleanup contractor UCOR will also advance many other deactivation projects at ORNL and Y-12 that set the stage for other near-term demolition projects. Those include Beta-1 at Y-12; and the Oak Ridge Research Reactor, Isotope Row facilities, Building 3026 Hot Cell, and Graphite Reactor support facilities at ORNL. Work is also moving forward on OREM's highest priority at ORNL — eliminating the remaining inventory of uranium-233 stored onsite. Oak Ridge contractor Isotek is beginning the next phase of its processing campaign that involves material 15 to 20 times higher in radiological dose than the previous material it processed to date.

OREM is also reaching its final chapter at ETTP. This year, workers are scheduled to finish all soil remediation projects at the site, and OREM also expects to finalize decisions to initiate the last phase of groundwater cleanup. In addition to cleanup at ETTP, OREM plans to transfer additional land for economic development this year, moving it closer to its ultimate vision of transforming the site into a multi-use industrial center, national park and conservation area for the community.

Workers in the Oak Ridge Research Reactor facility remove the top portion of the reactor vessel for disposal. They will remove the next portion of the reactor vessel this year.

Tour

(Continued from page 1)

construction. The concluding phase of the project will include completing the final design and constructing the facility's first two disposal cells. The final design calls for four disposal cells constructed in phases to hold a total of 2.2 million cubic yards.

Because of the long history at the current disposal facility, designers for EMDF are able to incorporate many lessons learned (and new technologies). For example, experience at other landfills has shown that water management is a critical part of facility operations, particularly with extreme rain events such as in February of 2019 and 2020 where East Tennessee saw widespread flooding. Workers at EMWMF have become experts at handling these events and their models are shared with other DOE sites and international partners. Water at the current landfill is captured, tested and, if needed, trucked via the Haul Road to ORNL for treatment. The new site will have its own water treatment plant and containment facilities, which will avoid hundreds of thousands of miles driven for water treatment over the lifecycle of the current landfill. EMDF's disposal cells will be also be aligned with the lay of the land to ease water management and minimize contact water by limiting the working face of each cell. Collection ponds will collect clean water from rain and other sources to enable operators to control dispersal and avoid large rushes of water down Bear Creek.

Water protection is just one part of OREM's efforts to minimize site effects on the local ecosystem. Materials like cut trees from site preparation are sold for lumber, branches are turned into woodchips used elsewhere on the reservation, and clean soils are used as fill on other projects. This reduce, reuse, recycle mindset also applies to waste disposal decisions on each cleanup project. As each facility is demolished or waste materials are removed from areas, all materials are carefully sampled and characterized. Any waste that cannot be repurposed is then considered for other landfills on site that do not take CERCLA waste. This group of landfills are heavily used for other sanitary, industrial and construction and demolition waste generated during cleanup.

OREM recently expanded one such site, known as Landfill V, in a project completed earlier this year. It receives sanitary waste from the entire Oak Ridge Reservation, from cafeteria waste at Oak Ridge National Laboratory, to fill soil from ETTP. Carefully using these landfills ensures that the current CERCLA landfill is only used when absolutely necessary for low-level contaminated waste as intended. This prolongs its lifespan and ensures overlap with the opening of EMDF for peak efficiency during site closure and transfer efforts.

Any other waste that does not meet disposal acceptance criteria for Oak Ridge is packaged and shipped offsite.

One of the major tasks involved with site preparation and construction of EMDF involves moving Bear Creek Road and Haul Road to accommodate the site design.

Join Us for a Briefing on ETTP Main Plant Groundwater Remedies

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

With demolition complete at the East Tennessee Technology Park, DOE is focusing cleanup efforts 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.

For questions or to attend virtually contact 865-241-4584 or orssab@orem.doe.gov

Advocate
Oak Ridge Site Specific Advisory Board
April 2024

OREM Leadership Changes Will Aid Cleanup Efforts

Laura Wilkerson

DOE recently announced the selection of Laura Wilkerson as chief engineer for OREM and the reassignment of Erik Olds from communications director for the DOE Office of Environmental Management (EM) to OREM deputy manager.

As a recognized leader and technical expert, Wilkerson will focus on the most complex, crosscutting engineering challenges facing the Oak Ridge environmental cleanup program.

She has more than 30 years of experience directing and managing technical programs and projects across major DOE programs, including a long history with the environmental cleanup program. Wilkerson has served in a variety of positions for OREM, including acting manager, deputy manager, division director for planning and execution, and portfolio federal project director for cleanup and waste management activities at Oak Ridge National Laboratory and the Y-12 National Security Complex.

"We are excited to announce these critical OREM leadership positions," said OREM Manager Jay Mullis. "As we continue to ramp up our environmental cleanup activities at ORNL and Y-12, Laura will use her extensive experience and in-depth knowledge about both of those sites to help us find solutions to some of our biggest technical challenges."

Erik Olds

Erik Olds has been named OREM deputy manager. In this role, he will oversee day-to-day operations of OREM's environmental cleanup and stewardship mission and other activities.

He brings extensive headquarters and field leadership, project and program management, and policy experience to his new role, including experience with

*(See **Leadership** on page 5)*

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: Full Board Monthly Meeting, June 12, 2024
EM & Stewardship Committee: June 26, 2024

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